

D7.1

INCLUSIVE IMPACT ASSESSMENT PLAN

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



CORDOBA



RIGA



LUCCA



NITRA



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D7.1 INCLUSIVE IMPACT ASSESSMENT PLAN

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EXECUTIVE SUMMARY

The deliverable “Inclusive impact assessment plan” describes the methodology, strategy and tools which will be applied within the IN-HABIT project to evaluate the short-term impact of the Visionary and Integrated Solutions (VIS) on people’s health and well-being in the 4 pilot cities (Cordoba, Riga, Lucca and Nitra).

The first section of the document presents the objective of the evaluation and the key evaluation questions. The second section presents the theoretical framework that inspires the whole impact assessment process and the three main concepts underpinning this framework, namely the determinants of H&W, the subjective experience of well-being and the GDEI theories.

Section three is devoted to the definition of the causal links between project solutions and health and well-being aspects based in the literature review.

Section four describes the participative and theory-based methodology applied to the impact assessment. The methodology is presented in five steps: (i) selection of the H&W dimensions and sub-dimensions; (ii) review of validated scales and indicators on H&W at European and International level; (iii) consultation of local in-habitants and NGOs representatives; (iv) consultation of project partners for internal validation of both sub-dimensions and indicators; (v) definition of data collection tools, actions and sampling strategies. This fifth sub-section presents a general overview of the evaluation actions and the rationale for the use of selected qualitative and quantitative tools for data collection and analysis, including the sampling methods and the data communication strategy.

Section five is devoted to the description of the GDEI perspective and its application within the impact assessment process, with specific regard to the selection of GDEI personal characteristics and indicators and to the definition of the research assumptions on GDEI expected impacts of the IN-HABIT solutions.

Section six is devoted to the description of the Citizen Science Inclusion Mechanism used during the evaluation and its implications on ethics.

LIST OF ACRONYMS

(I)CPR	(Co-created) Common Pool Resources
CMO	Context Mechanism Result
CSIM	Citizen Science Inclusion Mechanism
DIY	Do It Yourself
EC	European Commission
ECRI	European Commission against Racism and Intolerance
ECSA	European Citizen Science Association
EU	European Union
FRA	Fundamental Rights Agency
GDEI	Gender and Diversity
GDEI	Gender Diversity Equity and Inclusion
IHW	Inclusive Health and well-being
H&W	Health and well-being
ILO	International Labour Organization
LCAs	Local community activators
MESM	Mobile Experience Sampling Method

NBS	Nature-Based Solutions
OECD	Organization for Economic Co-operation and Development
P-PE	Practical Participatory Evaluation
PPPPs	Public-Private-People Partnerships
R&I	Research and Innovation
SDGs	Sustainable Development Goals
SMSCs	Small and Medium size cities
UNDP	United Nations Development
VIS	Visionary and Integrated solution
WHO	World Health Organization
WHO-QOL	World Health Organization - Quality of Life
WP	Work Package

PARTNERS' SHORT NAMES

AVUE	Neighbourhood Association Union and Hope of Las Palmeras
BOT	Book on a Tree
BSC	Baltic Studies Center
B4B	Bridge for Billions

CORD	Ayuntamiento de Córdoba
DFC	Design for Change Spain
HIDE	Hydepark Civic Association Triptych
ISIM	isIMPACT
KQ	Kalnciema Quarter
LABORELEC	Engie Laborelec
LCREA	Lucca Crea
LUCCA	Comune di Lucca
NITRA	Mesto Nitra
PUJ	Pontificia Universidad Javeriana
RIGA	Riga Planning Region
SUA	Slovak University of Agriculture
TSR	Tesserae
UCO	Universidad de Córdoba
UNIFI	Universita di Pisa
UREAD	University of Reading
WGT	WellnessTechGroup

GLOSSARY

Baseline (ex-ante) evaluation/assessment

A baseline study is an analysis of the current situation to identify the starting points for a programme or project. It looks at what information must be considered and analyzed to establish a baseline or starting point, the benchmark against which future progress can be assessed or comparisons made.¹

Discrimination

Discrimination occurs when people are treated less favourably than other people are in a comparable situation only because they belong, or are perceived to belong to a certain group or category of people. People may be discriminated against because of their age, disability, ethnicity, origin, political belief, race, religion, sex or gender, sexual orientation, language, culture and on many other grounds. “Discrimination, which is often the result of prejudices people hold, makes people powerless, impedes them from becoming active inhabitants, restricts them from developing their skills and, in many situations, from accessing work, health services, education or accommodation”²

Equity

Discrimination is also a matter of treating in the same way people with different (protected) characteristics or identities. In this case we speak about equity which, in the field of social sciences, refers to understanding the needs of each individual, treating them accordingly and distributing the resources fairly.³

Equality

Equality is about ensuring that every individual has an equal opportunity to make the most of their lives and talents. It is also the belief that no one should have poorer life chances because of the way they were born, where they come from, what they believe, or whether they have a disability. “Equality recognises that historically certain groups of people with different characteristics such as race, disability, sex and sexual orientation have experienced discrimination”.⁴

IHW Indicators

IHW Indicators are a set of context-based key impact indicators to measure the changes produced by the IN-HABIT project on inhabitants’ inclusive health and well-being in the 4 pilot cities (GA, 52). They are co-developed with the involvement of local inhabitants and city partners, starting from the analysis and adaptation of existing indicators on subjective well-being at European and International level (OECD,

¹ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Baseline_study .

² [Glossary of terms \(coe.int\)](https://www.coe.int/en/glossary/terms).

³ <https://pediaa.com/difference-between-equity-and-equality/>.

⁴ <https://www.equalityhumanrights.com/en/secondary-education-resources/useful-information/understanding-equality>.

Eurostat, European Commission, UNDP/SDGs, other H2020-funded projects) in order to ensure comparability and to fill the gaps in terms of data availability on sustainable urban development for small and medium size cities. IHW Indicators consider both the researcher's and the inhabitants' assumptions on expected changes affecting health and well-being, with specific regard to the perspective of those people at risk of discrimination and exclusion based on different personal characteristics.

In-Hub

The In-Hub is a laboratory of social innovation where people coming from different public and private organisations or as single individuals work together for social change. It is a networking strategy for the enhancement of cooperation aimed at the co-design and co-management of spaces and a platform for structural dialogue and collaboration. In-Hubs are both physical places for meeting and sharing as well as organisational structures to facilitate the transformative process.⁵

Intersectionality

It is a feminist theory, a methodology for research, and a springboard for a social justice action agenda. Intersectional analysis aims to reveal multiple identities, exposing the different types of discrimination and disadvantage that occur as a consequence of the combination of identities. It is a particular kind of multiple discrimination which is not just based on two or more grounds of discrimination occurring on separate occasions (cumulative) or in the same occasion (additive) but have a more synergic and thus stronger effect on people (Fredman 2016). It refers to the fact that “people have multiple identities as a result of various factors, including their upbringing, social relations and history but also because of the work of institutions and power structures. Recognition of intersectionality helps to reveal the potential forms of discrimination and disadvantage that result from the combination the individuals' layered identities”.⁶

Key Impact indicators

Key Impact Indicators (KIIs) measure the changes produced by the project compared to a baseline. They can be quantitative (expressed in numbers or rates) or qualitative (expressed in phenomena, general trends, examples, typifications).⁷

Social exclusion

According to OECD, social exclusion is the “exclusion of people from society, the economy and political participation. It is a result of discrimination, whose nature and rationale varies in different contexts, and can be based on factors such as age, disability, race and ethnicity (Fleming, Cox, Wright-Revollo 2007). As defined by the EU, it is a “process whereby certain individuals are pushed to the edge of society and prevented from participating fully by virtue of their poverty, or lack of basic competencies and lifelong learning opportunities, or as a result of discrimination. This distances them from job, income and education

⁵ Glossary, GDEI Toolkit for Stakeholders Engagement, IN-HABIT D5.1

⁶ Ibidem

⁷ Glossary, GDEI Toolkit for Stakeholders Engagement, IN-HABIT D5.1

opportunities as well as social and community networks and activities. They have little access to power and decision-making bodies and thus often feeling powerless and unable to take control over the decisions that affect their day to day lives.”⁸

Social inclusion

Social inclusion is a process which ensures that those at risk of poverty and social exclusion gain the opportunities and resources necessary to participate fully in economic, social and cultural life and to enjoy a standard of living and well-being that is considered normal in the society in which they live. It ensures that they have greater participation in decision making which affects their lives and access to their fundamental rights.⁹

Subjective indicators

Subjective indicators emphasize people’s own evaluations of their lives, especially their life satisfaction (a cognitive evaluation), happiness (a positive emotional state) and unhappiness (a negative emotional state) (Diener, Suh 1997). Subjective indicators are complementary to the objectives ones (e.g. household income, unemployment rate, criminality rate in the neighbourhood) often used to assess well-being, because they allow evaluating the possible differences between what people report what their perception is regarding their satisfaction and what it is captured by statistical observation of economic and social context.

Visionary and Integrated solutions

Visionary and Integrated Solutions (VIS) refer to the innovative mobilization of existing undervalued resources (culture and heritage, food, human-animal bonds, art and environment) to increase IHW. The integrated approach is based on the combination of technological, digital, nature-based, cultural, and social innovations in selected urban public spaces. VIS will be designed with the involvement of local stakeholders and using local inhabitants’ knowledge in order to create a sense of place and ownership in the public spaces where actions are developed to boost IHW.

⁸ European Commission, *Joint report on social inclusion Social security and social inclusion* European Commission Directorate-General for Employment and Social Affairs Unit E.2 Manuscript completed in May 2004, [T409701ENrefl \(europa.eu\)](#)

⁹ [Ibidem](#)

INTRODUCTION

The deliverable D7.1 “Inclusive Assessment Plan” is part of WP7, a work package dedicated to the impact assessment of the project with specific regard to changes affecting inclusive health and well-being (IHW). WP7 is led by Isimpact (ISIM) partner, who is responsible for this evaluation process in collaboration with the School of Psychology of the University of Reading (UREAD), who will run the ex-ante and ex-post evaluation regarding mental health.

This document has been elaborated by both partners with the collaboration of researchers from the University of Cordoba.

In particular, this deliverable is the result of the work carried by ISIM during M1-M8 as part of Task 7.1 “Co-definition and validation of IHW key impact indicators and impact assessment tools” in collaboration with UREAD and the city partners.

The impact assessment on IHW involves, at different stages and levels, all partners in the 4 pilot cities (universities, local public authorities and NGOs/enterprises), and it is closely interconnected with the transversal work packages, in particular WP6 Enabling behavioural changes with a gender and diversity perspective, WP5 Citizen engagement, inclusive business models and PPPs to boost IHW, and WP8 Dissemination, exploitation, communication and outreach (DECO) strategy.

The impact assessment on IHW is part of the multidimensional impact assessment approach of the IN-HABIT project, which also includes the following parallel evaluation tasks:

- assessment of impacts on the urban space and environment (Task 5 of WP 1, 2, 3 and 4)
- assessment of impacts on local entrepreneurship and business innovation (WP8).

The impact assessment methods and tools described in the present plan are also shaped around the following IN-HABIT key elements:

- Health and well-being as co-created common pool resources (CCPR) that benefit the entire community (our ‘commons’) and require the investment of the entire community to be governed and preserved. By common pool resources (CPR) we understand resources that are owned, managed, and used by the community, but affected by the low excludability (difficulties to prevent that other individuals use the good) and high subtractability (the availability of a good decrease when the goods are used/consumed) conditions that characterise common goods. CPR embody social relations based on interdependence and cooperation and clear rules and principles conform the decision-making system (Ostrom 2002). Hence, sub-dimensions linked to the **access to health and well-being** will be included.
- Citizen’s health and well-being can be considered as competitive and finite immaterial resources. Their availability is subjected to various limits and constraints like public investments, financial and social capital, space availability, access to education, ICTs and culture, access to natural resources, safety, economic and technological development. These limitations are particularly visible in the case of urban space, whose design, functions and management schemes may favour health and

well-being of those groups with higher economic, social and political power. Most vulnerable social groups like women, children, elderly, persons with mental and physical disabilities, ethnic minorities, migrants and refugees are at risk of exclusion within this competition and most in need of public interventions to guarantee fair and equitable access to health and well-being. Whilst cities invest in the creation of public spaces, social inclusion and public physical and mental health on a regular basis, they might not necessarily do so in a visionary and integrated way. The VIS of the project aim at ensuring a more equal and fair access to health and well-being as a result of promoting urban regeneration processes. Therefore, the dimensions of **equity and accessibility of local resources** are two key sub-dimensions of well-being throughout the evaluation framework.

- The focus on small and medium size cities facing social challenges related to migrant flows and integration, economic crises, lack of resources and skills, social conflicts and fragmentation, low access to services and opportunities. IN-HABIT will advance knowledge on the health and well-being R&I needs of this type of cities, define frameworks for the collection of data at city-level, and elaborate data to monitor both the city-level evolutionary trajectories and the impact of policy actions. The results will enhance the understanding of how peripheral SMSCs work in practice. The scale of the cities, as well as their **specific challenges** have influenced evaluation questions, methodology (i.e. sampling and control groups' definition), and indicators.
- IN-HABIT visionary approach is based on putting people at the centre of innovative solutions and mobilize existing undervalued resources to boost IHW in order to co-create goods and services that overcome the limited provision of health and well-being existing for some collectives. These resources are different for each of the 4 cities, namely **culture & heritage** in Cordoba, **food** (Riga), **human-animal bonds** (Lucca), **environment and art** (Nitra). The project will integrate social, cultural, digital and NBS solutions that traditionally has been used separately, in order to foster psychological health, well-being and healthier lifestyles with a gender and inclusion approach. CPR will be mobilised in a participatory way, activating people-public-private partnerships thereby making civic, public and private sector actors to work together and find the best solutions to improve IHW. These areas have been reflected in the co-design of indicators that highlight the cause-effect links between sectoral innovations, expected changes affecting citizens' IHW, and related impact indicators.
- The **inclusive approach** towards groups at risk of discrimination and exclusion based on age, gender, disability, ethnicity, religion, sexual orientation and gender identity, and taking also into consideration intersectionality is reflected in the inclusive and participatory impact assessment methodology used in WP7.

1. Purpose of the evaluation

The objective of this plan is to evaluate the results of IN-HABIT visionary and integrated solutions (VIS) on people’s inclusive health and well-being (IHW) by capturing the short to medium term changes affecting people’s condition, with specific regard to groups at risk of discrimination by age, gender, disability, ethnicity, religion, sexual orientation and gender identity, also considering city specific minorities and intersectionality.

For the purposes of this activity, we define “evaluation” according to the EC definition: **“(Evaluation) looks at whether the changes are due, at least in part, to the intervention and why an intervention has been more or less successful in achieving its objectives”**.¹⁰

According to this definition, we can better specify the purpose of this evaluation, which includes the following elements:

- it aims at isolating the changes which are at least in part attributable to the IN-HABIT solutions from those which are not due to the project;
- it aims at measuring the quality and quantity of this change compared to a baseline in order to judge the success of the solutions in improving people’s inclusive health and well-being;
- it looks at both expected and unexpected changes produced by the solutions on people’s health and well-being.

1.1 Key evaluation questions

As a general objective, the proposed evaluation action aims at revealing and isolating the results of IN-HABIT solutions on socio-economic well-being, subjective well-being and healthy lifestyles of the target groups in the 4 pilot cities.

More specifically, the assessment framework will help answering to the following evaluation questions (See Table 1):

— Table 1 - Evaluation questions

Transversal questions across the 4 pilots	
1	How and to what extent people’s health and well-being has improved thanks to the IN-HABIT solutions?

¹⁰H2020 Indicators. *Assessing the results and impacts of Horizon 2020*. European Commission Directorate-General for Research and Innovation Directorate A - Policy Development and Coordination Unit A.5 – Evaluation, 2015.

2	Does the impact show any significant difference among the groups at risk of discrimination in each city?
3	Which is the impact on each group at risk of discrimination compared to the rest of the target inhabitants?
4	Which component of the innovation (social, cultural, nature-based and digital) has produced the most significant changes on people's health and well-being?
5	Which sub-dimensions of health and well-being have been most affected by the solutions?
6	How and to what extent the results of the project have been influenced by the Covid-19 pandemic?

City specific questions

Cordoba	<p>How and to what extent culture and heritage-related solutions have improved the health and well-being of local target groups?</p> <p>What sub-dimensions of health and well-being have been most affected by culture-related solutions?</p>
Lucca	<p>How and to what extent human-animal bonds solutions have improved the health and well-being of local target groups?</p> <p>What sub-dimensions of health and well-being have been most affected by human-animal solutions?</p>
Riga	<p>How and to what extent food-related solutions have improved the health and well-being of local target groups?</p> <p>What sub-dimensions of health and well-being have been most affected by food-related solutions?</p>
Nitra	<p>How and to what extent art and nature-based solutions have improved the health and well-being of local target groups?</p> <p>What sub-dimensions of health and well-being have been most affected by art and nature-based solutions?</p>

2. Theoretical framework

2.1 Theoretical framework on health and well-being

This section describes the interdisciplinary and multi-dimensional theoretical framework on H&W that is applied in the proposed Impact Assessment Plan and aims to explain how H&W and their determinants are defined in the literature, in order to identify the dimensions, sub-dimensions and indicators that will conform this Plan. From the different approaches have been selected those more aligned with IN-HABIT objectives and target groups as described in the methodological part of the Grant Agreement Annex 1 and consistently referred to in the INHABIT Glossary.

As sources of information have been used both the scientific literature and the official web sites and documents of government and organizational institutions such as the World Health Organization (WHO) and the Organisation for Economic Co-operation and Development (OECD) for its worldwide influence in defining and measuring health and well-being.

The theoretical framework on H&W reflects an interdisciplinary and multidimensional vision of well-being that has been applied to the impact assessment.

It is based on the multidimensional definition of well-being adopted by the OECD and WHO, in order to address the scope of the Call that explicitly asks for assessing the “multiple benefits and co-benefits” of the VIS while ensuring their equal distribution among groups as well as their “Right to the City”.

In particular, we consider one of the most relevant definitions of health for this project, the one stated in the preamble of WHO Constitution in 1946, health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being, without distinction of race, religion, political beliefs or economic and social conditions (WHO, 2010).

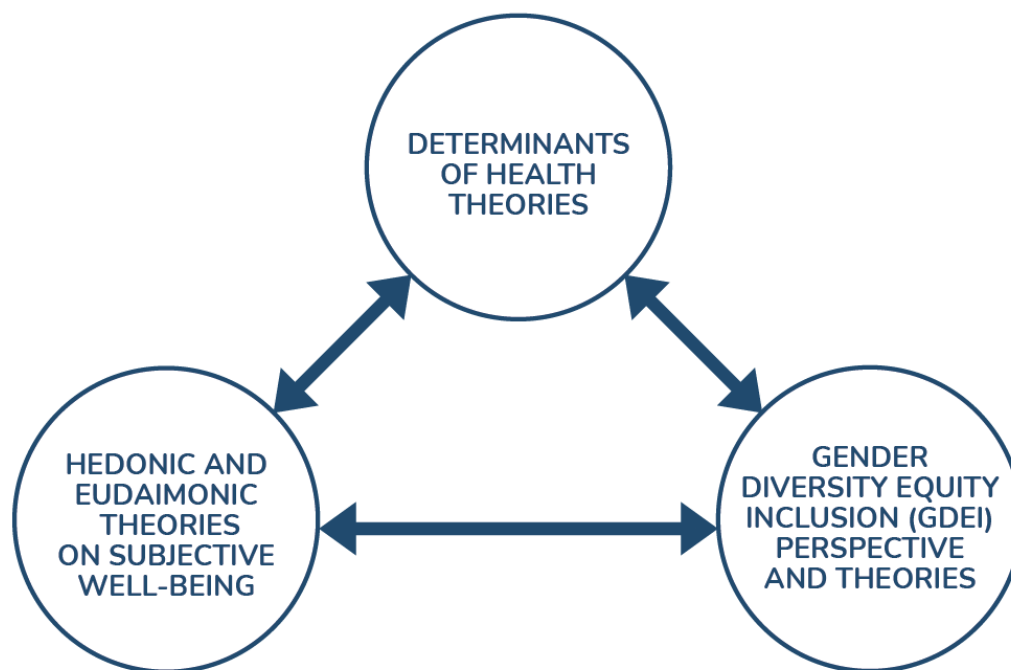
Even, if there is no consensus around a unified definition of well-being, there is general agreement that at minimum, well-being includes the presence of positive emotions and moods (e.g., contentment, happiness), satisfaction with life, fulfillment and positive functioning, and the absence or low presence of negative emotions like depression and anxiety (Andrew and Withey 1976, Ryff and Keyes 1995, Frey and Stutzer 2002).

For public health purposes, physical well-being (e.g., feeling healthy and full of energy) is also viewed as critical to overall well-being. Indeed, researchers from different disciplines have included other aspects of well-being that go beyond its physical dimension, such as social well-being (including economic well-being, domain specific satisfaction, or engaging activities and work), and psychological or subjective well-being (including emotional well-being, life satisfaction, development and activity) (Kaplan, Anderson et al.

1993, Diener 2000, Frey and Stutzer 2002, Keyes 2002, Kahneman, Krueger et al. 2004, Strine, Chapman et al. 2008, Veenhoven 2008).

Thus, the main areas of well-being suggested from research follow the health dimensions proposed by WHO. Likewise, the proposed theoretical framework for this assessment plan includes these different H&W dimensions into its evaluation design.

— Figure n.1 - The theoretical framework



The multidimensional theoretical framework of H&W is described in figure 1. It is based on three main theoretical constructs that are all strongly interrelated:

1. The theory of the **Determinants of Health** defined by WHO, which is reflected in the selection of the dimensions of social well-being, economic well-being, spatial-environmental well-being and healthy lifestyles
2. The **Hedonic and Eudaimonic** theoretical approaches, which are reflected in the selection of the **subjective well-being** dimension
3. The **GDEI perspective and theories** that highlight the relationship between well-being and discrimination and it is reflected in the identification of GDEI sub-dimensions and indicators as well as in other methodological approaches of this plan

> Coherence with the Call for proposals

The selection of the social, economic and spatial-environmental dimensions of well-being is coherent with the scope of the Call, that claims for solutions that “address social, cultural, economic and environmental determinants of health and well-being”. IN-HABIT also adds the healthy lifestyles dimension and the subjective well-being dimension, which includes the psychological well-being and the mental distress aspects since they are considered essential to assess all the multiple benefits of the project solutions on local communities.

Our multidimensional and multidisciplinary approach to well-being is also in line with other two suggestions of the Call:

- the involvement of social sciences and humanities disciplines such as psychology, behavioural science, economics, law, anthropology, sociology, architecture, or design studies;
- to measure benefits and capture the multiple co-benefits created by nature-based solutions in terms of health and well-being.

2.1.1 The determinants of health and well-being

The first scientific construct that characterizes the proposed framework on H&W is represented by the theory on the **determinants of well-being** represented by WHO and OECD approaches. This theoretical approaches argue that health and well-being are influenced by the social, economic and environmental context.

According to WHO (2012), mental health and well-being is influenced not only by individual attributes, but also by the social circumstances in which persons find themselves and the environment in which they live; these determinants interact with each other dynamically, and may threaten or protect an individual’s mental health state”.

The factors that determine mental health and well-being fall into three broad areas: **individual, socio-economic and environmental** (Kaplan, Anderson et al. 1993, Keyes 2002, Dahlgren and Whitehead 2021). When the determinants of these factors are affected, there is increased likelihood of poor mental health and well-being (WHO 2012).

Several recognized institutions and theoretical models have attempted to identify the determinants of mental health and well-being.

The WHO (2010) introduced the concept of social determinants of health (SDH) to describe the non-medical factors that influence health outcomes. The SDH are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social

policies, and political systems. This approach offers the opportunity of interpreting health beyond the lack of disease, needing to measure this one in a complex system of multiple dimensions.

The SDH are mainly based on 3 theoretical non-mutually exclusive approaches: psychosocial approaches; social production of disease/political economy of health; and eco-social frameworks. All three of these theoretical traditions emphasize the concept of “social position”, which is found to play a central role in the social determinants of health inequities (WHO 2010).

The following chart includes those proposed by WHO.

— Table 2 - Determinants of mental health and well-being according to WHO

Determinants of mental health and well-being		
Individual attributes and behaviour	Social and economic circumstances	Environmental factors
Emotional intelligence	Participation	Social inclusion and equality
Spirituality	Social network	Physical environment
Learning and development	Social support	No stigma/discrimination
Healthy leaving	Trust	Financial security
Physical health	Safety	No violence
	Working opportunities	

In countries at all levels of income, health and illness follow a social gradient: the lower the socioeconomic position, the worse the health. Moreover, the WHO conceptual framework of the SDH identifies as structural mechanisms those that generate stratification and social class divisions in the society and that define individual socioeconomic position within hierarchies of power, prestige and access to resources. It is very important to note that in countries at all levels of income, health and illness follow a social gradient: the lower the socioeconomic position of the person, the worse the health status. The most important structural stratifiers and their proxy indicators include: income, education, occupation, social class, gender, and race/ethnicity.

In addition, the underlying SDH inequities operate through a set of intermediary determinants of health to shape health outcomes. The main categories of intermediary determinants of health are: material circumstances; psychosocial circumstances; behavioural and/or biological factors; and the health system itself as a social determinant (WHO 2010).

The WHO approach of the SDH is consistent with the **Diderichsen's model** of “**the mechanisms of health inequality**” (Diderichsen, Andersen et al. 2012), which identifies how the following mechanisms stratify health outcomes:

- Social contexts, which includes the structure of society or the social relations in society, create social stratification and assign individuals to different social positions.
- Social stratification in turn engenders differential exposure to health-damaging conditions and differential vulnerability, in terms of health conditions and material resource availability.
- Social stratification likewise determines differential consequences of ill health for more and less advantaged groups (including economic and social consequences, as well as differential health outcomes per se).

Since IN-HABIT project is focused on VIS to boost equitable access to health and well-being for marginalized communities, **the determinants of health theories were considered particularly coherent with the objective of the impact assessment** and the above mentioned SDH have thus been included in the proposed assessment framework as H&W dimensions and sub-dimensions.

Additionally, according to the OECD, the perception of the resources and opportunities provided by the city as well as the perception of freedom and equality in accessing these resources and opportunities have an impact on individuals' health and well-being.

OECD defined this “set of resources at disposal of a community that underpin future well-being” (OECD 2020) as the **capital of a community**. Accordingly, four types of capital are identified:

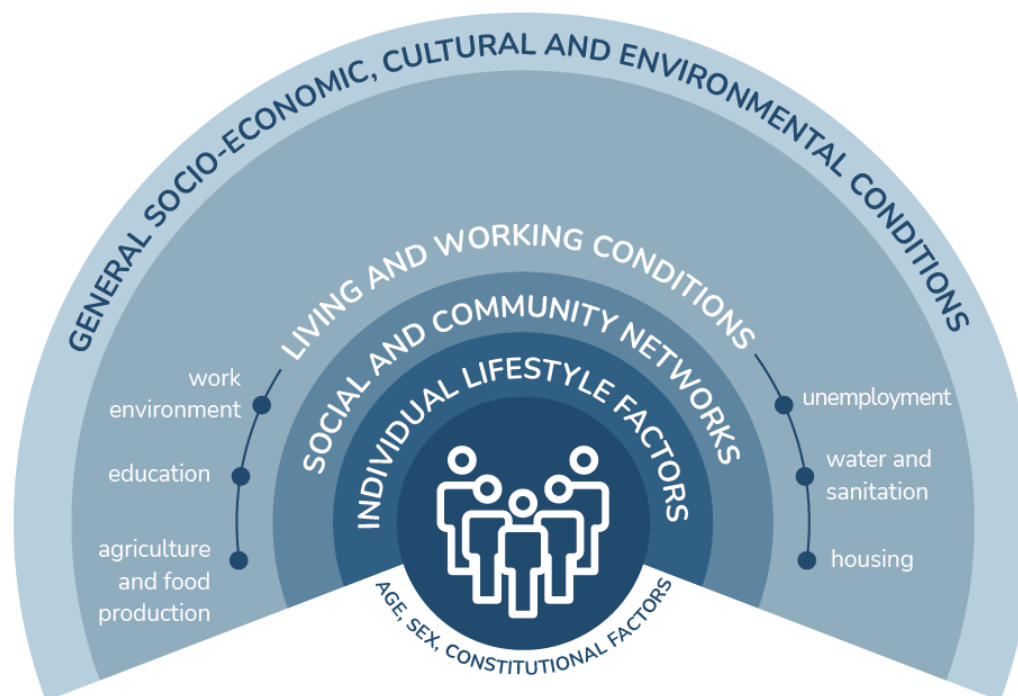
1. economic capital, which includes both man-made and financial assets;
2. natural capital, encompassing natural assets (e.g. stocks of natural resources, land cover, species biodiversity) as well as ecosystems and their services (e.g. oceans, forests, soil and the atmosphere);
3. human capital, which refers to the skills and future health of individuals;
4. social capital, addressing the social norms, shared values and institutional arrangements that foster co-operation.

The IN-HABIT impact assessment framework on IHW, in line with the OECD and WHO approaches, **recognizes the multiple interconnections linking health and well-being with economic, natural, human and social capital** of the four city contexts.

The IN-HABIT impact assessment framework on IHW considers also the interdependencies between well-being and the social, institutional and economic context of the four pilot cities, by focusing on the dimensions of social well-being and economic well-being. It also embeds many of the WHO determinants of mental health and well-being in its analysis, specifically: participation, social network, social support, trust, safety, working opportunities, social inclusion and equality, physical environment, discrimination, financial security.

Moreover, the “**Dahlgren and Whitehead model**” of the main determinants of health, also known as the Rainbow Model (Dahlgren & Whitehead, 1991, 2021) is a systematic framework that has been widely used in health inequality research. This model provides a rainbow-like representation that incorporates the main determinants of the health of the population (Figure 2).

— Figure n.2 - The “Dahlgren and Whitehead model” of the determinants of health



Source: Dahlgren and Whitehead, 1991

The model suggests that the different determinants are organized as layers with several degrees of proximity from the person. These layers are interconnected, facilitating a mutual influence. Importantly, most determinants of health are of social nature, and thus, society and social action may have an impact on them.

The importance given to the influence of social determinants on health by this model resembles WHO and OCDE conceptualizations.

As shown in Figure 2, the core of the model are the **personal characteristics** of the individual, which include sex/gender, age, ethnicity and biological factors. Since these are individual factors, there is less control over them, but, as it will be explained later, some of these factors may influence H&W in different ways, and so they should be considered when analysing health outcomes. The next layer are the **individual lifestyle factors**, which includes health-related behaviour such as eating, physical activity, smoking, or alcohol use.

Social and community networks is the next layer, and this includes the social support from family, friendship, neighbours, or local communities. The next layer is formed by **living and working conditions, which includes access and opportunities** regarding job (e.g., (un)employment, work environment), education, housing, water and sanitation, agriculture and food production, and healthcare services. The last layer considers general socioeconomic, cultural and environmental conditions, with factors like work opportunities or taxation (Public Health England, 2017).

By considering multiple and interrelated social determinants that may influence a population health status, this framework facilitates multi-sectoral actions and policy-making (Dahlgren & Whitehead, 2021).

Overall, this model provides a holistic and simple perspective that focuses on the determinants of health rather than the causes of disease.

This model is also reflected in the choice of the dimensions and sub-dimensions of H&W within the proposed impact assessment plan, with specific reference to social inclusion and social cohesion, equality and accessibility of local resources, social and civic engagement, social network support, institutional support, employment and living conditions, healthy lifestyles and behaviours.

Further literature review on the social well-being, economic well-being and spatial-environmental well-being and their relationship with the IN-HABIT VIS is presented in section 3.

2.1.2 The subjective experience of well-being

The second conceptual element that has been applied to the present assessment framework is the importance of the **subjective experience of well-being**.

As stated by Eurofound (European Foundation for the Improvement of Living and Working conditions) “subjective well-being refers to an individual’s own assessment of their quality of life and their situation”. We consider this consistent with an approach that sees subjective wellbeing as a multifaceted construct that brings together **Hedonic and Eudaimonic research approaches**: “the hedonic tradition, which accentuated constructs such as happiness, positive affect, low negative affect, and satisfaction with life (e.g., Bradburn, 1969; Diener, 1984; Kahneman, Diener, & Schwarz, 1999; Lyubomirsky & Lepper, 1999); and the Eudaimonic tradition, which highlighted positive psychological functioning and human development (e.g., Rogers, 1961; Ryff, 1989a; 1989b; Waterman, 1993).

It is a construct consisting of two main components: positive aspects of subjective wellbeing, as measured by general psychological well-being (which contains components of positive emotions, physical well-being, and interest; Bech, 2004; Topp et. al, 2015) and life satisfaction (Ryff, 1989a; 1989b); and negative aspects of subjective wellbeing, in terms of mental distress and poor mental health (Kessler et. al, 2003; Prochaska et al. 2012).

Further literature review on subjective well-being and its relationship with the IN-HABIT VIS is presented in section 3.

Within the IN-HABIT assessment framework on IHW this definition of subjective well-being is reflected in the **selection of a set of validated psychometric scales that assess psychological well-being, life satisfaction and mental distress.**

The proposed perspective on well-being lies in the space where subjective well-being encounters the urban fabric, by establishing interdependencies between subjective well-being and the social, economic, cultural and institutional context of each pilot city.

The proposed impact assessment will explore the relation between these aspects of subjective well-being and other sub-dimensions such as the sense of safety, the satisfaction with urban green areas, the relationship with culture, nature and food, the level of social inclusion, social engagement and social cohesion, the job and skills satisfaction and the practice of healthy behaviours.

2.1.3 The GDEI theories

Last but not least, the three scientific constructs described above are integrated with a transversal **GDEI** perspective which lies on a wide literature that highlights the relationship between well-being and discrimination. The proposed theoretical framework consider health and well-being as strongly influenced by the personal condition of exclusion and discrimination of people.

There is a link between mental health and people vulnerable to exclusion and discrimination which has been studied by the many researchers. Ilan Meyer (2003) has developed the **minority stress model** based on his research on mental health of LGBT people. The model “describes the relationship of social stressors and LGBT mental health and identifies the mechanisms by which social stressors impact on health and well being of LGBT people and the harm that prejudice and stigma do to LGBT people. Minority stress is additional to general stressors that are experienced by all people and members of minority groups who require a stress adaptation effort above that required of non-minorities.

According to WHO, both inequalities and discrimination have a deep impact on people health and lifestyles which is “a way of living based on identifiable patterns of behaviour which are determined by the interplay between an individual’s personal characteristics, social interactions, and socio-economic and environmental living conditions and not fixed, but subject to change”. It is important to recognize, however, that there is no “optimal” lifestyle to be prescribed for all people. Personal characteristics such as “culture, income, family structure, age, physical ability, home and work environment will make certain ways and conditions of living more attractive, feasible and appropriate”.

Studies have shown that perceived discrimination has an impact on our physical and mental health. A relevant part of literature has highlighted the influence of discrimination based on race or ethnicity on mental and physical health outcomes. However, the influence of other types of discrimination on health has been understudied (Alvarez-Galvez J., Salvador-Carulla L 2013).

Discrimination has an important impact on health and well-being not only because it hinders the access to work and public services but also because it makes the access to public spaces unsafe (e.g harassment is considered by EU directives as discrimination). Discrimination, which is often the result of prejudices

people hold, makes people powerless, impedes them from becoming active inhabitants, restricts them from developing their skills and, in many situations, from accessing work, health services, education or accommodation. Discrimination has direct consequences on those people and groups being discriminated against, but it has also indirect and deep consequences on society as a whole. A society where discrimination is allowed or tolerated is a society where people are deprived from freely exercising their full potential for themselves and for society.¹¹

Further literature review on GDEI and its relationship with the IN-HABIT VIS is presented in Annex 3 and in section 4 of this plan.

The proposed conceptual framework of health and well-being considers equality and discrimination as key aspects of social well-being and aims at identifying the differential impact of the IN-HABIT solution on people at risk of discrimination by age (elderly), disability, ethnicity, religion, gender, sexual orientation and gender identity.

For this reason, the IN-HABIT consortium agreed on a definition of “Inclusive Health And Well-being”, which is defined as “an **equitable** distribution of health and well being in a society, in a way that takes particular account of the **needs of groups vulnerable to discrimination and exclusion** such as the elderly, women, migrants, ethnic minorities, LGBTIQ+ people, and persons with disabilities.”¹²

The GDEI perspective is mainstreamed across the whole evaluation plan, considering the following assumptions:

- 1) The envisaged nature based, social, cultural, and digital solutions may have different impacts on local inhabitants depending on their personal characteristics, since they may benefit from these solutions in different ways.
- 2) GDEI personal characteristics and conditions such as age, gender, legal status, country of birth, ethnicity, sexual orientation, gender identity, disability, religion and belief may influence the perception of well-being and health and, consequently, the definition of expected results, indicators and self-reported changes. These theoretical assumption are applied to the proposed impact assessment methodology, since they influence the sampling strategy, the selection of the indicators and the choice of the assessment tools, as better explained in the next sections.

¹¹ [Discrimination and Intolerance - Council of Europe \(coe.int\)](https://www.coe.int/en/web/conventions/full-text/?convention=-/T-1994-001)

¹² Glossary, GDEI Toolkit for Stakeholder Engagement, IN-HABIT D5.1

3. Literature review for the definition of H&W dimensions and sub-dimensions

The literature review was carried by partners Isimpact and University of Reading School of Psychology, with the aim of supporting the scientific constructs at the basis of the selection of the IHW dimensions and sub-dimensions of H&W, by linking the theoretical framework with the project innovative solutions to boost H&W.

The literature review also contributed to the definition of the causal links between the project VIS and the different aspects of H&W. The dimensions and sub-dimensions of H&W involved in the impact assessment are presented in the following table (table 3).

This section will present each dimension of H&W and related sub-dimensions as a result of the literature review.

— Table 3 – Dimensions and sub-dimensions of H&W involved in the impact assessment

Dimensions	Sub-dimensions
Social well-being	Social cohesion
	Social inclusion
	Civil and social engagement
	Equality
	Discrimination
Spatial and environmental well-being	Sense of safety
	Satisfaction with urban green areas
	Perception of noise and air pollution
	Perception of the neighbourhood and sense of belonging
	Accessibility of resources
Subjective well-being	Mental distress
	Psychological well-being
	Life satisfaction

Healthy lifestyles	Perceived physical health
	Eating habits
	Sports practice
	Social and cultural habits
	Human-animal interaction
	Leisure and free time
Economic well-being	Employment
	Job and skills satisfaction
	Financial situation
	Housing and living conditions

3.1 Social, economic and spatial-environmental well-being

Based on the theory on the socio-economic and environmental determinants of well-being represented by the WHO and OECD approaches, **the dimensions of social well-being, economic well-being and spatial-environmental well-being were identified as key components of IHW within the IN-HABIT framework.** According to WHO (2012), the social, economic and environmental circumstances have a great influence on health and well-being and the determinants of health include socio-economic aspects like participation, social network, social support, trust in others, safety, absence of violence, working opportunities, social inclusion, equality, discrimination, physical environment, financial security.

As social beings, we need not only good material conditions but, from early childhood onwards, we need to feel valued and appreciated. We need friends, we need more sociable societies, we need to feel useful, and we need to exercise a significant degree of control over meaningful work. Without these we become more prone to depression, drug use, anxiety, hostility and feelings of hopelessness which all rebound on physical health (WHO 2003). This social dimension directly affects our mental health and feelings of well-being: our relationships with other people are an important part of life. If we experience a conflict or a loss of one of our relationships, we are likely to feel emotions related to grief. Loneliness can have a detrimental impact on our mental health and can affect anyone – even when surrounded by others. Due to the current pandemic and subsequent social restrictions, it is harder to combat our feelings of loneliness¹³.

¹³ <https://www.northernhealthcare.org.uk/news-resources/what-factors-affect-our-mental-health-understanding-the-social-physiological-and-environmental-impact/> ,

According to the scientific literature review, **the dimension of social well-being includes a number of aspects that can be influenced by the IN-HABIT visionary** and integrated solutions since they are closely linked to the concept of well-being as a common pool resource derived by Ostrom's theory. In particular, the sub-dimensions of discrimination and equality have already been explored by the psycho-social and socio-anthropological studies as key aspects of health and well-being. However, by analysing the role of equality and discrimination in the access to local resources and innovations and their relation with other well-being aspects (both social and subjective), the proposed impact assessment framework will advance on the research on equality and (absence of) discrimination as H&W determinants in the urban context.

Discrimination is considered as a sub-dimension of social well-being because it can be understood as a social stressor that has a physiological effect on individuals (e.g., irregular heartbeat, anxiety, heartburn) that can be compounded over time and can lead to long-term negative health outcomes.

Discrimination can occur at both structural and individual levels. Structural discrimination refers to macro-level conditions (e.g., residential segregation) that limit opportunities, resources, and well-being" of less privileged groups. Individual discrimination refers to negative interactions between individuals in their institutional roles (e.g., health care provider and patient) or as public or private individuals (e.g., salesperson and customer) based on individual characteristics (e.g., race, gender, etc.)¹⁴. Individual and structural discrimination can cause either intentional or unintentional harm, whether or not it is perceived by the individual. The functioning of democratic institutions and civil society, based on the equal treatment of all inhabitants, shapes an important dimension in the quality of life for European inhabitants. Discrimination by compromising the attainment and enjoyment of human rights, including the right to health, has a negative impact on health and well-being, in particular mental health (VicHealth 2008).

Strongly linked to discrimination is the **perception of equality**. Equality is about ensuring that every individual has an equal opportunity to make the most of their lives and talents. It is also the belief that no one should have poorer life chances because of the way they were born, where they come from, what they believe, or whether they have a disability. Equality recognizes that historically certain groups of people with protected characteristics such as race, disability, sex and sexual orientation have experienced discrimination (OECD 2011).

Social cohesion and social inclusion have been identified as further components (sub-dimensions) of social well-being. The EU has put increasing emphasis on the promotion of social cohesion as a central element for the improvement of quality of life for its inhabitants. There is evidence that living in a cohesive society has a positive impact on subjective well-being, helping to improve the lives of inhabitants. With

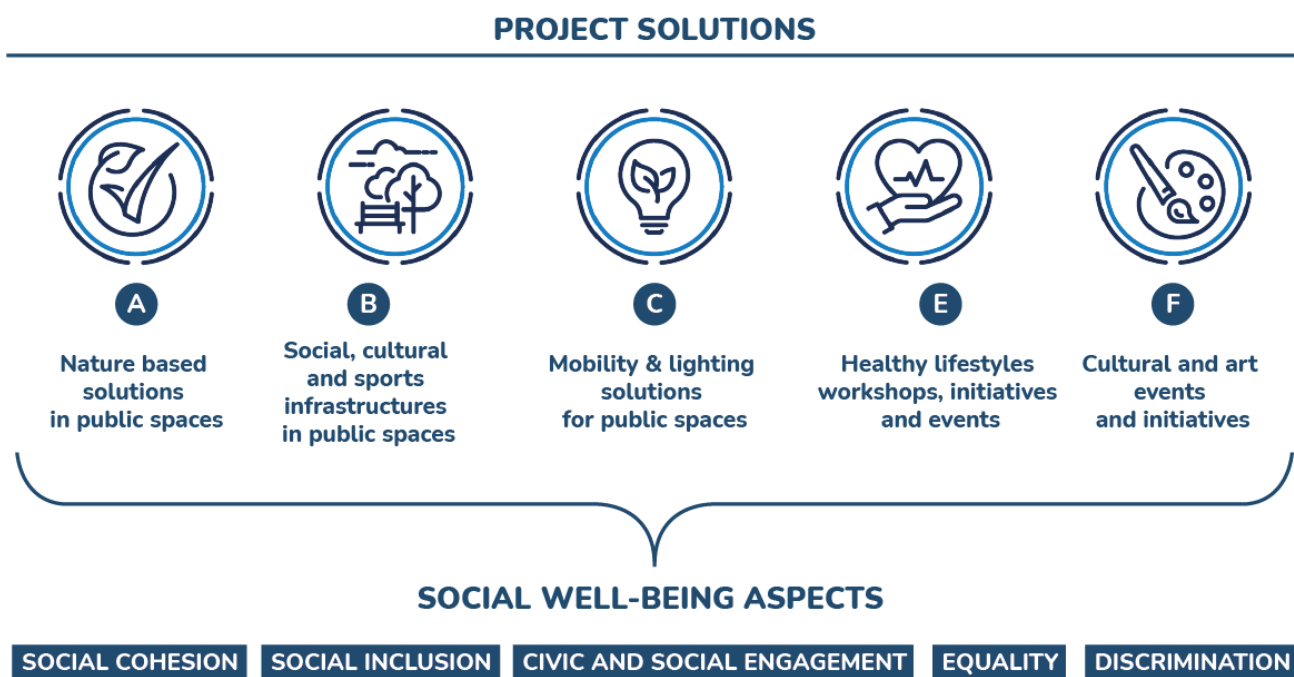
¹⁴ <https://www.nefconsulting.com/our-services/evaluation-impact-assessment/prove-and-improve-toolkits/individual-social-indicators/>

initiatives such as the Europe 2020 strategy, the goal to promote fairer and more inclusive societies has taken centre stage. While social exclusion has mainly been considered in terms of risks for poverty, the extent to which people feel included in society and participate actively in family, neighbourhood or social activities is directly relevant to well-being.

Social well-being aspects are considered within the IN-HABIT impact assessment framework as they are likely to be affected by the project solutions, especially when it comes to consider the effects of the following VIS applied in the four cities.

The following figure shows the causal links between the project solutions and the various sub-dimensions (aspects) of social well-being based on the literature review.

— Figure n.3 - Causal links between IN-HABIT solutions and social well-being aspects based on the literature



Economic well-being is another dimension that is considered as a health and well-being determinant according to WHO.

Studies show that feeling anxious around our financial, housing or work situation can make our mental health worse since being unemployed, and having difficulties with landlords, house repairs or fulfilling mortgage payments can negatively impact on self-confidence and mental well-being.

According to OECD (2011), **income and wealth (financial situation)** are essential components of the well-being of individuals and societies because they increase people’s consumption possibilities which allow them to satisfy their needs. They help people to face and be protected from unexpected shocks that could

lead to poverty and destitution, also bringing to them non-economic benefits, such as higher health status and education, higher life satisfaction and the possibility of living in safer and cleaner areas.

The **quality of housing** also determines people’s well-being as poor housing conditions can affect people’s health status (both mental and physical), family functioning (e.g. relations between household members and the development of children) and the conduct of basic social activities such as inviting people at home. Having an adequate accommodation beyond being at the top of the hierarchy of human material needs and housing is one of the most important expenditures for many households (OECD 2011).

The positive relation between **job and skills satisfaction, employment perception and well-being** is well acknowledged. According to the WHO (2003), “job security increases health, well-being and job satisfaction. The health effects of unemployment are linked to both its psychological consequences and the financial problems it brings – especially debt. Because very unsatisfactory or insecure jobs can be as harmful as unemployment, merely having a job will not always protect physical and mental health: job quality is also important.

Within the proposed assessment framework **the dimension of economic well-being includes employment, job and skills satisfaction, financial situation, housing and living conditions.**

The following figure shows the causal links between the project solutions and the various sub-dimensions (aspects) of economic well-being based on the literature review.

— Figure n.4 - Causal links between IN-HABIT solutions and economic well-being aspects based on the literature

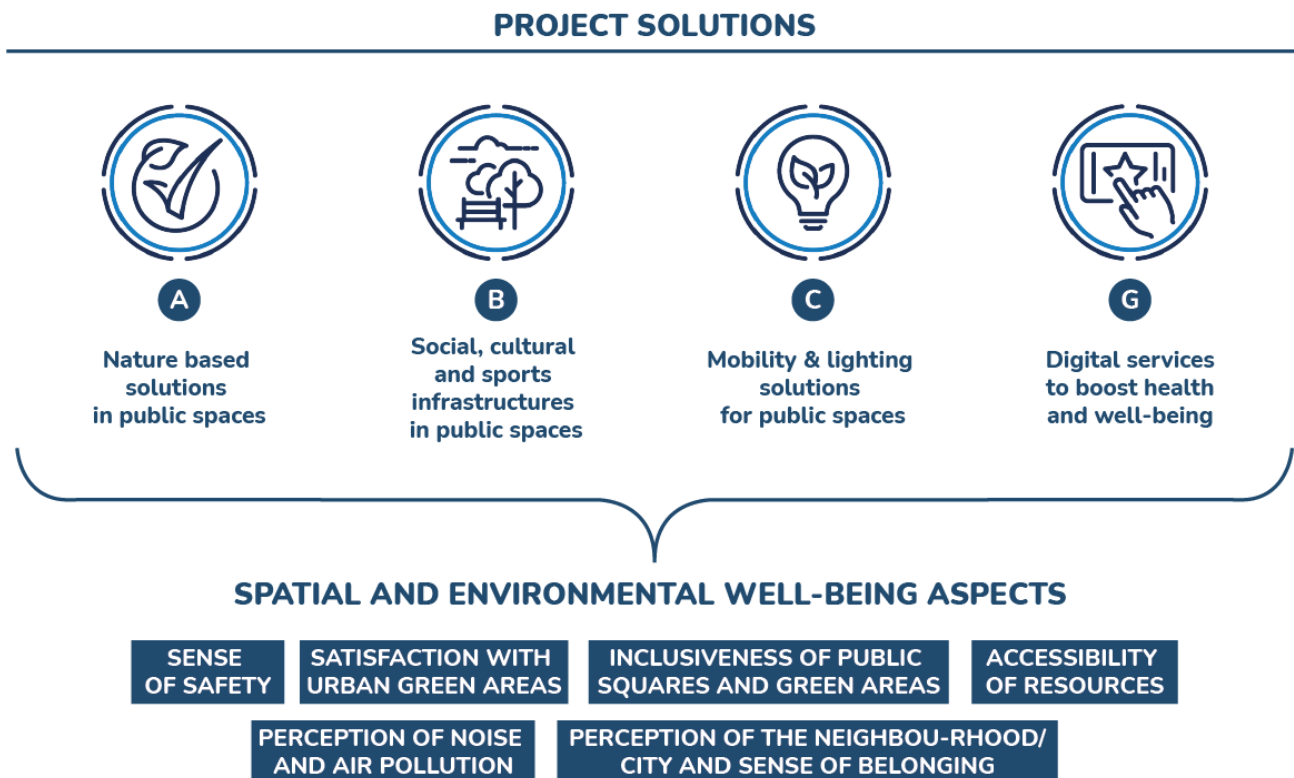


Within the proposed assessment framework, due to the nature of the city solutions and in coherence with the WHO theory on health determinants, the concept of well-being has been put in close correlation with the **urban space and environment**. That is why the dimension of spatial and environmental well-being is included in the proposed framework, that also includes the sub-dimensions of “perception of security”, “satisfaction with urban green areas”, “accessibility of local resources”, “perceived noise and air pollution” and “sense of belonging and perception of the neighbourhood”.

According to Anand and Santos (2006), **personal security and well-being are interrelated**: personal security is a core element for the well-being of individuals and of society as a whole, and the experience of crime is one of the main factors shaping people’s personal security. Crime may lead to loss of life and property, as well as engendering physical pain, post-traumatic stress and anxiety. It may also cause impairments in occupational activities (e.g. lower productivity and higher absenteeism) and disruption in social functioning (e.g. restriction in freedom of movement and erosion of social cohesion within communities). The biggest impact of crime on people’s well-being appears to be through the feeling of vulnerability that it causes”.

Groenewegen et al. (2018) connect physical and social environment: there is not a strict distinction between physical and social environment because we live in a largely man-made world. Spatial well-being is therefore the product of the interrelation between “physical environment” which refers to “spatial characteristics and physical exposures” and “social environment” which refers to “characteristics based on social activities and life style (Schulz et al. 2005; Groenewegen et al. 2018)”. Even though only few specific dimensions of neighbourhood environment have been included (examples: for green space De Jong et al., 2012; for social safety: Lovasi et al., 2014; for social capital: Giordano et al., 2011; for air quality: Jacquemin et al., 2015), empirical evidence shows that different dimensions of the neighbourhood environment have an influence on health and well-being such as environmental exposure, food and recreational resources, built environment, aesthetic quality/natural spaces services, quality of housing (Ann. N.Y. Acad. Sci. 2010). The following figure shows the causal links between the project solutions and the various sub-dimensions (aspects) of spatial and environmental well-being based on the literature review.

— Figure n.5 - Causal links between IN-HABIT solutions and spatial-environmental well-being aspects based on the literature



3.2 Subjective well-being

Within the proposed assessment framework, the dimension of **subjective well-being** includes general psychological well-being and life satisfaction as positive well-being measures, and mental distress as a negative well-being measure.

This subjective sense of well-being has a range of components, related to general psychological well-being, life satisfaction and the absence of psychological distress and poor mental health.

The importance of these three sub-dimensions of subjective well-being have been highlighted in a wide range of past research.

The European Pact for Mental Health and Well-being (2008)¹⁵ defines mental health as a human right since it enables inhabitants to enjoy well-being, quality of life and health and promotes learning, working and participation in society.

¹⁵ https://ec.europa.eu/health/ph_determinants/life_style/mental/docs/pact_en.pdf

Mental health is described in the WHO Health Promotion Glossary ¹⁶as a state of well-being in which the individual realises his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her community.

WHO speaks about mental health also as “psychological well-being”, which makes up an integral part of an individual's capacity to lead a fulfilling life, including the ability to form and maintain relationships, to study, work or pursue leisure interests, and to make day-to-day decisions about educational, employment, housing or other choices.

According to the WHO (2012), mental well-being makes up an integral part of an individual's capacity to lead a fulfilling life, including the ability to form relationships, study, work or pursue leisure interests, as well as to make day-to-day decisions and choices.

The UK Office for National Statistics (2022) considers life satisfaction as one of its key well-being indicators, as does the European Social Survey (2015).

In relation to the VIS proposed by the cities, we suggest that it is vitally important to monitor subjective well-being as it has been shown to have positive links to the types of innovative activities being promoted in each of the cities – we provide a small snapshot of the wide range of available evidence below.

With regards to art, culture and heritage, a review by Historic England has shown a wide range of existing evidence which demonstrates clear **links between access to cultural and historic sites and subjective well-being** (Historic England 2018). Studies such as Grossi et al. (2018) have shown that spending time at cultural sites can increase subjective well-being alongside reducing levels of stress-related biomarkers. Benefits for engaging with culture, heritage and the arts have been demonstrated in cross-European research (e.g., Ateca-Amestoy et. al. 2021). We would therefore expect that improving access to cultural sites for our target communities would increase subjective well-being and support the reduction of mental distress. This is echoed in work on links between art and well-being. A systematic review for the What Works Centre on Well-being (2018) concluded that engagement with the visual arts could have positive impacts on well-being for those with poor mental health.

Pesata et. al. (2022) have shown similar findings in a scoping review of general population studies that showed benefits for psychological well-being from engaging with art.

Food plays a vital role in well-being, not just in terms of physical health and nutrition, but also in terms of the hedonic and emotional benefits associated with food (Ares et al. 2014). The emotional and spiritual benefits of food have been shown to vary across countries and cultures (ib.). Importantly, access to healthy and nutritious food has an impact on mental health and well-being (Firth et al. 2020) via a range of mechanisms including the gut microbiome. Increasing engagement with food has the potential to improve well-being not only by nutrition-based changes in mental health, but also in terms of the link between positive emotional responses to food and arises in life satisfaction and general psychological well-being. Interaction with the process of growing food (and other gardening activities) as part of a community has been shown to positively impact on subjective well-being.

¹⁶ <https://www.who.int/publications/i/item/9789240038349>

Schmutz et al. (2014) show that gardening and good growing can have a wide range of benefits for health and well-being, including psychological well-being and positive mental health. Wood et al. (2022) have demonstrated the benefits to mental health of gardening-based interventions for vulnerable groups, especially during the pandemic.

A large scale meta-analysis of studies from around the world also supports this, showing mental health and well-being to be positively affected by gardening interventions (Soga et al. 2017). Interventions related to getting communities to engage more closely with the natural environment in terms of growing and gardening should have positive effects on subjective well-being.

The human-animal bond has been closely linked to benefits in subjective well-being. For example, Jacobs Bao and Schreer (2016) have shown benefits for life satisfaction for pet owners in general, and for wider subjective wellbeing for dog owners. Odendaal (2002) shows that more contact with animals can increase wellbeing, and links this to a range of physiological mechanisms. Gan et al (2020) show that more positive mental health outcomes are associated with pet ownership in a particular at-risk community (older adults). We would expect that increased contact with animals within the community would be associated with more positive general psychological wellbeing and life satisfaction, and with a reduction in mental distress.

The proposed sub-dimensions and indicators of subjective well-being have been selected by UREAD based on robustly validated psychometric scales that have been used extensively in past large scale project designs that have included cross-country comparisons in diverse communities namely:

- the WHO-5 scale¹⁷ (indicators on positive emotions)
- the Kessler Psychological Distress Scale (K6)¹⁸ (indicators on psychological distress)
- Life Satisfaction scale (taken from Ryff's research, but also employed in major social surveys ESS, ONS etc.)

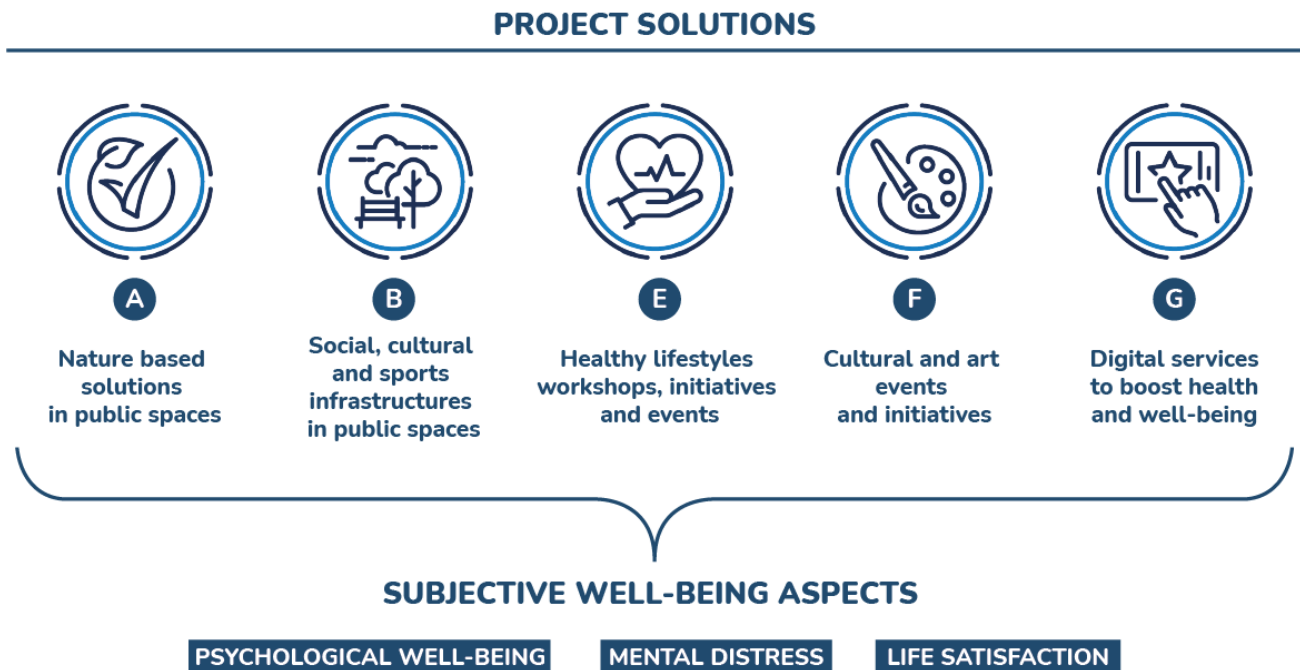
Further information on the validity of these measures is available here: WHO5 (Topp et. al, 2015), Kessler 6 (Prochaska et al., 2012), Ryff 's Life Satisfaction Measure (Kafka et al, 2002).

The following figure shows the causal links between the project solutions and the various sub-dimensions (aspects) of subjective well-being based on the literature review.

¹⁷ <https://www.corc.uk.net/outcome-experience-measures/the-world-health-organisation-five-well-being-index-who-5/>.

¹⁸ <https://www.hcp.med.harvard.edu/ncs/ftpd/ncs/ftpd/k6/K6+self%20admin-3-05-%20FINAL.pdf>.

— Figure n.6 - Causal links between solutions and subjective well-being aspects based on the literature and on the context analysis



3.3 Healthy lifestyles

The dimension of healthy lifestyles, within the proposed analysis, includes those aspects that are more likely to be influenced by the project specific solutions, namely: perceived physical health, sports practice, eating habits, human-animal interaction, social and cultural habits, leisure and free time

Individual behaviour plays a role in health outcomes and positive changes in individual behaviour can reduce the rates of chronic disease, for example, if an individual quits smoking, his or her risk of developing heart disease is greatly reduced. There are other examples of individual behaviour which impact on health such as diet, physical activity, alcohol, cigarette, and other drug use, hand washing.

Due to the specificity of the IN-HABIT solutions, within the proposed evaluation framework, **sports practice, cultural habits, food, time spent in nature and human-animal bonds** are considered as important aspects of H&W within the dimension “healthy lifestyles”.

According to European Environmental Agency, **natural environments** provide “the basis for good health and well-being” and “space for recreation, relaxation and social interaction.” Regarding the relationship between green space and health “improved air quality, enhanced physical activity, stress reduction and greater social cohesion” are the principal and interacting pathways through which nature or green space

may contribute to health (Hartig et al. 2014). According to EEA (2019), physical activity, engagement with nature and relaxation, and social activities and interactions are also considered as “major pathways to health” (Lachowycz & Jones 2013). There are “strong evidence for restorative psychological effects from interaction with green space or natural environments” (Hartig et al. 2014). Moreover, “studies of green spaces and health have demonstrated stronger evidence for mental health benefits, and for stress reduction, compared with other potential pathways to health” (reviewed by de Vries, 2010; Gascon et al., 2015). Some studies that have explored the relationship between **culture and well-being**, consider culture as a complex idea to define though research exploring its impact on well-being often focus on activities such as theatre and dance, film, visual arts, photography, archives, storytelling, painting, listening to music and museum trips (Browne Gott 2020). Amateurial practice of cultural activities is directly correlated to higher levels of life satisfaction and self esteem. Moreover, cultural professions of all kinds present higher job satisfaction than any other occupation, despite their commonly poor economic performance and frequent precarious nature.

Inequality based on income, gender, disability and age and social exclusion of minorities and fragile citizens (long time unemployed, single mothers, hospital inmates, drug addicts, convicts, etc.) can be overcome at lesser costs and with longer lasting effects than conventional policies thanks to activities and projects based on cultural participation and creativity (Culture Action Europe).¹⁹

Culture and cultural heritage are considered as key identification elements of cities, contributing to inhabitants’ health and well-being, as well as jobs creation, social cohesion and inclusion, environmental regeneration, and place attractiveness. However, there are hardly studies that explore the impact of culture or cultural heritage on people’s health and well-being in urban areas. A review article (Bosone et al., 2021) explores what indicators are currently used in cultural heritage research and practice as impact assessment tools and shows that, while some indicators are available, many circularity aspects are not considered in the current studies on cultural heritage impacts. Other studies emphasise the exclusionary nature of urban health legislation, and of the contested role artists and arts festivals can play in nurturing urban well-being and normalising inequalities (Veal, 2017).

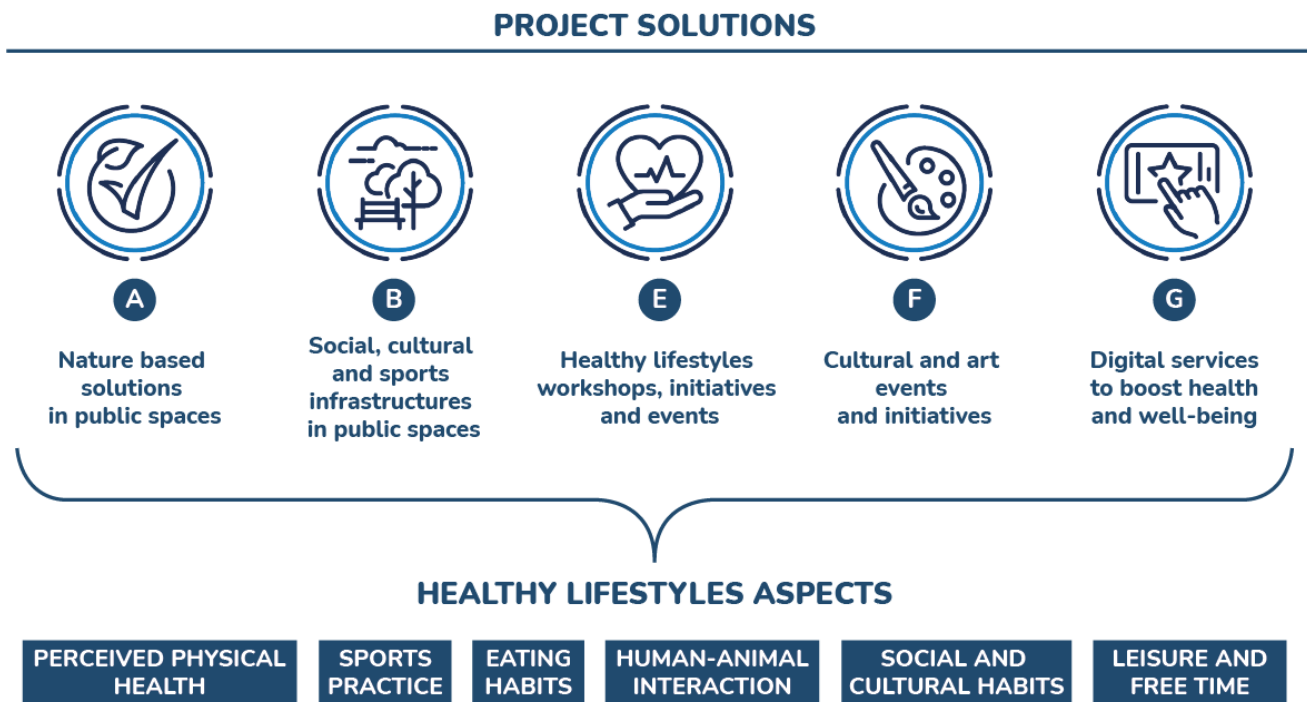
The human-animal relationships can be considered as a healthy behaviour with contributes to people’s well-being. Scientific research (Wood, L., Giles-Corti, B. and Bulsara, M. 2005; Stanley, I. H., Conwell, Y., Bowen, C., & Van Orden, K. A. 2014) has shown that **human-animal interaction** influences blood pressure, heart rate, and hormones correlated with well-being including oxytocin, b-endorphin, prolactin, phenylacetic acid and dopamine, which play a role in regulating mental health. Human-animal interaction also provides people with a broad range of emotional and social support that can promote the ability to adapt and recover from adverse circumstances, and help to reduce stress, providing social support, managing mental illness and social isolation and loneliness, which profoundly affects people’s well-being.

¹⁹https://cultureactioneurope.org/files/2022/11/C4H_Report-1.pdf

There is also a strong relationship between nutrition and health. Researchers exploring the factors and interventions that affect well-being have revealed that **food consumption** can enhance well-being. In particular, there is a consistent correlation between the consumption of fruits and vegetables and well-being. However, it is not only the quantity and quality of the food consumed that influence positive mood and well-being, but also the manner and conditions under which the food is eaten.

Studies have compared “traditional” diets, like the Mediterranean diet and the traditional Japanese diet, to a typical “Western” diet and have shown that the risk of depression is 25% to 35% lower in the case of traditional diets. Scientists account for this difference because traditional diets tend to be high in vegetables, fruits, unprocessed grains, and fish and seafood, and contain only modest amounts of lean meats and dairy. They are also void of processed and refined foods and sugars, which are staples of the “Western” dietary pattern. In addition, many of these unprocessed foods are fermented, and therefore act as natural probiotics.

— Figure n.7 - Causal links between solutions and healthy-lifestyles aspects based on the literature and on the context analysis



4. Methodology

The impact assessment research design is grounded on validated and robust evaluation methods. In particular, it makes use of a blended approach to evaluation, defined as “bricolage” approach, (Nicholls 2009) that is articulated on the appropriate combination of the following types of evaluation:

- the **Theory Based Evaluation** (Weiss, 2007). Based on the EU Commission Impact Evaluation Center’s definition, a theory-based impact evaluation focuses on programme theories, i.e the assumptions of policy makers and stakeholders on the preconditions, mechanism and context for an intervention to work. Theory-based impact evaluations test these assumptions against the observed results following the different steps of the intervention logic and examine other influencing factors. They are thus able to explain why and how results have occurred and to appraise the contribution of the programme and of other factors.

The research design is based on this method, which is widely used in literature and validated (Stame, 2004). In fact, the research aims at assessing and isolating the short to medium terms impacts of the project through the reconstruction of the causal chains (called “value chains”) linking city specific solutions, target groups and expected changes as described in paragraph 4.4.

The definition of the value chains and related assumptions on the expected changes are the result of a participatory work that involved the researchers (transversal and local research partners) and the representatives of local stakeholders in task 7.1, under the guidance of ISIM. These stakeholders were guided to co-define the expected changes that could be realistically produced by the project city-specific solutions from their point of view, considering also the perspective of the groups at risk of discrimination that could be impacted by the VIS in each pilot.

- the strategic and cross-use of qualitative/quantitative procedures of data collection and analysis, called **Mixed Methodology Research** (Amaturo & Punziano, 2016). More specifically, it will use: quantitative methods like surveys (including gamified surveys and mobile experience sampling) and secondary data analysis; qualitative methods like content analysis from storytelling, behavioural games, focus groups and interviews to verify the research questions and discount external factors.
- the **Practical Participatory Evaluation (P-PE)** methodology which is characterized by the stakeholders’ participation in the evaluation process. This participation will increase the evaluation's relevance, ownership, and thus use. According to Bradley Cousins and Whittmore (1998), P-PE has three primary uses or effects: i. instrumental, the provision of support for discrete decisions; ii. conceptual, as in the educational or learning function; and iii. symbolic, the persuasive or political use of evaluation to reaffirm decisions already made or to promote a particular agenda.

More specifically, the proposed assessment plan makes use of the involvement of local inhabitants by applying the Citizen Science Inclusion Mechanism (CSIM), which is described more in detail in the next paragraph. Following the P-PE methodology, the perspective of local communities is embedded in the research from the beginning through the co-design of the IHW Indicators. Additionally, local inhabitants are involved in participatory assessment actions like gaming, storytelling, focus groups, mobile experience sampling. Local observers and members of local NGOs and social groups are involved in the recruitment of participants to the research through the snowball sampling method applied in the baseline survey.

- Finally, the proposed evaluation action is also characterized by an **inclusive approach**, since:
 - GDEI characteristics which may affect the project's impact on health and well-being are included in the research framework and quantitative data are disaggregated accordingly;
 - expected results and IHW Indicators which may be influenced by GDEI characteristics are included in the research framework as GDEI indicators, which are selected with the involvement of the representatives of the groups at risk of discrimination and exclusion (local NGOs in the 4 cities);
 - people at risk of discrimination and exclusion are involved from the beginning in the co-design of the results indicators as well as in the data collection actions;
 - specific attention is paid to those incentives and actions that may ensure an equitable participation of persons at risk of discrimination and exclusion in the research activities, thanks to the use of incentives and the involvement of local observers as linguistic and cultural mediators.

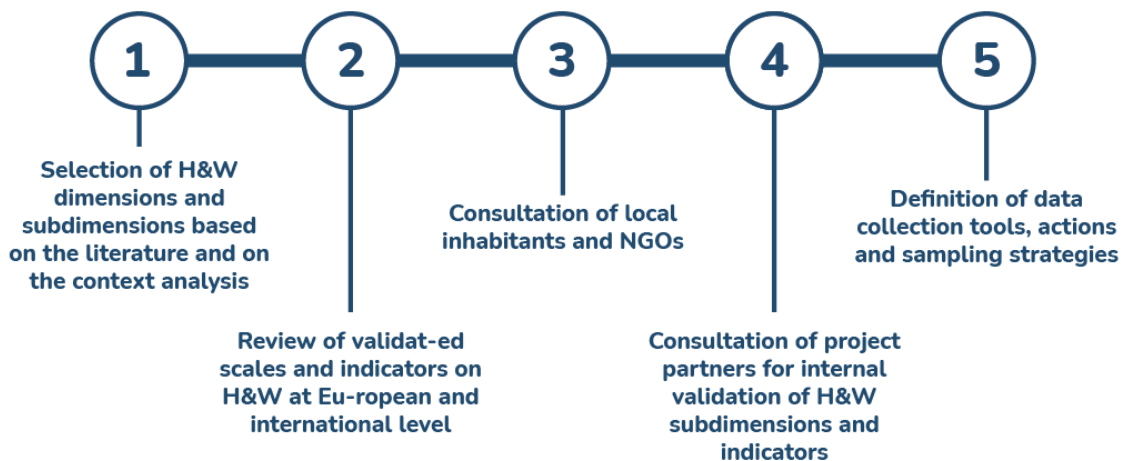
The working method has combined the top-down and the bottom-up perspectives, where the theoretical and empirical assumptions of the researchers have been integrated with the view of the local inhabitants and representatives of local organizations in the 4 pilot cities.

The methodology for the selection of the IHW dimensions, sub-dimensions and indicators was a circular process, which engendered mutual learning from the researchers to the inhabitants and vice-versa. In this process, the results of each phase were used to revise and validate the previous ones and to build new knowledge on the local contexts and expected changes in terms of inclusive health and well-being in each pilot city.

The perspective of people with personal characteristics related to GDEI was considered by involving them in two moments of the process, namely the co-design workshops with inhabitants and the survey addressed to the representatives of GDEI organizations.

The working method followed the **five steps** represented in the following figure and described in the next paragraphs.

1— Figure n.8 – The working method in five steps



4.1. Selection of the H&W dimensions and sub-dimensions

The selection of the H&W dimensions and sub-dimensions of interest (see table 3, section 3) was based on the following sub-tasks:

a. Literature review of well-being studies based on the theoretical framework defined in the previous section. The full literature review and the hypothesis regarding the correspondence between the project VIS and specific aspects (dimensions and sub-dimensions) of H&W based on the literature were presented in section 3.

b. Analysis of the context in the pilot cities, including: the analysis of the project solutions, the identification and analysis of the target groups of these solutions and the psycho-social risk factors associated with the condition of the local communities.

The project VIS are described based on the information provided by local city partners in the DoA of the Grant Agreement and updated within the Deliverables D1.1, 2.1, 3.1 and 4.1 (Cities' Inclusive Transformation Plans).

Based on this analysis, the project VIS have been grouped in 7 categories following the 4 main types of innovations envisaged in the Call: social, cultural, nature based and digital.

The 7 VIS categories identified are:

- A- Nature based solutions in public spaces
- B- Social, cultural and sports infrastructures in public spaces
- C – Mobility and lighting solutions for public spaces
- D- Training and support for skills and business development
- E – Healthy lifestyles workshops, initiatives and events
- F – Cultural and art events and initiatives
- G- Digital services to boost health and well-being

The full analysis of the 4 city contexts, target groups, VIS and psychosocial risk factors of local communities in each pilot city is presented in Annex 2.

4.2 Review of validated scales and indicators on H&W at European and International level

This phase consisted in a review of validated scales and indicators on H&W at European and international level in order to propose those more aligned with the objectives of IN-HABIT and the context and focus of each city.

— Table 4 - Consulted International organizations assessment frameworks on IHW

European/ International organization	Surveys and publications
United Nations Development Programme (UNDP)	“Human development index” 1990/1993 “Sustainable Development Goals” 2015
World Health Organisation (WHO)	WHO-QOL “Measuring the quality of life”, WHO Five Well-being Index (WHO-5)
European Union Funding for Research and Innovation. Horizon 2020	An impact evaluation framework to support planning and evaluation of nature-based solutions projects. An EKLIPSE Expert Working Group report
European Foundation for the Improvement of Living and Working Conditions (EUROFOUND)	“Living conditions, social exclusion and mental well-being” “Survey On Income And Living Condition” “Employment security and employment: A contribution to

	the flexicurity debate” 2008
European Environmental Agency	Healthy environment, healthy lives: how the environment influences health and well-being in Europe, EEA Report No 21/20191994-2019
Eurostat	Final report of the expert group on quality of life indicators 2017 edition European Union Statistics on Income and Living Conditions (EU-SILC) Sustainable development in the European Union Monitoring report on progress towards the SDGs in an EU context – 2019 Edition
Organization for Economic Co-operation and Development (OECD)	Better life initiative – compendium of OECD well-being indicators 2011

At the end of this phase, a first set of **validated indicators on H&W** has been selected and grouped in 4 meta-categories, based on the following criteria:

- a. capacity to reveal and describe those elements of the social, institutional and economic context of the 4 pilot cities which may influence health and well-being and its equitable distributions among social groups (**Context Indicators**)
- b. capacity to detect the differences among social groups and individuals based on personal characteristics which may affect health and well-being and the impact of the solutions (**GDEI indicators**)
- c. capacity to detect the differences among social groups and individuals based on socio-demographic characteristics which may affect health and well-being and the impact of the solutions (**socio-demographic indicators**)
- d. capacity to measure and isolate the changes (both expected and unexpected) which are attributable, in whole or in part, to the visionary and integrated solutions which will be tested in the 4 cities (**Key Impact Indicators**)

This set of indicators has been shared with the city partners (universities and cities) at month 2 and a feedback of their validity, measurability and specificity with respect to the urban context has been collected.

This first set of indicators included the validated indicators and psychometric scales derived from already existing assessment frameworks.

This first set of H&W indicators, as well as the results of the literature review on H&W studies, were used to guide the bottom-up phase of this co-design process which is described in the next paragraph.

4.3 Consultation of local in-habitants and NGOs representatives

This phase consisted in a series of workshops and interviews with the representatives of local target groups (inhabitants belonging to the identified city target groups and NGOs), including people at risk of discrimination and exclusion, with the aim of getting information on the perception of H&W and the expected impacts of the VIS from a bottom-up perspective.

To this aim, a co-design workshop with a group of around 15 inhabitants in each city has been carried (58 people in total), with the aim of discussing the most significant expected changes regarding health and well-being from the inhabitants' perspective.

Local workshops were organized by partners ISIM, UCO, UNIPI, SUA and BSC. Specific workshop guidelines were distributed by ISIM to the partners and a simulation session was carried on line on 28th October 2020 to train local research groups on how to run the discussion.

The city workshops were held on-line in Riga and Lucca, while the face to face modality with small groups or single participants was used in Nitra and Cordoba.

Participants were guided through a group discussion by means on the following discussion points:

- identification of the most relevant aspects of health and well-being
- identification of the most significant changes that IN-HABIT solutions could produce on local people's health and well-being (in general and for specific groups at risk of discrimination)
- effects of the Covid-19 pandemic on their health and well-being

Local workshops were participated by a variety of inhabitants, both men and women, also including people who identified themselves as members of groups at risk of discrimination. However, in order to ensure a wider consultation and inclusion of the perspective of such groups, a parallel semi-structured questionnaire was distributed by local community activators between months 5 and 7 to the representatives of local NGOs active in the field of GDEI policies. The results of these workshops were used with a twofold aim: to validate selected IHW dimension and expected changes from the perspective of groups at risk of discrimination and to select GDEI indicators.

However, city partners encountered difficulties in involving people at risk of discrimination and exclusion by ethnicity, disabilities and sexual orientation within the co-design workshops, or at least people who identified themselves as members of these groups.

For this reason a second consultation action was run by ISIM with the help of local community activators in each city. A brief survey dedicated to the representatives of those NGOs advocating/protecting people at risk of discrimination and exclusion at city level has been distributed in months 5-7. In Lucca, the questionnaire was also followed by a telephone interview, with the aim of investigating further some aspects raised by the questionnaire and collecting further qualitative data.

The questionnaire (Annex 7) 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.

The total number 37 questionnaires were completed, of which:

- 6 from Lucca representing/working with persons with disabilities (2 organizations), elderly (1 organization), women (1 organization), LGBTIQ+ (1 organization), Roma (1 organization).
- 13 from Cordoba representing/working with ethnic minorities (5 organizations); people on risk of social exclusion (3 organizations), young people at risk of social exclusion (1 organization), religious minorities (1 organization), minors of school age (1 organization), elderly (1 organization), families and children (1 organization).
- 7 from Riga, representing/working with LGBTIQ+ people (2 organizations), women (1 organization), ethnic or national minorities (1 organization), elderly (2 organizations), drug addicts (1 organization)
- 11 from Nitra, representing/working with drug users, sex workers, homeless people (1 organization), women (2 organizations), homeless people (1 organization), Elderly (1 organization), Ethnic or national minorities (1 organization), people addicted to addictive substances including alcohol, gambling and their family members (1 organization), persons with disabilities (1 organization), Asylum seekers (1 organization), LGBTIQ+ people (2 organizations).

Furthermore, in Lucca, 5 representatives of NGOs representing/working with elderly, persons with disabilities, Roma, LGBT and women were also contacted and involved by ISIM in a phone semi-structured interview with the aim of exploring more in-depth the perspective of these key witnesses.

The results of this inhabitants' consultation in each city are described in Annex 3.

4.4 Consultation of project partners for internal validation of both sub-dimensions and indicators

During this phase, city partners were asked to participate in the empirical definition of the city specific "value chains" describing "solutions, target groups and expected changes".

This exercise was run on line by filling a specific template with the aim of identifying and testing the logical interrelations between the VIS (grouped by typology), the changes that these solutions may realistically produce on people's health and well-being, following the H&W dimensions and sub-dimensions already identified.

The validated methodology that sustains this approach is the Theory Based Evaluation (Weiss, 2007).

The findings from the consultation of city partners were analysed and complemented by the literature review and the perspective of the local inhabitants in order to formulate a set of city-specific **research assumptions** regarding the expected changes on H&W that could be attributable (at least in part) to the project solutions in each intervention group.

These expected changes and related assumptions reflect the sub-dimensions of H&W that were identified by in the previous steps, that also guided the consultation of both local inhabitants and city partners.

Research assumptions on the expected changes on IHW in Cordoba
<ul style="list-style-type: none"> • Assumption n.1 the proposed VIS will improve the level of social cohesion
<ul style="list-style-type: none"> • Assumption n.2 the proposed VIS will increase the perception of security
<ul style="list-style-type: none"> • Assumption n.3 the proposed VIS will strengthen social inclusion
<ul style="list-style-type: none"> • Assumption n.4 the proposed VIS will improve equality in the access to culture and leisure
<ul style="list-style-type: none"> • Assumption n.5 the proposed VIS will improve the spatial well-being
<ul style="list-style-type: none"> • Assumption n.6 the proposed VIS will affect psychological well-being, mental distress and life satisfaction
<ul style="list-style-type: none"> • Assumption n.7 the proposed VIS will improve the practice of sports in public green areas and the consumption of fruit and vegetables
<ul style="list-style-type: none"> • Assumption n.8 the proposed VIS will enhance cultural participation and culture-related well-being
<ul style="list-style-type: none"> • Assumption n.9 the proposed VIS will improve the quality of free time and leisure
<ul style="list-style-type: none"> • Assumption n.10 the proposed VIS will improve employability and satisfaction with one's living environment

Research assumptions on the expected changes on IHW in Riga
<ul style="list-style-type: none"> • Assumption n.1 the proposed VIS will increase the perception of security in the intervention areas
<ul style="list-style-type: none"> • Assumption n.2 the proposed VIS will strengthen social inclusion of the target beneficiaries
<ul style="list-style-type: none"> • Assumption n.3 the proposed VIS will improve the spatial well-being of the target beneficiaries in the intervention areas
<ul style="list-style-type: none"> • Assumption n.4 the proposed VIS will affect psychological well-being, mental distress and life satisfaction
<ul style="list-style-type: none"> • Assumption n.5 the proposed VIS will improve healthy habits
<ul style="list-style-type: none"> • Assumption n.6 the proposed VIS will enhance cultural participation and engagement
<ul style="list-style-type: none"> • Assumption n.7 the proposed VIS will improve the quality of free time and leisure
<ul style="list-style-type: none"> • Assumption n.8 The proposed VIS will improve employability and satisfaction with one's living environment of target beneficiaries

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 affect psychological well-being, mental distress 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

Research assumptions on the expected changes on IHW in Nitra

- **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 in the access to culture and leisure
- **Assumption n.5** the proposed VIS will improve the spatial well-being of the target beneficiaries in the intervention area
- **Assumption n.6** the proposed VIS will affect psychological well-being, mental distress and life satisfaction
- **Assumption n.7** the proposed VIS will improve health determinants
- **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 and leisure
- **Assumption n.10** the proposed VIS will improve the employability of target beneficiaries

After the definition of the city specific research assumptions, the lexical contents resulted from the co-design workshops and interviews of local inhabitants were combined with the results of the consultations of the city partners.

The expected changes emerging from such contents were then operationalized and empirically defined as **IHW Indicators**, by combining the perspective of the project partners and the perspective of the local inhabitants.

This process brought to the definition of the IN-HABIT set of IHW indicators (Annex 1).

The definition of IHW indicators was guided by the following methodological objectives:

- comparability: selected indicators should be able to measure those aspects of health and well-being which are considered by the main European and International statistics and research framework (OECD, WHO, Eurostat, Eurofound, European Commission, UNDP/SDGs) in order to ensure comparability and to fill the gaps in terms of data availability for small and medium sized cities
- specificity: selected indicators are meaningful and relevant to the specific local context of the 4 pilot cities, since they refer to existing and measurable characteristics of the local population, project solutions, socio-economic and institutional context, also in light of the Covid-19 pandemic. For this reason many validated indicators have been borrowed from international standards and adapted to the project, while other new and complementary indicators have been co-designed. A description of the assessment framework of reference for each indicator is included in Annex 1, which also highlights the IN-HABIT new indicators.
- inclusiveness and citizen science use: the subjective indicators consider both the researcher's and the inhabitants' assumptions on expected changes affecting health and well-being, with specific regard to the perspective of those people who identified themselves as representatives of the groups with GDEI personal characteristics at local level.

The selected H&W indicators include both:

- **validated indicators** from OECD, Eurostat, WHO5, Eurofound, K6 scale that were not changed in their formulation with respect to the validated version already used in literature
- **validated indicators** from OECD, Eurostat and Eurofound whose formulation was **adapted** to be more suitable to the local contexts and to the scale of the research (neighbourhood and city level)
- **new and complementary indicators**, as required by the topic of the Call, that could not be traced back to those already existing and validated, but which covered new aspects of well-being and possible expected changes as perceived by the inhabitants of the cities involved, including groups at risk of discrimination.

The indicators on social well-being, economic well-being, healthy lifestyles and spatial-environmental well-being present some differences and specificities for each pilot city. These city specific indicators are presented in Annex 4.

On the other hand, the indicators to measure the effects of Covid 19 at the baseline and those selected to measure subjective well-being are the same for all the cities. These common indicators are presented in Annex 5.

The proposed indicators of subjective well-being have been selected by UREAD based on robustly validated psychometric scales that have been used extensively in past large scale project designs that have included cross-country comparisons in diverse communities namely:

- the WHO-5 scale²⁰ (indicators on positive emotions)
- the Kessler Psychological Distress Scale (K6)²¹ (indicators on psychological distress)
- Life Satisfaction scale (taken from Ryff's research, but also employed in major social surveys ESS, ONS etc.)

Introduction of new psycho-social metrics for the next (ongoing and ex-post) phases of the impact assessment

It will be of benefit to the study to include some additional measures of subjective well-being in the next round of testing to supplement the core measures of psychological well-being (WHO5) and mental distress (Kessler 6) that we employed as baseline in the first wave.

Establishing general well-being and mental health using established well-validated scales was essential at baseline, but in a second wave it makes sense to extend this to align findings more closely to the work going on in each city.

It has been suggested by the project reviewer that IN-HABIT employs some novel scales in the second wave of testing.

The first is Basso's (2022) scale "the behavioral transformative impulse for better planetary health" and the second is Napoli et al. (2019) "community future orientation" scale. However neither of the scales has been extensively validated and tested in large cross-cultural studies, and neither reflects a focus on the specific activities taking place in each of our city partners.

What partner UREAD proposes instead is to assess well-being more specifically linked to the facets of the VIS employed in each city using existing well-validated scales.

Measures such as the **UCL Museum Well-being scales** have the advantage of both being based on well-validated measures, and being adapted to examine the impact of cultural activities on psychological well-being and mental health (Thompson & Chatterjee 2022). Similar measures can also be found of time spent in nature (**Inclusion of nature in self scale** (Schultz 2002), interactions with animals (**Human-Animal**

²⁰ <https://www.corc.uk.net/outcome-experience-measures/the-world-health-organisation-five-well-being-index-who-5/>.

²¹ <https://www.hcp.med.harvard.edu/ncs/ftpd/ncs/ftpd/k6/K6+self%20admin-3-05-%20FINAL.pdf>.

Interaction Scale; Fournier et al. 2016), sports and exercise (**Basic psychological needs in exercise scale**; Vlachopoulos et al. 2006) and positive relationships with food (**Positive eating scale**; Sproesser et al. 2018) for example. The aim would be to add one or two scales for each city that can be closely linked to their VIS – decisions on exactly which scales to include will be decided in discussion with each city partner during the ongoing evaluation phases (year 3).

Finally, in the second wave of testing (ex-post city surveys) it will be key to assess engagement with the VIS in each city. We would expect, if these interventions have had a measureable impact on psychological well-being and mental health, then the benefits might be more obvious in those who have engaged the most with the changes being made. UREAD will work with the cities between now and the next time of testing to establish the best way of addressing engagement with their specific portfolios of VIS.

4.5 Data collection tools, actions and sampling strategies

4.5.1 General overview of the evaluation process

Results produced on H&W of target beneficiaries are measured through both secondary and primary data collection before, during and after the implementation of the solutions.

The evaluation process includes three steps of quali-quantitative data collection and analysis:

a. STEP 1: ex- ante evaluation (task 7.3 Baseline study on IHW(M7 - M18))

The ex-ante quantitative evaluation includes:

- the collection and analysis of secondary data at local level from available statistics and administrative data.

These are collected by partners UCO; CORDOBA, UNIPI, LUCCA, BSC, RPR, SUA, NITRA and analysed by ISIM and UREAD.

- The data collection through surveys. A general survey on IHW is administered in each city. At least 300 structured questionnaires are distributed on line and in person by local community activators, with the involvement of city partners AVUE, KQ, HYDE, LCREA. Data on subjective well-being (including psychological well-being, mental distress and life satisfaction) are analysed by project partner UREAD, while data on social, economic, spatial-environmental well-being and healthy lifestyles are analysed by project partner ISIM. The distribution of the surveys is supported by the local community activators with the help of local organizations and institutions working in the selected city areas. Control groups are used to compare ex-ante aspects of H&W on both people living/attending the intervention areas and people not living/attending such areas.

The ex-ante qualitative evaluation includes:

- focus groups and/or individual interviews (online and/or in persons depending on the local conditions). The focus groups/interviews are run by local community activators in each city with the guidance of ISIM. Around 5-10 participants per city are selected among those who are expected to live/attend the intervention areas for the whole duration of the project. The idea is to involve the same group of people over time (longitudinal study), ensuring GDEI perspective..
- content analysis from storytelling (both visual and textual contents) to explore changes on health and well-being of local inhabitants through narrative patterns. Around 5 stories per city are collected by local community activators in the local language and analysed by ISIM.

b. STEP 2: ongoing evaluation (Task 7.4 Ongoing IHW impact assessment, M19 – M48)

An interim assessment on socio-economic well-being and healthy lifestyles is run by ISIM through quantitative and qualitative research tools in the 4 pilot cities.

The ongoing quantitative evaluation will include the following actions:

- short surveys on specific target groups: key local events (cultural events, space openings, gatherings ect.), project activities and public spaces are selected in order to distribute at least 100 questionnaires in each city (both on line and in person) in year 2, 3 and 4. The distribution of the survey is supported by the local community activators with the help of local organizations and institutions working in the selected city areas (local observers).
- gamified surveys and Mobile Experience Sampling by means of “missions” delivered through the IN-HABITAPP developed in WP8.

The ongoing qualitative evaluation includes the following actions:

- focus groups: around 5-10 participants per city are selected among those who are expected to live/attend the intervention areas for the whole duration of the project. The idea is to involve the same group of people over time (longitudinal study), ensuring GDEI perspective.
- analysis of the results of behavioural games (“one day in the shoes of” - run by UREAD in task 6.3) to assess the impact of deployed solutions on the “special users” with multiple diversity profiles, using a GDEI perspective;
- content analysis from storytelling (both visual and textual contents) to explore changes on health and well-being of local inhabitants through narrative patterns. Around 5 stories per city are collected by local community activators in the local language and analysed by ISIM.

c. STEP 3: ex-post evaluation (Task 7.5 Ex-post IHW impact assessment, M49 – M60)

An ex-post study is run in each city by ISIM and UREAD two year after the implementation of the VIS in each pilot city.

The ex-post quantitative evaluation includes:

- the collection and analysis of secondary data at local level from available statistics and administrative data. These data will be collected by partners UCO; CORDOBA, UNIPI, LUCCA, BSC, RPR, SUA, NITRA and analysed by ISIM and UREAD.
- the data collection through surveys. A general survey on IHW will be administered in each city. At least 300 structured questionnaires will be distributed on line and in person by local community activators, with the involvement of city partners AVUE, KQ, HYDE, LCREA. Data on subjective well-being (including psychological well-being, mental distress and life satisfaction) are analysed by project partner UREAD, while data on social, economic, spatial-environmental well-being and healthy lifestyles are analysed by project partner ISIM. The distribution of the survey will be supported by the local community activators with the help of local organizations and institutions working in the selected city areas (local observers).

Control groups are used in the ex-post city surveys to compare the differences over time (pre-post intervention) on the selected H&W aspects between two groups of participants (people living or attending the intervention areas and people not living nor attending such areas)

The ex-post qualitative research includes:

- focus groups: around 5-10 participants per are selected among those who are expected to live/attend the intervention areas for the whole duration of the project. The idea is to involve the same group of people over time (longitudinal study), ensuring GDEI perspective.
- content analysis from storytelling (both visual and textual contents) to explore changes on health and well-being of local inhabitants through narrative patterns. Around 5 stories per city are collected by local community activators in the local language and analysed by Isimpact.

— Table 5 - Evaluation steps and tools: general overview

Year	2021	2022	2023	2024	2025
Task	Ex ante evaluation	Ongoing evaluation	Ongoing evaluation	Ongoing evaluation	Ex post evaluation
quantitative research	-Secondary data analysis -General Survey on IHW (1 per city)	Short surveys on specific target groups (1 per city)	Short surveys on specific target groups (1 per city) Gamified surveys and mobile experience sampling (APP)	Short surveys on specific target groups (1 per city) Gamified surveys and mobile experience sampling (APP)	-Secondary data analysis -General Survey on IHW (1 per city)
qualitative research	-Focus groups (1 per city) or interviews - storytelling (5/6 per city)	-Focus groups (1 per city) or interviews storytelling (5/6 per city)	-Focus groups (1 per city) or interviews Behavioural games (with UREAD) Storytelling(5/6 per city)	-Focus groups (1 per city) or interviews storytelling (5/6 per city)	-Focus groups (1 per city) or interviews storytelling (5/6 per city)

4.5.2 Quantitative research tools: description and rationale of their use

Within the proposed assessment framework, quantitative research tools include surveys, gamified surveys, mobile experience sampling and secondary data collection.

A counterfactual method (Bell et al. 1999; Lechner 1999; Blundell & Costa Dias 2008; Khandker et al. 2010) is applied in order to strengthening the validity of the results: in each of the 4 pilot cities, ex-ante and ex-post data are collected and analysed both on the intervention groups and on the control groups. The comparisons of the results among the two groups, before and after the implementation of the solutions, allows to isolate the changes attributable to the IN-HABIT solutions and discount external factors.

Respondents belonging to the control groups have been identified through the setting of specific filter questions (Q2 and Q4 of the baseline surveys <https://www.inhabit-h2020.eu/city-survey-on-health-and-well-being/>) that allow to reconstruct information on the area of residence of the respondents as well as on their frequency of use of the intervention group.

Within the overall framework, the design of the quantitative evaluation aims at estimating the direction and magnitude of the impact the IN-Habit solutions had on the communities engaged.

The survey has operationalised a diverse set of outcome indicators – outlined in the approved evaluation plan. These indicators and – if warranted by the collected data – their aggregation in synthetic indices capture the main project goals and are to be considered the primary endpoints of the quantitative analysis. Beyond using the survey data to describe the variation in outcomes and context among the respondents – over cities, time, and socio-demographic groups – IN-Habit will attempt a quantitative estimation of its impact on the communities reached by the project.

This goal will be pursued leveraging two fundamental comparisons that the current design allows in each city separately: (a) intervention group vs control group and (b) interviews collected before the intervention vs interviews collected after the intervention.

By comparing the average difference over time among respondents from the intervention area to the average difference over time among respondents in the control group the IN-Habit will be able to quantitatively characterize its impact.

Surveys

The primary data collection will make use of two types of surveys:

- the general survey on health and socio-economic well-being, which will be run at city scale twice during the lifetime of the project (ex-ante and ex-post).
- the surveys on specific target groups, which will be distributed to the participants of key project events or activities during the ongoing assessment (year 2, 3 and 4).

Data will be collected through an on-line form, using Microsoft Forms, that will allow the collection of responses while ensuring the anonymity of the respondents and the collection of data matrices that will then be subjected to statistical analysis exclusively in aggregate form for evaluation purposes.

The distribution strategies for the baseline city surveys on IHW have been defined by LCAs following the methodological guidelines provided by ISIM (see Annex 3 to D7.3).

The general objectives for the distribution strategies were the following:

- to reach adults (age 18+) who are resident in the pilot cities
- to reach respondents belonging to the city target groups, as defined in the guidelines for LCAs
- to reach at least 150 respondents who live or who attend in a relevant way (at least 4 hours a week) the intervention group (experimental group) and at least 150 respondents who do not live nor attend such areas (control group)

Given these common objectives, each local research team could adopt specific distribution strategies by adapting the general guidelines to the specificities of the local context and target groups. LCAs could therefore decide to focus on one or more of the following distribution modalities:

- **on-line modality:** a web link is disseminated through the project website and social networks (Instagram, Facebook, LinkedIn, Twitter) and further shared through local partner's profiles, targeting local groups/pages and organizations' profiles on social networks. Community activators and project partners (BOT, local partners) support the dissemination of the link by contacting the relevant online pages and groups, as well as sending e-mails and messages on chatrooms.
- **In paper mode with subsequent recording of responses:** in this case, the community activators distribute the paper forms of the survey and, only later, they take care of recording the answers (including the consent form part). This modality helps reaching those target groups who may have difficulties with accessing and/or using digital technologies, and implied the active involvement of local observers and organized groups to reach the participants and arrange the distribution and collection. This modality also helps spreading the survey to the specific target groups and city areas in a short time, by reaching for example the community of migrant workers in Nitra through their peers.
- **Interview mode with immediate recording of responses:** the survey is administered directly by the community activator or by the local observers through a face-to-face interview. In this case, the recording of responses (including the consent form part) takes place simultaneously, via digital support. This modality helps involving inhabitants with low literacy level, elderly or people with low linguistic and/or digital skills. It also helps spreading the survey to the specific target groups and city areas in a short time.

Rationale for the use of surveys

The design for the general pre-post survey is aimed at the identification of the impact of the IN-HABIT solutions by combining two fundamental comparisons allowed by the current design: (a) intervention group vs a control group and (b) interviews before the intervention took place vs interviews after the

intervention. The project quantitative impacts will be assessed by comparing the average difference over time among respondents from the intervention area to the average difference among respondents in the control group.

The general survey on IHW (ex-ante and ex-post) will include questions aimed at detecting the values of the IHW Indicators, considered valid for all the territorial contexts of the project as well as additional ad hoc questions for each city on the basis of local evaluation objectives.

The general survey will make it possible to grasp the correlations at the city level of given personal characteristics (being part of a minority, for example) with the variables considered dependent (indicators of well-being) in order to validate the starting hypotheses, measure the effects for individual targets and suggest interventions to improve project activities.

Limitations and constraints

It is important to stress that the design anticipated above is best suited to capture (a) the differences that can be attributed to the IN-Habit project (b) within each city. For example, projecting levels of the outcome and context indicators to the city population would require information not available to the project, or assumptions that are not likely to be met. Comparing levels across cities would face similar challenges, caused by the structural differences in the four cities and the differences introduced by local management of the fieldwork.

Meta-analysis of impact across cities, outcome indicators, and subgroups

Fielding IN-HABIT in four different cities, all embedded in different cultural and socio-economic backgrounds, is a key opportunity to validate the project activities and their key logical underpinnings.

Comparison across cities can still be performed based on the design adopted and stratification.

The IN-HABIT evaluation team will compare the impact estimates obtained from the analysis in each city employing meta-analytic techniques (Borenstein, Hedges, Higgins & Rothstein 2021; Cooper, Hedges & Valentine 2019). Impact estimates would be comparable quantities that meta-analytical techniques are ideally suited to combine across the four different cities.

A first comparison across city was performed during the baseline study and presented in chapter 6 of D7.3 based on the set of context indicators to compare the effects of Covid 19 pandemic on the lifestyles of local inhabitants in the 4 cities.

In addition, as the IN-HABIT project has access to the full micro-level dataset, the meta-analytical approach can be extended to cumulatively compare impact estimates not only across cities but also on (a) different outcome indicators and (b) different sub-groups (subgroup numerosity allowing).

The benefit of this approach is double, both synthetic and analytic. Combining the impact estimates obtained in the four cities will cumulate to a considerable sample size that allows greater confidence in the estimated direction and magnitude of the project's impact.

Focusing on the variation of the impact across cities will help assessing its variability in real-world contexts, an essential element to form an expectation on what the activities could achieve if rolled-out to other European cities.

Sampling method for the general surveys

The general survey will use a non-probability sampling, where units are selected based on the subjective judgement of the researcher rather than on a random selection.

More specifically, the surveys will make use of a combination of two non-probability sampling methods, in particular:

- self-selection sampling, which is useful since we want to allow people to choose to take part in our impact assessment on their own accord. To this aim we will advertise the survey through the project website and social network, inviting all the people aged >18 and living in the 4 cities to participate in the survey
- snowball sampling, where research participants are asked to assist researchers in identifying other potential participants among the target groups.

For the baseline city survey, the recruitment of two stratified, non-probabilistic samples in each city was adopted to ensure both (a) an adequate number of respondents in each city for each of the two fundamental comparisons described above and (b) to ensure that the saturation of theoretically relevant dimensions to the project – age, gender, target group membership – could be achieved by interviewing a set minimum number in each stratum.

The distribution strategy for the baseline city surveys on IHW was defined by LCAs following the methodological guidelines provided by ISIM (see D7.3 Annex 3). These guidelines defined the objectives of the distribution strategies of the survey in each city and the optimal number and type of participants as better explained in D7.3.

Regarding the optimal types of participants, they reflected the city specific target groups identified by local research partners following the selection criteria specified above. For this reason the distribution strategies agreed with the local community activators were aimed at reaching adults (18+) residents in the pilot cities by focusing on those belonging to the city specific target groups (including the GDEI groups). The recruitment adopted in the city surveys ensured that all the target groups of the VIS, as identified in the co-design phase, would have a chance to be represented in the study. This implies a qualitative and theoretical, rather than probabilistic, representativeness.

Regarding the optimal number of participants, the distribution strategy of the survey aimed at reaching least 150 respondents living or attending in a relevant way (at least 4 hours a week) the intervention areas (experimental group) and at least 150 respondents who do not live nor attend such areas (control group).

Minimum thresholds for the participation of each target group were agreed among ISIM and Local Community Activators during the training sessions and in the Guidelines for carrying the baseline study in WP7 (Annex 3). In particular it was agreed to involve at least 20 participants belonging to each city target group. These thresholds represented a reference point for the recruitment of the participants to the study, although they could not be numerically representative nor binding due to the lack of data on the composition of the population of reference.

The use of these quota and the snowball recruitment of the participants by other participants belonging to the target groups allowed to include a diverse pool of subjects to capture enough “variation” in respondents’ characteristics.

In order to engender the “snowball effect” and support the distribution of the survey, LCAs could identify a first group of “gatekeepers” among the members of the IN-HUBS, namely local observers and members of organized groups who represented or could be in contact with the target groups. The identification of the gatekeepers took into account the necessity to involve both the intervention and the control group in each pilot city.

Gatekeepers were reached by the LCAs through direct personal contacts (e-mail, face to face, phone contact, social media), only after having received their informed consent regarding participation in the research and use of personal data. Additional sample units (respondents) were engaged with the help of the gatekeepers, who (i) further spread the link of the survey or the paper questionnaire to their primary contacts and/or (ii) provided local community activators with the contacts of other inhabitants and organizations belonging to the target groups. Personal contacts were collected by local community activators only after the informed consent of the interested persons.

Rationale for the choice of the sampling method

The choice of the sampling method was guided by the following necessities:

- the need of including respondents belonging to the city specific target groups and especially from the groups at risk of discrimination and exclusion: women, people aged over 65, ethnic minorities, religious minorities, people with disabilities, LGBTQI+ people.
- the need of including respondents who live or who attend in a relevant way (at least 4 hours a week) the intervention areas (experimental group) and respondents who do not live nor attend such areas (control group).

The choice of a representative sample of the population poses precise limits insofar as classical sampling techniques require, for the definition of a sample size, an estimate of the characteristics of the variables under investigation, usually obtained through pilot studies (Cochran, 2007; Conti & Marella, 2012), previous surveys or proxies of the variables of interest.

The choice of a non-probability sample was made to face the following limitations concerned with both the four city contexts and the evaluation objectives:

- due to the high number of variables under investigations (personal and socio-demographic characteristics), the estimation of the composition of the population based on multiple variables was not possible due to the lack of data at city level regarding the composition by ethnicity, religion, sexual orientation, country of birth ect.
- the estimation of the composition of the population considering all the variables of interest is excessively expensive and time-consuming when compared to the possible advantages.
- it was also considered that even probability sampling could produce biases for the purposes of this research, since it may produce an over-representation of people who, although statistically representative, they are not member of the target groups of interest.
- additionally, the main objective of the proposed study is to assess the type of changes affecting IHW of the target beneficiaries of IN-HABIT solutions. Therefore, generalizations are not the main research goal or the impact assessment.

The choice of the snowball sampling as a particular type of non probability sample, is justified for at least three reasons:

- it is helpful to reduce the biases deriving from the self-selection sampling (for example only people interested in the project or members of the partner organizations may decide to answer)
- it helps reaching the target beneficiaries of the VIS in each city
- it is helpful to involve the groups who are hidden or difficult to reach because they are not familiar with the digital technologies, because they are exposed to discrimination and stigma, because they are not involved in participatory processes. In this case, the personal bonds of trust among the local activators and the participants are essential.

Non-probability samples represent a valid sampling solution widely used in scientific literature (Stephenson, 1979; Roll & Cantrill, 1972; Brislin, 1990), included in the context of the H2020 project Re.Cri.RE suggested as reference model by the evaluators (using snowball sampling) and by the sister project VAR-CITIES (using quota sampling).

The snowball sampling used in the baseline city surveys ensured a **qualitative representativeness**, rather than quantitative (Marradi et al. 2010), in a way that all the target groups of the VIS, as identified in the co-design phase, were represented in the study.

The stabilization of the sample and the comparisons of interest

A stabilization of the sample will be possible during the ex-post evaluation.

The final analysis of survey data – once both surveys have been fielded in each city – will take this into account by employing techniques that stabilize the resulting sample to (a) identify differences that can be attributed to the project's impact and (b) assess the credibility of the results obtained and the risk of bias. The possibility to correct for the bias introduced by the self-selection of respondents into the studies will rely on the set of diverse and theoretically-relevant context indicators included in the survey, which will be used to make the four key groups within each city – pre- vs -post times control vs intervention – more comparable.

To this end the current design allows the IN-HABIT project to employ at least three tools, depending on the specific task at hand: post-stratification weighting (Lumley 2011), inverse probability of treatment weighting and sensitivity analysis (Austin & Stuart 2015; Shen, Li & Were 2011).

Gamified Assessment and Mobile Experience Sampling

The INHABIT-APP developed in WP8 by partner BOT will be used to collect data provided by the users (local inhabitants) on a voluntary basis.

Local citizen will use the app on mobile devices (smartphones) in a way that they can be geolocated - with their informed consent - and receive prompts asking them to answer short surveys or provide other data (i.e pictures) in relation to their experience in the city space.

Two main data collection tools will be deployed through the APP:

- Mobile Experience Sampling Method (MESM), which implies the collection of data several times during the day of the users in relation to their experience of the urban space;
- Gamified sampling, which implies a mission or a challenge for the user who is asked to provide data and accomplish a task in exchange for a reward.

The two data collection tools can be combined (mobile experience can be gamified) and both imply the geolocation of the position of the user in the urban space, the will of the user to receive push notification on their smartphone and the active collaboration of the user in participating in the mission or survey

Rationale for the use of gamified surveys

Gamification has been proposed to make online surveys more pleasant to fill and, consequently to improve the quality of survey results. As a potential benefit, gamification provides motivational offers that produce psychological (e.g., user experience, emotion, fun) and behavioural (e.g., participation, performance) outcomes.

In case of “standard” on line surveys, the environment is confined to a computer screen and the stimulus consists of the visual cues available to individuals as they progress from the beginning of a survey to the end. When a survey is gamified, an individual is exposed to different cues consisting of game elements.

There is a whole range of benefits gamification can bring:

- increases target retention. Using survey gamification makes the user experience more enjoyable, works as a powerful tool for engaging them
- increases target acquisition through word of mouth and social sharing
- increases IN-HABIT project awareness. It keeps users interested in the project by ensuring positive app-experience, improves app and brand acceptance in general
- makes gathering of accurate user-data easier. It is easier to engage and reach a large number of users.

Gamified surveys and MESM will be deployed starting from month 22 as a part of the on-going assessment, following the evolution of the functionalities of the IN-HABITAPP, whose full version's delivery is planned at month 36.

Analysis of secondary data

Among the quantitative research action within the proposed plan, ISIM runs 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 is carried 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 (i) better interpretation of the IN-HABIT results and (ii) discounting external factors who may have contributed to the changes affecting inhabitants' IHW.

Secondary data are collected by city partners and analysed by ISIM. In order to support city partners in the collection of secondary data for the baseline study, ISIM and UREAD have provided them with guidance and support by delivering:

- a. a list of indicators for IHW specifically designed for the collection of secondary data (see Annex 1 sheet 2)
- b. written guidelines for local public authorities on how to collect secondary data, also considering GDEI data. For each dimension/indicator, the production of data disaggregated by age, gender, and - where available - other GDEI personal characteristics has been required
- c. organizing meetings and informative sessions to offer support and assistance to the city partners in case of need.

4.5.3 Qualitative research tools: description and rationale of their use

The qualitative component of the evaluation will be used to complement quantitative data with a deeper insight in the changes occurred over time on a stable group of participants belonging to the intervention group (direct beneficiaries of the solutions and people much interested and involved in the project), also considering diversity in terms of personal characteristics and GDEI factors.

The qualitative study will allow to reconstruct the causality links between the observed changes on H&W and the types of integrated and visionary solutions tested in each pilot city, to detect the reasons for these changes, to reveal unexpected changes and to help discounting some external factors that may have contributed to the changes.

The analysis of the data from qualitative research (focus groups, storytelling and behavioural games) will be based on the hermeneutic analysis technique (Montesperelli, 1998).

The leximometric textual analysis, as suggested by the evaluator, could be an interesting tool to get quantitative data from qualitative contents but we think that it presents some limitations and difficulties in this case:

- it would not be applicable at project level but only at city level and it would not allow for comparison among cities, since this type of analysis must be take into account the local cultural and linguistic background of the local communities and city specific target groups (i.e. ethnic minorities);
- it would require the acquisition of specific software and specific professional profiles (4 experts at local level) running the analysis in the same language of the participants, while the hermeneutic analysis is centrally carried by transversal partners based on the English translations of the original contents;
- these additional efforts and investments are not justified by the amount of qualitative data that we plan to collect, which correspond to one-two focus groups and 5-10 interviews per city each year.

We decided to use the hermeneutic analysis since it allows to get reliable results from the qualitative data with an adequate cost-benefit ratio, also considering the linguistic barriers and the amount of data to be analysed.

To ensure reliability, we have employed local community activators as cultural mediators and translators, in order to better contextualize the meanings expressed by the participants and including the diversity of their cultural backgrounds.

Focus groups

Focus groups are conducted once a year from year 1 using the methodology of "case studies" that requires the use of qualitative social research techniques aimed at investigating, through the observation of "privileged witnesses", the changes generated by the project on specific groups of inhabitants. The formalization of the case study research strategy is due to Robert Yin (2003). Its objective is the study of restricted units of analysis, such as single individuals, small groups, communities, called "cases".

The case study evaluation through focus groups is planned considering the possibility of involve local observers as the local case, which should be as much as possible a **stable group across the evaluation stages** (ex-ante, ongoing, ex-post).

Specifically, focus groups should consist of 5/10 people and the community activator should ensure heterogeneity of participants in order to balance different points of view as well as GDEI characteristics. Cognitive maps for the realization of the focus groups are provided by ISIM to the local community activators, in a way that they can follow the map in a random order and adherent to the space of interaction that will be recreated during the discussion.

Rationale for the use of focus groups

The focus group is a technique used in a large number of application fields as explained by its name the focus is mainly used to describe the nature and main dimensions of a single issue or a limited number of issues and concepts however related. The focus group is a small group whose members respond to a set of open questions by a moderator or facilitator and is characterized by free interaction to promote the construction of common sense.

The management of the group is done by the facilitator (the local community activators in this case), who follows a set of topics that stimulates the group to reflect in depth on the proposed topic and actually encouraging direct comparison of different points of view.

The focus groups will be used as an investigative tool especially in the ongoing evaluation phase in order to deepen in particular some indicators that concern the sub dimensions of well-being by virtue of the complexity of the cognitive object such as, for example the Sub dimension of Social cohesion concerning the aspects of feeling of trust in community relations, the perception of accessibility to the resources offered by the local community etc.

From these sessions it is expected to obtain useful information for the reconstruction of the change taking place and to capture unexpected effects that can enrich both the evaluation hypotheses and allow the identification of possible trade-offs of the project actions.

In addition to these cognitive purposes, the focus group is also an opportunity to present the evaluation project to the inhabitants thus enhancing their level of interest and engagement.

Data collection through storytelling

Storytelling is proposed as an innovative data collection tool within this assessment plan.

ISIM will analyse 5 stories per city every year, collected by the local community activators (a total of around 100 stories by the end of the project). For the first year (baseline study), community activators will collect stories built around the triggering event of Covid-19 pandemic.

The stories collected will aim to assess the impacts of Covid 19 on the health and well-being of people who are part of the intervention group. In particular, stories will describe how people's lives have changed in regard to one or more qualitative Isimpact indicators due to the pandemic

In the following years the other stories will have to concern changes connected to the IN-HABIT VIS (the solutions will be used as triggering event of the narrative scheme).

ISIM has developed a five-steps methodology to use storytelling as a means of evaluation and community activators have been trained to use this methodology on field . The five steps are described as follows:

step 1 – Preparation of the story

the process start with the identification of an event, which generates the change in the aspects of life (health and well-being) selecting one or more qualitative impact dimensions/indicators . Each story is built around at least one impact indicator.

step 2- Identification of the protagonist

Local activators will choose one or more privileged witnesses with a relevant and interesting personal story in regard to one or more indicators among local observers or target groups. The main narrative pattern is "how the aspect of the protagonist's health and well-being changed"

step 3 – Identification of the triggering event

The narrative is organized around a before /after scheme with a triggering event in the middle. It is a fact, or an event, which generates the change in a specific aspects of life (health and well-being dimension/indicators)

step 4- description of a process of change/evolution

Protagonist describe the new condition trying to bring out differences. And how this change impacts on IHW indicators.

Step 4 - Future Evolution

At the end of the story the protagonist lives in a new situation and reflects upon how their condition could change in the future as well

Rationale for the use of storytelling

Storytelling can be an effective tool in measuring social impact since stories bring about dynamism, imagination and provocation that numbers in a survey fail to provide. They can be a powerful tool for obtaining qualitative information on the social change.

In fact, compared to semi-structured interviews, storytelling is characterized by:

- No rigid interview scheme, but open dialogue. The story can be reconstructed afterwards by the researcher
- High personalization and uniqueness of protagonist's point of view
- High exposure of protagonist's personal identity (ethical issues)
- Possible inclusion of individuals who are not part of numerically relevant groups
- Better representation of Change

In addition to quantitative analysis stories allow us to:

- Grasp emotional aspects and nuances on individual experiences
- Rebuild the changes that happen in a very short time (even a day) in a longer time beyond the project
- Detect unexpected changes and aspects of the context, not considered in the research design

Behavioural games

The impact assessment on IHW involves, at different stages and levels, all the partners in the 4 pilot cities (universities, local public authorities and NGOs/enterprises) and is closely interconnected with the other transversal work packages, in particular: the gender landscaping and behavioural games carried in WP6.

IN WP6 UREAD will involve inhabitants belonging to groups at risk of discrimination and exclusion within behavioural games aimed at proposing behavioural alternatives that may contribute to change the personal way of thinking, acting and relating to others in daily life (task 6.4). These games will be also used by ISIM in task 7.4 for the purposes of ongoing impact assessment to analyse specific qualitative key impact indicators such as: domestic isolation, freedom of personal contact, civil engagement, social engagement, accessibility of local resources, change-making attitude, awareness and motivation about healthy habits, fruit and vegetables consumption, cultural consumption, practice of sports in public green areas, perceived benefits from culture/urban nature/sports/fruit and vegetables consumption/social and recreational public spaces.

To this aim, ISIM will collaborate with UREAD in the design of the behavioural games and the results will be analysed by ISIM in task 7.3.

4.5.4 Communication and data visualization

ISIM collaborate with WP8 and partner BOT in order to maximise the dissemination of its impact assessment activity as well as to use communication tools and channels for data collection purposes.

The following table summarizes the main interconnections between impact assessment in WP7 and communication actions in WP8:

— Table 6 – Interconnections between impact assessment and communication actions

Communication to support data collection	Communication to disseminate results
city communication campaigns on social media will raise the interest of the public and support inhabitants participation in the research	data storytelling: data turned into narrative patterns, creating emotional, engaging, informative, compelling stories to disseminate research results
data collection through storytelling	data visualization: data turned into high impact visual products
IN-HABITAPP engages inhabitants through gamification and mobile experience sampling	IN-HABITAPP used as a mean to communicate data on IHW and stimulate inhabitants' awareness and action

IN-HABIT impact will be narrated through a strategy of effective and decisive communication at city level which will make use of the following tools:

- The project website and social network
- The social networks of those organized groups that are part of the local IN-HUBs and which will be involved as multipliers of the message
- The project newsletter
- Media relations at local level.

For a better social Impact communication it is certainly necessary to find a balance point between quantitative data and qualitative, but the focus must always be on the change generated in the various contexts of action and people's life.

ISIM will collaborate with BOT in turn data into high impact visual patterns as well as in producing narrative contents, creating emotional, engaging, informative, compelling stories to disseminate research results (data storytelling).

Data visualization

The representation of data and information through charts and diagrams – can be used to clearly communicate important information and is often a much faster way of sharing a message than describing everything in written text.

A good visualization should establish two aspects of the data being presented: (i) show connections within the data that are too complex to explain with words; (ii) make it easier for the audience to quickly understand the information presented and consider the outcomes from that data.

An image, chart or diagram does more than simply representing numbers and facts.

Emotion can be conveyed through colours, font choice, layout and can help to draw the attention of the audience.

One of the big challenges in visualizing data, and quantitative research in general, is the ability to help readers connect with the content. Standard graphs like bar charts, line charts, and pie charts, while informative, can abstract from the content and people being represented. Taking an empathetic view of the reader's needs as they read or perceive information is one step to better data communication. This kind of empathy is often couched in terms of producing specific graphs that meet the needs and expertise of our readers. But viewing empathy through a gender, diversity, equity and inclusion (GDEI) lens would mean considering how the specific lived experiences and perspectives of our readers (not to mention the actual study populations) will perceive the information. For example using icons and shapes with a racial equity awareness, avoiding lumping groups with few observations into the seemingly innocuous "Other" category; not using colour palettes that reinforce gender stereotypes, such as baby pink and baby blue to represent women and me

ISIM will collaborate with partners BOT and WTG to turning data into high impact visual stories in four different ways:

- Infographics: these usually contain key facts and figures, charts, brief explanations, and simple illustrations. They are easy to share online, and in particular we will use Inhabit social network.
- Dashboards: a dashboard displays real-time data in an interactive online format. Partner WTG will implement a dashboard with a list of IHW Indicators, that will be updated once in a year.
- Social Cards: social cards can display key quotations or headline statistics, and can be produced quickly and with limited resources.

The IN-HABITAPP will be also used both as a data collection tool as well as an interactive communication channel which may convey key findings on changes affecting people's health and well-being at local level in a way which is easily readable by the users and integrated with the users' live experience of the solutions in the urban space.

ISIM and BOT will cooperate for the design of the app architecture and user experience, to promote people's use of app on mobile devices (smartphones) in a way that they can be geolocated and receive prompts asking them to answer short surveys or provide other data in relation to their experience in the city space (cfr. Gamified Assessment).

Regarding data integration and visualization, partner WTG will develop a long-term sustainable data platform securing open and consistent data about the performance and impacts of the deployed solutions in the four IN-HABIT cities (WP7.2).

The IN-HABIT data platform will be used for co-design and monitoring purposes in WPs 1-4, to collect data in WP5 and WP6, for impact assessment purposes in WP7 and for communication and dissemination activities in WP8.

The platform will allow for the integration and visualizations of data from various sources (sensors, cameras, open data, mobile app) at city level (i.e., air pollution and temperature, movements of persons and vehicles, noise, landscape features), to produce interactive scenarios, GIS mapping and spatial/environmental analysis in real time that cities are defining.

A list of IHW indicators involved in this data integration and visualization process has been shared with WTG on month 7.

5. The GDEI perspective in the assessment of impact on IHW

A Diversity, Equity, and Inclusion (DEI) perspective aims at promoting diversity, equity, and inclusion considering personal characteristics and circumstances. As a whole, Diversity, Equity and Inclusion efforts seek to create meaningful, systemic change toward more equitable environments by: including all the ways people differ, encompassing the different characteristics that make one individual or group different from another (ethnicity, gender, disability, sexual orientation, religion and beliefs, and more); promoting fair treatment, access, opportunity, and advancement for all people, while at the same time striving to identify and eliminate barriers that have prevented the full participation of some groups (equity); creating environments in which any individual or group can be and feel welcomed, respected, supported and valued (participation).

IN-HABIT adds “Gender” to the DEI perspective, as it aims to particularly integrate a gender approach into its activities, with a view to promoting equality and equity in health and well-being between women and men. Besides biological factors, social norms and stereotypes also affect the health and well-being status of women and men differently. Among its primary goals, IN-HABIT aims to investigate challenges and develop innovative solutions in order to boost equity and inclusion in health and well-being at an urban level, with a particular focus on gender and diversity. In addition, in all its activities, IN-HABIT stands for and implements fair treatment of any underrepresented group, as well as fair and non-binary language.

The assessment of the IN-HABIT project’s impact will take into account the role of gender and diversity, equity and inclusion in the success of the solutions when it comes to enhancing health and well-being of inhabitants in the four pilot cities. The GDEI perspective is mainstreamed across the whole evaluation plan, from the indicators co-design to the data collection and analysis in light of the following assumptions:

1. The envisaged nature based, social, cultural and digital solutions may have a different impact on people, based on their personal characteristics and living conditions, since they may benefit from these solutions in a different way. Living conditions are the everyday environment of people, where they live, play and work. These living conditions are a product of social and economic circumstances and the physical environment – all of which can impact upon health – and are largely outside of the immediate control of the individual.²²

²²<https://www.who.int/healthpromotion/about/HPR%20Glossary%201998.pdf?ua=1>.

2. Some personal characteristics and conditions like age, gender, legal status, country of birth, ethnicity, sexual orientation, gender identity, disability, religion and belief may influence the perception of well-being and health and, consequently, the definition of expected results, indicators and self-reported changes on one's individual/social conditions and urban environment. For the people who hold those characteristics, stigma, discrimination and hate crimes perception may affect their health and well-being. Based on personal characteristics, people may encounter other obstacles related to the spatial, economic and social organisation of local communities that takes into consideration the characteristics of the majority. The difficulties for minorities to make their voice heard in order to contribute to community decision-making and policies, hinder de facto the inclusiveness of cities. According to the European Council, while being a majority can be either a static or dynamic situation, being a minority is mainly a static one: "Discrimination is usually exerted by majorities upon minorities. Being in the majority is a static or a dynamic situation. When one or several aspects of our identity (nationality, religion, sexual orientation, gender, lifestyle, disability) are representative of a group that constitutes less (usually much less) than 50% of the whole of the population of a given geographical unit, being in a minority is a static situation."²³

Diversity is a reality created by individuals and groups from a broad spectrum of demographic and philosophical identifications. Within the proposed assessment framework, the term is used to indicate the groups of people who are at risk of exclusion and discrimination. Diversity drives cultural, economic, and social vitality and innovation whilst decades of research suggest that intolerance hurts our well-being and that individuals thrive when they are able to tolerate and embrace the diversity of the world.²⁴ The concept of diversity means/entails understanding that each individual is unique, and recognizing our individual differences. It is about understanding each other and moving beyond simple tolerance to embracing and celebrating the rich dimensions of diversity contained within each individual.²⁵ Considering diversity implies the acknowledgement that categories of difference are not always fixed but also can be fluid, thus respecting individual rights to self-identification, recognizing that no one culture is intrinsically superior to another. Research shows that differences make it harder for people to connect and empathize with each other. Even though people all over the world do it every day, navigating differences can be tough, whether in the classroom, the workplace, or our personal relationships.

When we talk about **Equity** we talk about an approach that ensures everyone's access to equal opportunities. Equity recognizes that advantages and barriers exist, and that, as a result, we do not all start from the same place. Equity is a process that begins by acknowledging the unequal starting place and makes a commitment to correct and address this imbalance. Equity is when everyone has access to those opportunities necessary to satisfy their essential needs, advance their well-being and achieve their full potential.

²³[Discrimination and Intolerance - Council of Europe \(coe.int\)](https://www.coe.int/en/web/ta-anti-discrimination).

²⁴[Diversity Definition | What Is Diversity \(berkeley.edu\)](https://www.berkeley.edu/diversity).

²⁵[Diversity and inclusion | Sustainable Development Goals - Resource Centre \(relx.com\)](https://www.relx.com/diversity).

When we talk about **Inclusion** we refer to the act of creating involvement, environments and empowerment in which any individual or group can be and feel welcomed, respected, supported and valued to fully participate. An inclusive and welcoming climate with equal access to opportunities and resources embrace differences and offers respect in words and actions for all people.

Inclusion means that people with different identities feel as if they genuinely belong to the community, are valued and relied upon, empowered and feel they ultimately matter for that community.

5.1 Identification of personal GDEI personal characteristics

In order to identify the personal GDEI characteristics impacting on health and well-being, ISIM and UREAD have worked together during the first phase of the project (M1 – M6) The selection of the GDEI Personal characteristics started from the assumption that inhabitants at risk of discrimination and exclusion are affected by policy and projects solutions in a different way.

For the purpose of this selection, it was first made a review of the existent classifications on the basis of the grounds of discrimination indicated in the EU legislation²⁶ and European organization against discrimination, in particular FRA, Fundamental Rights Agency and ECRI, European Commission against Racism and Intolerance can help us to identify the categories because they involve these stakeholders into research and surveys' design. ISIM then reviewed a series of European reports on equality data.²⁷

Based on this literature review, as well as considering the preliminary results of the co-design of the indicators, a set of **GDEI personal characteristics** has been selected which will be taken into account in the analysis of change produced by IN-HABIT solutions. These characteristics include: **age, gender, sexual orientation, ethnicity, legal status** (including citizenship status, residency status and country of birth), **religion and disability**.

The following tables describe the set of indicators (common for all the city pilots) selected by partners ISIM and UREAD to detect GDEI personal characteristics among the participants to the primary data collection actions.

²⁶Racial Equality directive 2000/43/EC establishes a framework for equal treatment in different fields; Employment Equality Directive 2000/78/EC establishes a general framework for equal treatment in employment and occupation, prohibiting discrimination on a longer list of grounds (religion or belief, disability, age and sexual orientation), but across a more limited material scope (employment and vocational training).

²⁷European Handbook on Equality, European Commission Directorate-General for Justice and Consumers, 2016. Ethnic' Statistics and Data Protection in the Council of Europe Countries: A Study Report, Council of Europe, 2007. Second European Union Minorities and Discrimination Survey Technical report, European Union Agency for Fundamental Rights, 2017.

Analysis and comparative review of equality data collection practices in the European Union Data collection in the field of ethnicity, European Commission Directorate-General for Justice and Consumers, 2017;Afrophobia in Europe ENAR Shadow Report 2014-2015, European Network Against Racism.

— Table 7 - Indicators for the detection of GDEI personal characteristics affecting health and well-being

Indicator	Description
Age	Drop down menu with options from 18 to 99
Gender	<ul style="list-style-type: none"> • Male • Female • Non binary • Other • prefer not to answer
Sexual orientation	<ul style="list-style-type: none"> • Heterosexual/Straight • Bisexual • Lesbian/Gay woman • Gay man • Prefer not to answer • Other (specify)
Ethnicity	<p>Options for Cordoba: African descendants / Black; Asian; Roma/Gipsy/Traveller; Middle Eastern; Other (specify)</p> <p>Options for Riga: African descendants / Black; Asian; Roma/Gipsy/Travel-ler; Russian ; Middle Eastern Other (specify)</p> <p>Options for Lucca: African descendants / Black; Asian; Roma/Gipsy/Travel-ler; Middle Eastern; Other (specify)</p> <p>Options for Nitra: African descendants / Black; Asian; Roma/Gipsy/Travel-ler; Russian; Middle Eastern; Hungarian; Czech; Serbia; Ukrainian; Italian; Romanian; Bulgarian; Polish; Other (specify)</p>
Citizenship status	<ul style="list-style-type: none"> • National citizen • Naturalized citizen • Foreign citizen • Non citizen (only for Nitra)
Residency status	<ul style="list-style-type: none"> • permanent immigrant • temporary immigrant • asylum seeker/holder • refugees • student or tourist visa • undocumented
Country of birth	<ul style="list-style-type: none"> • Same country of actual residence • Different country from the one I was born in (naturalized citizen)

Importance of religion in one's life	<ul style="list-style-type: none"> • Persons who think that religion is important in their life
Religion	<ul style="list-style-type: none"> • Buddhism • Christianity (including Catholic, Protestant and all other Christian denominations) • Hinduism • Judaism • Islam • Sikhism • I am not religious • Prefer not to answer • Other (specify)
Disability	<ul style="list-style-type: none"> • Persons who have a disability
Type of disability	<ul style="list-style-type: none"> • Deafness or severe hearing impairment • Blindness or severe visual impairment • A condition that substantially limits physical activity • A learning difficulty • A long-standing psychological or mental health condition • Other (including long-standing illness)

Within the proposed impact evaluation, intersectionalities among these characteristics will be also considered, by capturing changes on health and well-being over groups who hold multiple GDEI characteristics.

For example, specific barriers are faced by persons with disabilities who are at the intersection of identities (gender, racial, ethnic, sexual, religious), or in a difficult socio-economic or other vulnerable situation. Among persons with disabilities, women, children, older persons, homeless persons, refugees, migrants, Roma and other ethnic minorities need particular attention. The same can be said of older people in case they are women or migrants, with disabilities etc.

The selected characteristics were discussed with the city partners to identify context- specific sub-classification, as for example city-specific ethnic groups or legal status categories.

A further discussion point among project partners was about “how to ask” about people’s GDEI personal characteristics.

This implied the consideration of ethical issues of not causing discomfort to the respondents on one hand as well as the researchers’ need of having data disaggregated by GDEI characteristics. Both perspective and needs were taken into account, also considering the specificities of the social context in the 4 cities when it comes to express personal identity aspects.

The results of this discussion and validation with city partners have been considered for the design of the socio-demographic questions of the two general surveys (see Annex 2).

5.2 Identification of GDEI indicators

Within the co-design of IHW Indicators, specific attention has been paid to the selection of those indicators who may help assessing whether and to what extent the IN-HABIT solutions will have produced a different change on the groups holding GDEI personal characteristics when compared to the rest of the target groups.

In line with the GDEI perspective, the groups at risk of exclusion and discrimination or their representatives (NGOs supporting them and protecting their rights) have been included in the assessment process from the beginning.

Among the co-designed IHW Indicators (see part A section 3), a sub-group of indicators who are “sensitive” to GDEI personal characteristics of people have been identified and selected (GDEI indicators) through a participative process.

First, during the co-design workshops (see part A section 3), local inhabitants involved, represented both men and women, were encouraged to discuss about the possible changes that may affect GDEI target groups in a different way. The results of these workshops have been explored in part B section 3 and they contributed to the definition of GDEI indicators.

The information derived from local inhabitants and stakeholders’ consultation have been used to complement the literature review of European strategies for the inclusion of the people at risk of marginalisation and discrimination and the most important European reports issued by European agency and organizations which take care of discrimination and social exclusion issues, as describes in the following table:

— Table 8 - Reviewed literature on GDEI

Reviewed literature on GDEI	
Gender	Gender Equality URBACT Gender Inequalities in Cities (iadb.org) Annual_report_ge_2021_en.pdf (europa.eu) Gender Equality Index European Institute for Gender Equality (europa.eu)
Elderly	Older People' Rights AGE Platform (age-platform.eu) European Commission, <i>GREEN PAPER ON AGEING Fostering solidarity and responsibility between generations</i> , January 2021 1_en_act_part1_v8_0.pdf (europa.eu)
LGBTIQ+	European Union Agency for Fundamental Rights, <i>EU LGBTIQ+ II. A long way to go for LGBTIQ+ equality</i> , 2020 A long way to go for LGBTIQ+ equality (europa.eu) European Commission, <i>Union of Equality: LGBTIQ+ Equality Strategy 2020-2025</i> , November 2020 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0698&from=EN

<p>Ethnic and religious minority and groups</p>	<p>European Union Agency for Fundamental Rights, <i>Together in the EU - Promoting the participation of migrants and their descendants</i>, 2017 Together in the EU - Promoting the participation of migrants and their descendants European Union Agency for Fundamental Rights (europa.eu)</p> <p>European Union Agency for Fundamental Rights, <i>EU MIDIS II. Being Black in the EU. Second European Union Minorities and Discrimination Survey</i>, 2018 Being Black in the EU. Second European Union Minorities and Discrimination Survey (europa.eu)</p> <p>European Commission, <i>Union of Equality. EU Roma strategic framework for equality inclusion and participation</i>, October 2020 union_of_equality_eu_roma_strategic_framework_for_equality_inclusion_and_participation_en.pdf (europa.eu)</p> <p>Definition of antisemitism European Commission (europa.eu)</p>
<p>Disability</p>	<p>European Commission, <i>Union of Equality.: Strategy for the Rights of Persons with Disabilities 2021-2030</i>, March 2021 Union of Equality: Strategy for the Rights of Persons with Disabilities 2021-2030 (autismeurope.org)</p> <p>Human Rights Report 2021 – Impact of COVID-19 on persons with disabilities</p> <p>EDF position paper EU global role in COVID 19 response and impact on lives of persons with disabilities (April, 2021)</p> <p>Extract Human Rights Report 2020 – Impact of COVID-19 on persons with disabilities</p>

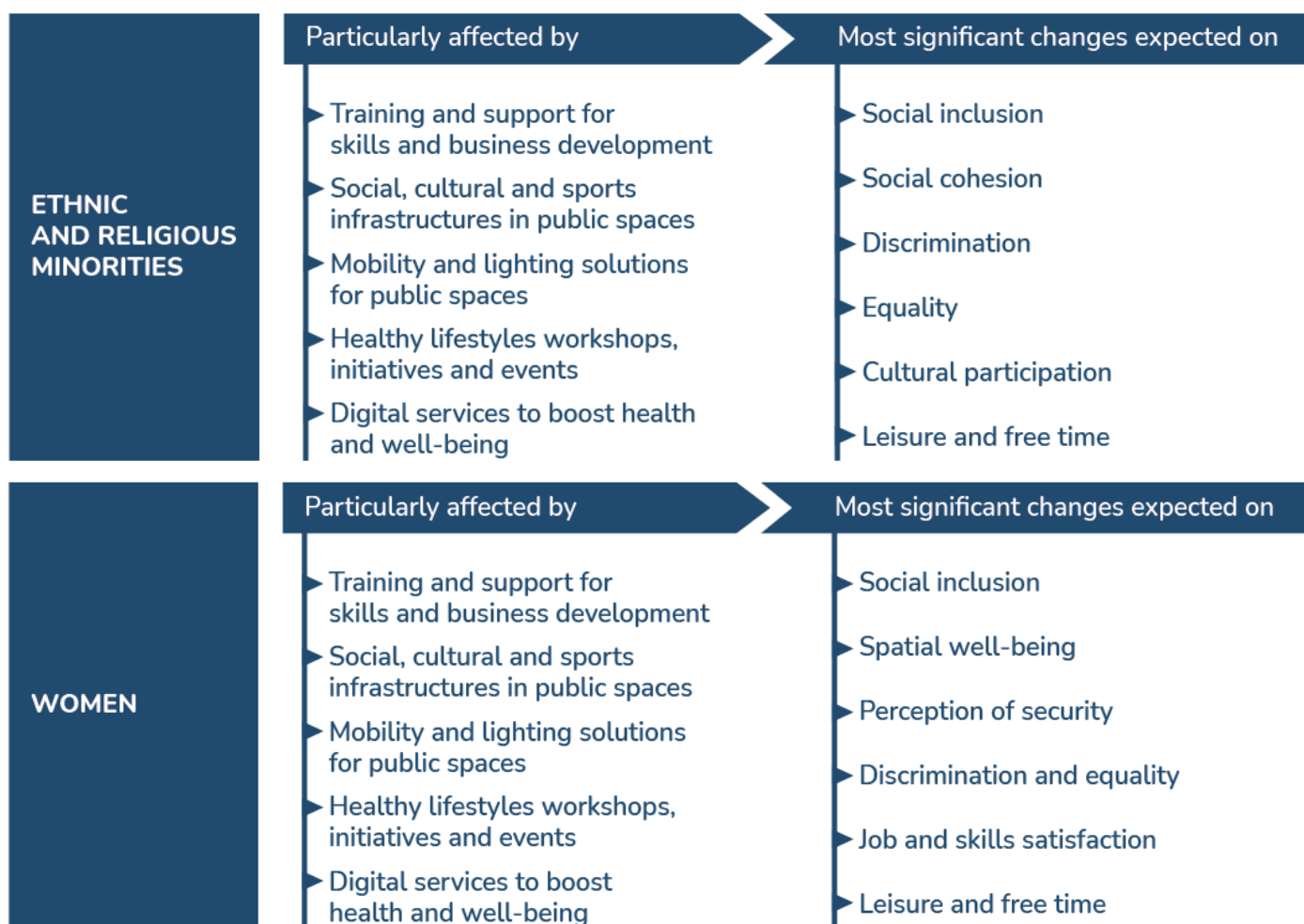
The key findings from the literature review as well as those from the consultation of the GDEI organizations at local level were analysed to identify the **sub-dimensions of IHW that are sensitive to the GDEI personal characteristics of interest**.

The result of this analysis are presented in Annex 6.

5.3 Assumptions on GDEI expected impacts of the IN-HABIT solutions

The results of both the literature review and the consultations of the representatives of local groups at risk of discrimination by sex, sexual orientation and gender identity, age (elderly), disability, ethnicity and religion, as described in the previous paragraph, allowed to establish the following assumptions regarding the expected GDEI impacts of the project VIS on such target groups:

— Figure n.9 – Assumptions on GDEI expected impacts



<p>ELDERLY</p>	<p>Particularly affected by</p> <ul style="list-style-type: none"> ▶ Nature based solutions in public spaces ▶ Social, cultural and sports infrastructures in public spaces ▶ Cultural and art events and initiatives ▶ Mobility and lighting solutions for public spaces ▶ Healthy lifestyles workshops, initiatives and events 	<p>Most significant changes expected on</p> <ul style="list-style-type: none"> ▶ Social inclusion ▶ Social cohesion ▶ Spatial well-being ▶ Perception of security
<p>PERSONS WITH DISABILITIES</p>	<p>Particularly affected by</p> <ul style="list-style-type: none"> ▶ Training and support for skills and business development ▶ Social, cultural and sports infrastructures in public spaces ▶ Cultural and art events and initiatives ▶ Mobility and lighting solutions for public spaces ▶ Healthy lifestyles workshops, initiatives and events ▶ Digital services to boost health and well-being 	<p>Most significant changes expected on</p> <ul style="list-style-type: none"> ▶ Social inclusion ▶ Social cohesion ▶ Spatial well-being ▶ Discrimination and equality ▶ Job and skills satisfaction ▶ Leisure and free time
<p>ELDERLY</p>	<p>Particularly affected by</p> <ul style="list-style-type: none"> ▶ Nature based solutions in public spaces ▶ Social, cultural and sports infrastructures in public spaces ▶ Cultural and art events and initiatives ▶ Mobility and lighting solutions for public spaces ▶ Healthy lifestyles workshops, initiatives and events 	<p>Most significant changes expected on</p> <ul style="list-style-type: none"> ▶ Social inclusion ▶ Social cohesion ▶ Spatial well-being ▶ Perception of security

5.4 Synergies with WP6

The impact assessment action on inhabitants' IHW carried in WP7 presents many joint actions and synergies with the work carried in WP6 that aims at enabling behavioural changes with a GDEI perspective. More specifically:

- Selection of personal GDEI characteristics which may influence both impact on health and well-being as well as access to innovations and behavioural change

These characteristics have been jointly selected by ISIM and UREAD to provide the whole IN-HABIT research and innovation action with a common GDEI framework. The selection of the city-specific groups like ethnic minorities and religious minorities has been complemented through the consultation with city partners. Such categorization will be used for the collection of secondary data in WP7 and WP6 and it will inform both the gender landscaping (task 6.2) as well as the data collection and analysis for impact assessment purposes (tasks 7.3, 7.4 and 7.5)

- Selection of GDEI indicators which may reveal inequalities in the access to local common pool resources on one hand and a differential impact on local groups depending on their GDEI personal characteristics on the other hand

These indicators have been selected based on the literature review as well as on the consultation of the representatives of those NGOs working for the protection of rights of groups at risk of discrimination and exclusion in each city. GDEI indicators relate to all the dimensions and sub-dimensions of health and well-being identified in WP7 and they will be used for the collection and analysis of primary and secondary data in WP7 as well as for the design of the behavioural games and the gender landscapes in WP6.

- Use of behavioural games

Behavioural games run by partner UREAD will be used for impact assessment purposes (see Part B section 5).

- Analysis of GDEI data

In WP7 partner ISIM will analyse disaggregated data by GDEI characteristics and a specific set of indicators that are sensitive to GDEI will be measured to assess the differential impact of the solutions on inhabitants' health and well-being based on such characteristics. The same data and evidences resulting from WP7 will be also used in WP6 by UREAD for the construction of gender landscapes (task 6.2) on one hand as well as for the production of a Handbook on Gender, Diversity and Inclusion for Cities (task 6.5)

6. Citizen science inclusion mechanism

Citizen Science refers to the general public engagement in scientific research activities when inhabitants actively contribute to science either with their intellectual effort or surrounding knowledge or with their tools and resources (EU Commission 2013).

Citizen science is the knowledge, resources, competence and skills of inhabitants which have to be included in the project implementation process in order to make cities solutions effective and useful for the inhabitants themselves

It is an emerging area of research and practice, with evolving standards on which different stakeholders are developing methodologies, theories and techniques. The complexity of terminology is well acknowledged (see Eitzel et al. 2017).

Citizen science is in fact a common name for a wide range of activities and practices and can be understood only by considering those activities characteristics in reference to/which comply with/fall into one or more of the ECSA 10 principles (ECSA 2020).

The following section explains how the ECSA 10 principles of citizen science have been applied within the present impact assessment action.

6.1 Application of the ECSA principles of citizen science

Within the proposed impact assessment framework, inhabitants are engaged in the “multiple stages of the scientific process” related to impact assessment from the co-design of indicators to the data collection and communication actions (ECSA principle 4). The perspective of local communities is in fact embedded in the research from the beginning (co-design of expected results and indicators) and inhabitants are involved in participatory assessment actions: gaming, storytelling, focus groups, mobile experience sampling. The participation of inhabitants in the impact assessment activities is supported by the activities of partners through the IN-HABIT communication campaigns and tools (IN-HABITAPP), the action of local stakeholders and the use of incentives, both monetary and non monetary.

In the impact assessment activities inhabitants “have a meaningful role” and “act as contributors” and “collaborators” (ECSA principle 1) especially local observers and all the stakeholders included in the city IN-HUBs.

“Both the professional scientists and the citizen scientists benefit from taking part” in the co-design of indicators through workshops, meetings, documents sharing and interviews, bringing “learning opportunities” and “personal enjoyment” for both and “social benefits” for inhabitants who have the chance to say a word and receive a feedback on their contribution “to scientific evidence” (ECSA principle 3) and from

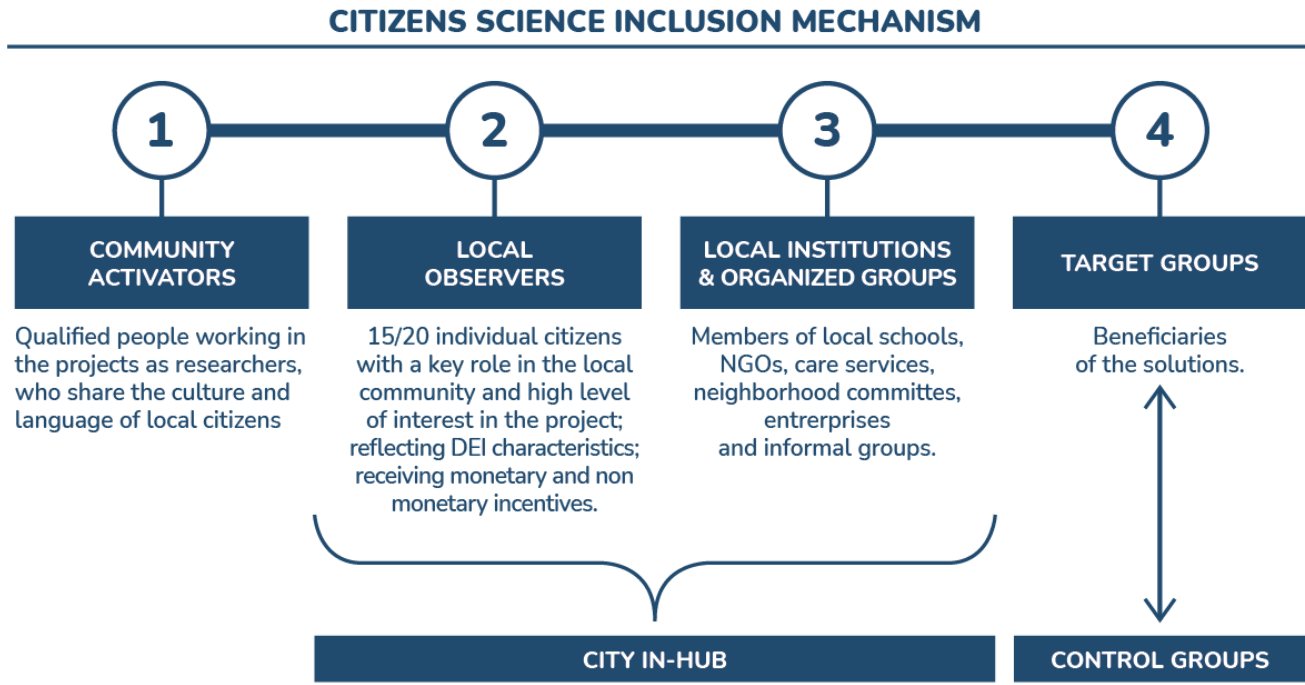
the impact assessment activities in terms of data use and expected outcome (ECSA principle 5). Impact assessment activities make sure that the inhabitants traditionally excluded are engaged providing “opportunity for greater public engagement and democratisation of science” by including as much as possible the perspective and point of view of people at risk of discrimination and exclusion and exclusion who are involved from the beginning in the co-design of the results indicators as well as in the data collection actions. Personal characteristics which may affect the project’s impact on health and well-being are in fact included in the research framework and data are disaggregated by gender, age, sexual orientation, gender identity, ethnicity, disability, religion and belief (GDEI characteristics). Expected results which may be influenced by GDEI characteristics are included in the research framework as GDEI indicators (ECSA principle 6). Data storytelling will be used as a communication and reporting tool to make research data available in clear and pleasant format which will give acknowledgement of citizen in the assessment results and report (ECSA principle 8).

6.2 The four level Citizen Science Inclusion Mechanism

Within the present impact assessment strategy, a Citizen Science Inclusion Mechanism (CSIM) has been designed to define and represent the various levels and types of contributions provided by local inhabitants to the impact assessment activities in each pilot city.

The CSIM is articulated into 4 levels. Each level is interconnected with the previous and the following level and differs from the others on the basis of the degree of involvement in the research activities (level 1 represents the highest degree of involvement and level 4 the lowest) as well as on the basis of the type of contribution provided by inhabitants.

— Figure n.10 – The Citizens Science Inclusion Mechanism



First level

Local community activators (LCAs) are the starting point of the “snowball” involvement mechanism envisaged in this scheme. They are employed as co-researchers who share some key cultural resources with the local inhabitants, namely the language (they speak both English and the local language), the city culture and the knowledge of the local context.

Besides administering interviews and facilitating focus groups in the local language, they act as activators of local inhabitants, identifying, involving, motivating and keeping contact with interested people and organizations.

LCAs are researchers and/or members of local organizations - with a background in social studies, statistics or urban planning - selected and hired by city partners (universities and local authorities).

The LCAs have been trained at the beginning of the project by ISIM and other research partners and they will be supported by accompaniment activities run by ISIM all over the project.

Second level

The second level of the mechanism is represented by the local observers, who are individual inhabitants and/or representatives of local organizations and groups who show a high level of interest, potential/actual involvement in the project or have a key role within the local community.

They are about 15 per city, speaking the local language and they are the core group of the local IN-HUBs, namely people who are expected to live or work in the project areas for the whole duration of the intervention. They are considered as neighbourhood observers and periodically involved in the research actions through focus groups, interviews, storytelling. Among them there are representatives of inhabitants usually less/not involved in public decision making and participative processes including groups at risk of discrimination and exclusion (special users).

Local observers are encouraged to act as key actors and multipliers of the IN-HABIT research and assessment actions among their own social groups. They are involved by the local community activators by means of a personal relationship (bond of trust) as well as through various forms of incentives offered by project partners.

Third level

The third level is represented by the members of local institutions and organized groups of inhabitants (for example school teachers, social workers and volunteers of local NGOs/social care services, members of local neighbourhood committees etc). They are periodically involved in quantitative research actions (surveys, gamified surveys, mobile experience sampling) but also in qualitative data collection activities (i.e. storytelling sessions, Instagram contests).

The members of organized groups are activated and involved by local observers with the snowball method. They also act as multipliers of the research activities by involving the general public of inhabitants in the research actions (i.e. spreading surveys to their contacts, spreading social network posts and initiatives, distributing questionnaires). In case of need, they are also activated as linguistic mediators for the involvement of migrants in the research actions. They are involved by the local observers by means of a personal relationship (bond of trust) as well as through various forms of incentives offered by project partners.

The second and the third levels correspond to the local IN-HUBs established by city partners in WP1, 2, 3 and 4.

Fourth level

The fourth level is composed by the project target groups, who are inhabitants living and/or attending the areas revitalised by means of IN-HABIT solutions. They include:

- inhabitants residing in intervention areas/neighbourhoods, including groups at risk of discrimination and exclusion based on age (over 65), sex, ethnic-racial origin, religion, sexual orientation and gender identity, disability;
- inhabitants who use the areas of intervention for reasons of work, study, entertainment/leisure, tourism, education;
- users/participants of the proposed social, cultural and digital services, activities, events campaigns and training actions;
- members of the local organizations and institutions who participate in the co-design and co-management of the innovations.

They are the project beneficiaries, namely “inhabitants and social groups targeted by the actions deployed by the project. They are recipients of the positive effects resulting for the process independently from their level of engagement into its implementation”²⁸.

The target group of beneficiaries is periodically involved in the impact assessment actions by means of data collection actions like Mobile Experience Sampling, surveys (including gamified surveys) and Instagram contests.

Target groups are involved by means of the following channels:

- direct contact through on-line communication via the project website and social networks
- indirect contact with the help of the local observers and institutions/organized groups (schools, associations, social enterprises, neighbourhood committees, informal groups, municipal social and health services).

They can also benefit from incentives for the participation in the proposed research and engagement actions.

6.3 Ethical issues concerned with participatory evaluation

Citizen science offers important benefits to science and society but it also raises ethical issues that should be addressed when projects begin and throughout the course of scientific investigation.

To address ethical issues, ISIM has developed an ethical statement that has been submitted to local municipalities and regional authorities for their approval as well as disseminated and discussed with local community activators during the initial training.

The proposed assessment strategy involves local inhabitants within individual/group interviews and focus groups, surveys and communication activities, both in person and by means of digital tools and ICTs.

These activities will also be aimed at people belonging to groups at risk of discrimination and exclusion, such as people with disabilities, elderly, ethnic or religious minorities, LGBTIQ+ people, women.

The data collection tools and actions include contents that could cause discomfort in the participants. In particular, the following aspects of the private sphere, social and economic life and individual psycho-physical health are investigated:

- belonging to a binary (male and female) and non-binary (transsexual, intersex) gender
- belonging / self-perception as members of groups at risk of discrimination and exclusion such as ethnic minorities, religious minorities, LGBTIQ+ + people
- the age
- the condition of a person with disabilities

²⁸IN-HABIT Glossary

- the global emotional / psychological state or in relation to specific events / places in the city
- the state of mental health
- the employment, housing, economic condition, the state of material deprivation, the ability to satisfy their own needs and those of their family
- the perception of the safety and quality of urban spaces
- one's good and bad habits and lifestyles that can affect health and psycho-physical well-being (e.g. consumption of fruit and vegetables, physical activity / sport, alcohol consumption, tobacco consumption, cultural consumption, use of time free use of urban spaces)

For this reason, participants are informed in advance and for each data collection activity about the purposes of the research, the voluntary nature of participation and the possibility of not responding, to freely express their discomfort with the subject of the questions or to abandon the research at any time.

ISIM carries out this action in compliance with the fundamental principle of research integrity — as set out in the European Code of Conduct for Research Integrity²⁹.

Personal data are always collected and processed by the ISIM following the informed consent of the interested party (or of the parent or guardian in the case of a minor or of a person unable to provide consent). The collected data will be shared with the project partners only in anonymized form and only for the research purposes envisaged by the project.

For each data collection action (survey, interview, focus group, mobile sampling experience, Instagram contests, gamified surveys and behavioural games) a specific information is distributed to participants before starting the activity. The information sheet informs participants about the purposes of the research, the voluntary nature of participation and the possibility of not responding, to freely express their discomfort with the subject of the questions or to abandon the research at any time. In case of surveys, mobile experience sampling and Instagram contests the information sheet is provided in written together with the questionnaire or module; in case of face to face/phone interviews, focus groups and behavioural games, the information sheet will be distributed in advance at the time of the request for registration; in some cases, the community activators may be asked to read the information sheet to the participants before starting the activity.

If the research activity implies the collection and processing of personal data, including pictures and videos, a specific informed consent form is provided, which must be signed by the participants before starting the activity (i.e. at the time of the registration);

The information sheet and the informed consent form for tasks 7.3, 7.4 and 7.5 is provided by ISIM in EN and IT and adapted to specific project activities and legal requirements of each research action. Community activators will translate the information sheet and informed consent form in an understandable language for research participants (if needed);

²⁹<https://allea.org/code-of-conduct/>

Before starting any research activity involving processing of personal data, signature on the informed consent form is required (digital signature, recording of voice or tick of a box of online forms are also valid alternatives);

After each research activity, the signed consent form shall be stored in the IN-HABIT shared repository (not on personal computers).

The proposed research impact assessment action does not involve minors. However, school students may be involved by other project partners in the co-design of innovative solutions as well as in training and communication activities. In case of involvement of minors in impact assessment actions, consent to the participation and processing of personal data, as well as to the use of images, photos and videos for the purposes of reporting and communicating the results of the project, will be requested from parents through specific informed consent forms distributed in collaboration with the teachers of the participating schools.

People with mental disabilities as well as elderly people with psychic fragility and/or illiterate may be involved in research activities only if absolutely necessary. In this case, the aware participation and information of these persons will be supported by the local researchers as well as by the operators of the local social, educational and health services through which these inhabitants will be involved. Depending on the severity of the disability, consent to participate in research activities and to the processing of personal data will be requested to the parents or guardian of the participants. The research tools may be adapted to the needs of these target groups.

People at risk of discrimination and exclusion due to their ethnic origin, such as migrants or applicants / recipients of international protection with little knowledge of the national language may be involved in the research activities. In this case, the aware participation and information of these persons will be supported by the local researchers as well as by the operators of the local social, educational and health services through which these inhabitants will be involved. ISIMxd will involve city partners and stakeholders working with these groups to provide, whenever possible, translations of the research material (questionnaires, information sheet and informed consent) as well as support in the communication and engagement of these people.

BIBLIOGRAPHY

- Alvarez-Galvez, J. and Salvador-Carulla, L. (2010). Perceived Discrimination and Self-Rated Health in Europe: Evidence from the European Social Survey , PLoS One, 2013 Sep 5.
- Andrew, F. M. and Withey. S.B. (1976). "Social indicators of well-being." New York and London: Plenum 20(31): 696-717.
- Ann. N.Y. Acad. Sci. 1186. (2010). 125–145 c 2010 New York Academy of Sciences.
- Ares G., De Saldamando L., Giménez A., Deliza R. (2014). Food and wellbeing. Towards a consumer-based approach, *Appetite*, Volume 74, Pages 61-69, ISSN 0195-6663, <https://doi.org/10.1016/j.appet.2013.11.017>.
- Ateca-Amestoy, V., Villarroya, A., & Wiesand, A. Joh. (2021). Heritage Engagement and Subjective Well-Being in the European Union. *Sustainability*, 13(17), 9623. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/su13179623>.
- Austin, P. C., & Stuart, E. A. (2015). Moving towards best practice when using inverse probability of treatment weighting (IPTW) using the propensity score to estimate causal treatment effects in observational studies. *Statistics in Medicine*, 34(28), 3661–3679. <https://doi.org/10.1002/sim.6607>.
- Bech, P. (2004). Measuring the dimensions of psychological general well-being by the WHO-5. *QoL Newsletter*, 32, pp.15-16.
- Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2021). *Introduction to Meta-Analysis*. John Wiley & Sons.
- Bradley Cousins, J., Whittmore, E. (1998) Framing participatory evaluation.
- Browne Gott, H. (2020). Exploring the relationship between culture and well-being. Cardiff: Welsh Government, 15/2020.
- Cooper, H., Hedges, L. V., & Valentine, J. C. (2019). *The Handbook of Research Synthesis and Meta-Analysis*. Russell Sage Foundation.
- Dahlgren, G. and M. Whitehead. (2021). "The Dahlgren-Whitehead model of health determinants:30 years on and still chasing rainbows." *Public Health* 199: 20-24.
- Dale, H., et al. (2014). "The impact of healthy lifestyle interventions on mental health and wellbeing: a systematic review." *Mental Health Review Journal*.
- Diderichsen, F., et al. (2012). "Health Inequality-determinants and policies." *Scandinavian journal of public health* 40(8_suppl): 12-105.
- Diener, E. (2000). "Subjective well-being: The science of happiness and a proposal for a national index." *American psychologist* 55(1): 34.
- Diener, E., et al. (1999). "Subjective well-being: Three decades of progress." *Psychological bulletin* 125(2): 276.
- Diener E, Suh E. (1997). Measuring Quality of Life: Economic, Social and Subjective Indicators. *Social Indicators Research*, 189–216.
- European Environment Agency. (2019). *Healthy environment, healthy lives: how the environment influences health and well-being in Europe*, EEA Report n. 21/2019.

- European Citizen Science Association ECSA (2020). ECSA's characteristics of citizen science: explanation notes.
- European Commission Impact Evaluation Center. https://ec.europa.eu/regional_policy/en/policy/evaluations/guidance/impact_faq_theor#2.
- EU Commission. (2013). Green paper on citizen science.
- Farhud, D. D. (2015). "Impact of Lifestyle on Health." *Iran J Public Health* 44(11): 1442-1444.
- Fleming S., Cox M., Sen K., Wright-Revollo K. (2017). Strengthening the Poverty Impact of the Paris Declaration: Aid Effectiveness evidence gathering project on gender equality, human rights and social exclusion- Phase One Literature Review.
- European Social Survey. (2015). *Measuring and Reporting on Europeans' Wellbeing: Findings from the European Social Survey*. London: ESS ERIC.
- Firth, J., Gangwisch, J. E., Borsini, A., Wootton, R. E., Mayer, E. A. (2020). Food and mood: how do diet and nutrition affect mental wellbeing? *BMJ*; 369: m2382 doi:10.1136/bmj.m2382.
- Fournier, A. K., Berry, T. D., Letson, E., & Chanen, R. (2016). The human-animal interaction scale: Development and evaluation. *Anthrozoös*, 29(3), 455-467.
- Fredman S. (2016). Intersectional discrimination in EU gender equality and non-discrimination law, European Union.
- Frey, B. and A. Stutzer. (2002). "The economics of happiness." *WORLD ECONOMICSHENLEY ON THAMES-* 3(1): 25-42.
- Gan, G.Z.H., Hill, A.M., Yeung, P., Keesing, S. & Netto, J.A. (2020) Pet ownership and its influence on mental health in older adults, *Aging & Mental Health*, 24:10, 1605-1612, DOI: 10.1080/13607863.2019.1633620.
- Groenewegen, P.P. et al., (2018). *Neighbourhood social and physical environment and general practitioner assessed morbidity, in Helath&Place*, Volume 49, Pages 68-84).
- Grossi, E., Tavano Blessi, G. & Sacco, P.L. (2019). Magic Moments: Determinants of Stress Relief and Subjective Wellbeing from Visiting a Cultural Heritage Site. *Cult Med Psychiatry* 43, 4–24. <https://doi.org/10.1007/s11013-018-9593-8>.
- Historic England. (2018). Wellbeing and the Historic Environment. <https://historicengland.org.uk/images-books/publications/wellbeing-and-the-historic-environment/>.
- Lumley, T. (2011). *Complex Surveys: A Guide to Analysis Using R*. John Wiley & Sons.
- Meyer, I. H. (2003). *Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence*, *Psychol Bull.* 129(5): 674–697, *Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence* (nih.gov)
- Montesperelli, P. (1998). *L'intervista ermeneutica* (Vol. 9). FrancoAngeli.
- Jacobs Bao, K., Schreer, G. (2016). Pets and Happiness: Examining the Association between Pet Ownership and Wellbeing, *Anthrozoös*, 29:2, 283-296, DOI: 10.1080/08927936.2016.1152721.
- Kafka, G., Kozma, A. (2002). The Construct Validity of Ryff's Scales of Psychological Well-Being (SPWB) and their Relationship to Measures of Subjective Well-Being. *Social Indicators Research*. 57. 171-190. 10.1023/A:1014451725204.

- Kahneman, D., et al. (2004). "A survey method for characterizing daily life experience: The day reconstruction method." *Science* 306(5702): 1776-1780.
- Kaplan, R. M., et al. (1993). The quality of well-being scale: rationale for a single quality of life index. *Quality of life assessment: key issues in the 1990s*, Springer: 65-94.
- Kessler, R.C., Barker, P.R., Colpe, L.J., Epstein, J.F., Gfroerer, J.C., Hiripi, E., Howes, M.J., Normand, S.L.T., Manderscheid, R.W., Walters, E.E., Zaslavsky, A.M. (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry*. 60(2):184-9.
- Keyes, C. L. (2002). "The mental health continuum: From languishing to flourishing in life." *Journal of health and social behavior*: 207-222.
- Korp, P. (2010). "Problems of the healthy lifestyle discourse." *Sociology compass* 4(9): 800-810.
- Marradi, A., Archenti, N., & Piovani, J. I. (2010). *Metodología de las ciencias sociales* (pp. 241-241). Argentina: Cengage Learning.
- Odendaal, J. (2022). *Pets and Our Mental Health: The Why, the What and the How*, New York: Vantage Press, 199 pages. ISBN: 0-533-3856-6 (paperback).
- OECD (2020) Better Initiative, Measuring Well-being and progress, [OECD-Better-Life-Initiative.pdf](#)
- OECD. (2011). Better life Initiative, Compendium of OECD well-being indicators
- OECD (2020). *How's Life? 2020 Measuring Well-being*, OECD Publishing.
- Ostrom, E. (2002). "Common-pool resources and institutions: toward a revised theory." *Handbook of agricultural economics* 2: 1315-1339.
- Pesata, V., Colverson, A., Sonke, J., Morgan-Daniel, J., Schaefer, N., Sams, K., Carrion FM-E and Hanson S. (2022). Engaging the Arts for Wellbeing in the United States of America: A Scoping Review. *Front. Psychol.* 12:791773. doi: 10.3389/fpsyg.2021.791773.
- Prochaska JJ, Sung HY, Max W, Shi Y, Ong M. (2012). Validity study of the K6 scale as a measure of moderate mental distress based on mental health treatment need and utilization. *Int J Methods Psychiatr Res* 21(2):88-97.
- Ryff, C. D. and C. L. M. Keyes. (1995). "The structure of psychological well-being revisited." *Journal of personality and social psychology* 69(4): 719.
- Schmutz, U., Lennartsson Turner, M., Williams, S., Devereaux, M., & Davies, G. (2014). The benefits of gardening and food growing for health and wellbeing. *Garden Organic and Sustain.*
- Schultz, P.W. Inclusion with nature: The psychology of human-nature relations. In *Psychology of Sustainable Development*; Schmuck, P., Schultz, P.W., Eds.; Springer: Boston, MA, USA. (2002). pp. 61-78.
- Shen, C., Li, X., Li, L., & Were, M. C. (2011). Sensitivity analysis for causal inference using inverse probability weighting. *Biometrical Journal. Biometrische Zeitschrift*, 53(5), 822-837. <https://doi.org/10.1002/bimj.201100042>.
- Sproesser, G., Klusmann, V., Ruby, M. B., Arbit, N., Rozin, P., Schupp, H. T., & Renner, B. (2018). The positive eating scale: relationship with objective health parameters and validity in Germany, the USA and India. *Psychology & health*, 33(3), 313-339.

- Soga, M., Gaston, K., Yamaura, Y. (2017). Gardening is beneficial for health: A meta-analysis, *Preventive Medicine Reports*, Volume 5, Pages 92-99, ISSN 2211-3355, <https://doi.org/10.1016/j.pmedr.2016.11.007>.
- Stanley, I. H., Conwell, Y., Bowen, C., & Van Orden, K. A. (2014). Pet ownership may attenuate loneliness among older adult primary care patients who live alone. *Aging & Mental Health*, 18(3), 394-399.
- Strine, T. W., et al. (2008). "Health-related quality of life and health behaviors by social and emotional support." *Social psychiatry and psychiatric epidemiology* 43(2): 151-159.
- Tomlinson, Alan, Lane, Jack, Julier, Guy, Grigsby Duffy, Lily, Payne, Annette, Mansfield, Louise, Kay, Tess, John, Alistair, Meads, Catherine, Daykin, Norma, Ball, Kerry, Tapson, Christine, Dolan, Paul, Tes-toni, Stefano and Victor, Christina. (2018). A systematic review of the subjective wellbeing outcomes of engaging with visual arts for adults ("working-age", 15-64 years) with diagnosed mental health conditions. Project Report. What Works Centre for Wellbeing, London, UK.
- TOPP, C.W., ØSTERGAARD, S.D., SØNDERGAARD, S., BECH, P. (2015). The WHO-5 Well-Being Index: a systematic review of the literature. *Psychotherapy and Psychosomatics*, 84 (3), pp. 167-176.
- Thomson, L. J., & Chatterjee, H. J. (2022). Heritage, creativity, and wellbeing: Approaches for evaluating the impact of cultural participation using the UCL Museum Wellbeing Measures. In *Archaeology, Heritage, and Wellbeing* (pp. 61-87). Routledge.
- Veenhoven, R. (2008). Measuring the immeasurable: Psychometric modeling of subjective well-being data, M. Eid, RJ Larsen. *The Science of Subjective Well-being*. NY: The Guilford Press.
- VicHealth. (2008). *Ethnic and race-based discrimination as a determinant of mental health and well-being*, Research summary 3, Victorian Health Promotion Foundation.
- UK Office for National Statistics (ONS), released 31 October 2022, ONS website, statistical bulletin, Personal well-being in the UK: April 2021 to March 2022.
- Vlachopoulos, S. P., & Michailidou, S. (2006). Development and initial validation of a measure of autonomy, competence, and relatedness in exercise: The Basic Psychological Needs in Exercise Scale. *Measurement in physical education and exercise science*, 10(3), 179-201.
- WHO (2010). A conceptual framework for action on the social determinants of health.
- WHO. (2012). Risks to mental health: an overview of vulnerabilities and risk factors, background paper by WHO secretariat for the development of a comprehensive mental health action plan.
- Wood, C., Barton, J., Wicks, C. (2022). "The Impact of Therapeutic Community Gardening on the Well-being, Loneliness, and Life Satisfaction of Individuals with Mental Illness" *International Journal of Environmental Research and Public Health* 19, no. 20: 13166. <https://doi.org/10.3390/ijerph192013166>.
- Wood, L., Giles-Corti, B. and Bulsara, M. (2005). "The pet connection: pets as a conduit for social capital?." *Social science & medicine* 61.6: 1159-1173.

LIST OF ANNEXES

- **ANNEX 1** - IHW Indicators

The annex is available on Zenodo at the following link:

<https://zenodo.org/record/4815296#.YK9b9pP6xH0>

- **ANNEX 2** – Context analysis

- **ANNEX 3** – Results of the consultation of local inhabitants and NGOs

- **ANNEX 4** – City specific expected changes and indicators

- **ANNEX 5** – Common indicators on subjective well-being and Covid 19 effects

- **ANNEX 6** – H&W aspects that are sensitive to GDEI personal characteristics based on literature and on the consultation of local NGO's

- **ANNEX 7** – Survey for the GDEI NGOs representatives (en)

The annex is available at the following link:

[D7.1 Annex 8 Survey for GDEI ngos representatives.pdf](#)

ANNEX 2

Context analysis

The selection of the H&W dimensions (social well-being, economic well-being, subjective well-being and healthy lifestyles) e related sub-dimensions also considered the specificity of the four city contexts, the characteristics of the project target groups, including the psycho-social risk factors associated with the local communities.

This analysis was carried out by partner Isimpact in collaboration with partners Tesserae, University of Cordoba, Baltic Study Center, University of Pisa and Slovak University of Agriculture. The context analysis considered data provided by local partners as well as secondary data on the socio economic context derived by past researches, open and administrative data.

CORDOBA	
City context	<p>Cordoba is located in Andalusia, the southernmost autonomous community of continental Spain. The city is also the administrative capital of the province of Cordoba and the eleventh largest city in the country. Eurostat reports that in 2019 the population of Cordoba counted 121 thousand private households for a total population living in private households of 320 thousand inhabitants³⁰.</p> <p>Despite its impressive historical and cultural heritage, the city scores poorly in most of the socio-economic rankings at country level. For 2018, Eurostat estimates the activity rate of residents in Cordoba (i.e., in employment or looking for employment) at 57%. The activity rate is higher among men then among women (64% males vs 50% females). The unemployment rate for the same year was estimated at 28%, about 13 percentage points higher in women than in men (35% female vs 22% males)³¹.</p> <p>The project will focus on the neighbourhood of Las Palmeras, one of the most marginal areas in Spain, whose inhabitants include people from different ethnic groups (including Roma).</p>
Target groups	<p>The overall target group of the impact assessment in Cordoba are adults (18+) residents of Cordoba who live in Las Palmeras or who attend this neighbourhood in a relevant way</p>

³⁰ The City Development Department (2020). The economic profile of the city of Riga, Riga in numbers 2020. Riga City Council. <https://www.riga.lv/en/media/3958/download>

³¹ The Official Statistics of Latvia found that only 46% of residents in Riga consumed fruits at least once a day and 49% consumed vegetables at least once a day. The same source estimated that 34% of residents in Riga could be classified as overweight and 18% as obese. Central Statistical Bureau of Latvia (2014). Official Statistics of Latvia. <https://www.csp.gov.lv/en>

<p>in Cordoba</p>	<p>(at least 4 hours a week). The specific target groups have been selected by the project partners based on the specificity of the solutions on one hand and on the consultation of local representatives of GDEI groups. These specific target groups are:</p> <table border="1"> <tr><td>Young people aged 18 – 30</td></tr> <tr><td>Persons with disabilities</td></tr> <tr><td>Women</td></tr> <tr><td>LGBTQI+ People</td></tr> <tr><td>Elderly aged 65+</td></tr> <tr><td>Ethnic minorities</td></tr> <tr><td>Religious minorities</td></tr> </table>	Young people aged 18 – 30	Persons with disabilities	Women	LGBTQI+ People	Elderly aged 65+	Ethnic minorities	Religious minorities
Young people aged 18 – 30								
Persons with disabilities								
Women								
LGBTQI+ People								
Elderly aged 65+								
Ethnic minorities								
Religious minorities								
<p>Psycho-social risk factors in Cordoba</p>	<p>Local communities are characterised by segregation, discrimination and stigma; high dependence of social subsidies (low rent social housing, social canteens), unstructured families and gender violence; robberies, drug trafficking and raids are common problems. Health and well-being levels are well below the city’s standards. Well-being is limited by the lack of employment, the low quality of social houses, the absence of incomes to satisfy basic needs, the lack of green areas and public spaces and low education standards.</p> <p>Well-being is limited by the lack of employment, the low quality of social houses, the absence of incomes to afford minimum welfare, the lack of green areas and public spaces, the low educational standards and the insecurity and even fear due to the violent behaviour of those involved in illegal activities. People do not have a feeling of belonging nor identity. Collective and community actions are almost non-existent. Disputes between families and clans are rather common and might lead to the reallocation of extended families (up to 12-15 families) in another district³².</p> <p>Being born in the quarter is a stigma that makes many people hide their origins or the place where they live and to leave the neighbourhood once they are better off.</p> <p>The health status is characterised by unhealthy diets and lifestyles. Obesity problems, unwanted pregnancies and drug consumption from early ages are common problems. Local inhabitants consulted³³ during the co-design activities expressed their view of well-being and health to the research partners. The risks factors that emerged from this consultation were:</p> <ul style="list-style-type: none"> - difficulties in having the basics needs covered (a stable source of income, a job, “a roof”, food). This aspect was highlighted as closely related to psychological well-being (the 							

³² Inclusive Transformation Plan of Las Palmeras, IN-HABIT project D1.1, 2022, p. 9.

³³ For more detail on the methods for local inhabitants’ consultation, number and types of persons involved please refer to the next paragraph on co-design of IHW indicators

level of stress), as well as with dignity and social relationships;

- low sense of security, both at home and in the neighbourhood. The safety dimension as well was mentioned as risk factors in relation to psychological well-being (feeling calm, living with tranquillity);
- low quality of the public environment (“silent”, “well kept”, “pleasant and safe for all age groups”) that was connected to personal satisfaction (“feeling good about what surrounds me”) and health. In particular, the lack of a silent environment negatively affected inhabitants’ sleep, good mood and school attendance;
- poor quality of the housing, which implied living in an adequate space (several generations were sharing small rooms with clear negative consequences for personal development), but also having good habits like house cleaning and care;
- loss/absence of healthy habits like regular contact with nature, regular physical activity, good sleep, adequate personal care and hygiene, access to healthy food;
- self stigmatization and equality, feeling valued/loved, having motivation and goals, feeling with equal opportunities: these critical aspects of social/relational and psychological well-being were mentioned in relation to personal growth/academic/career success (wealth , education, employment).

Other psychosocial risk factors and emerged during the work run by Local Community Activator for the establishment of the IN-HUB in Las Palmeras. They are described in D1.1 and summarized below:

- lack of social cohesion and mistrust among neighbours. They are not used to work together nor cooperate. The people living in each patio, and even each block might be an isolated unit;
- low income, unemployment and uncovered basic needs: living from day to day and urgent needs make difficult to think on changes with long-term benefits.
- mistrust in public administration and institutional projects;
- illegal activities that benefit from the isolation and degradation of the neighbourhood and create insecurity.

On the other hand, some positive elements identified by the interviewed inhabitants were: a significant sense of solidarity and belonging within the community (“like a small town”); presence of several associations (7) and service networks to help vulnerable children and families; motivation and willingness to change the neighbourhood (from young people, in particular).

PROJECT SOLUTIONS IN CORDOBA		
CITY TOPIC: CULTURAL HERITAGE		
INNOVATION TYPE (CALL REFERENCE)	VIS CATEGORY	SPECIFIC SOLUTIONS APPLIED AT CITY LEVEL
NATURE BASED INNOVATION	<u>A</u> - Nature based solutions in public spaces	<u>A1</u> . Renovation of public squares and patios with the use of nature based solutions, green shading structures, social garden/orchards
SOCIAL INNOVATION	<u>B</u> - Social, cultural and sports infrastructures in public spaces	<u>B1</u> . Renovation of public squares and patios with sustainable furniture, playgrounds for children, pic nic areas
	<u>C</u> – Mobility and lighting solutions for public spaces	<u>C1</u> . Smart and creative lighting solutions
	<u>D</u> - Training and support for skills and business development	<u>D1</u> . Business/startup support services <u>D2</u> . Training workshops on skills development (gardening, masonry, painting, carpentry, ICT)
	<u>E</u> – Healthy lifestyles workshops, initiatives and events	<u>E1</u> . Healthy diets and sports events and workshops
CULTURAL INNOVATION	<u>F</u> – Cultural and art events and initiatives	<u>F1</u> . Inclusive cultural initiatives, walks and art performances to combat isolation and clash
DIGITAL INNOVATION	G- Digital services to boost health and well-being	<u>G1</u> . Digital games and services through the IN-HABIT-APP supporting healthy lifestyles, socialization and cultural participation

RIGA	
City context	<p>The city of Riga has 632.614 inhabitants, with a prevalence of women (351.056 compared to 281.558 men). The proportion of nationalities in Riga is: 47,1% Latvians, 37,4% Russians, 3,7% Belarusians, 3,4% Ukrainians, 1,8% Poles, 0,8% Lithuanians, 6,8% other nationalities.³⁴</p> <p>This population counts a total of 291.000 private households. Households are composed of an average of 2 persons. Eurostat reports³⁵, for the year 2020, that 44% of households count only one member. The proportion of households with a lone pensioner is 17%, while the proportion of households with a lone parent is 15%. Children aged 0-17 are present in 25% of the households in Riga.</p> <p>Riga historical centre was included on the UNESCO List of Cultural Heritage.</p> <p>The intervention area of IN-HABIT in Riga is Āgenskalns neighbourhood and, more specifically, its market area and surrounding squares and streets.</p> <p>Open since 1898, Agenskalna market is a historical market in Pardaugava and has a status of a national monument of culture. In January 2018 the market was closed because of poor conditions. Since 2018 the city council and project partner Kalnciema Quarter had started a process of renovation of Agenskalna market, which has continued during the Covid emergency, when the market remained open, hosting also outdoor cultural events, like concerts, workshops, discussions, performances etc.</p> <p>Agenskalns market gathers local farmers and street food stalls, develops sustainable ideas and contemporary tendencies, collaborates with creative people, civic activists and businesses from the neighbourhood and beyond.</p> <p>Its renovation contributed to the transformation of the neighbourhood as a whole, who is now perceived as a safe, pleasant and familiar place to live by local inhabitants, who particularly appreciate the quality of social relations, the accessibility of healthy food and cultural life, as well as the quality of green spaces and other public spaces as the market area.</p>
Target groups in Riga	<p>The overall target group of the impact assessment in Cordoba are adults (18+) residents of Riga who live in Āgenskalns neighbourhood OR who attend Āgenskalns for at least 4 hours a week.</p> <p>The specific target groups have been selected by the project partners based on the</p>

³⁴ . Central Statistical Bureau of Latvia (2018) People at risk of poverty and social exclusion in Latvia in 2020, in Latvian. Official Statistics of Latvia <https://stat.gov.lv/en/statistics-themes/population/poverty-and-inequality/publications-and-infographics/10941-people-risk?themeCode=NN>

³⁵ . Eurostat (2022). Data Browser. Online data code: URB_LIVCON. European Commission. <https://ec.europa.eu/eurostat/databrowser/bookmark/343cd400-1177-403c-9fbb-30e076fe1ed0?lang=en>

	<p>specificity of the solutions on one hand and on the consultation of local representatives of GDEI groups. These specific target groups are:</p> <ul style="list-style-type: none"> • Young people aged 18 – 30 • Students • Persons with disabilities • Women • LGBTQI+ People • Elderly aged 65+ • Persons living alone • Ethnic minorities • Religious minorities
<p>Psycho-social risk factors in Riga</p>	<p>While Āgenskalns is well-connected to the city centre, there are limited opportunities for cultural and social life in Āgenskalns itself, particularly for families and young professionals. In addition, the presence of several pawn shops and gambling establishments, and the perception that Āgenskalns is insufficiently safe limits its social desirability. Furthermore, while the local community has been described as cohesive, the influx of students from abroad due to the proximity of Āgenskalns to several university campuses, may be seen as disrupting the social equilibrium. This, in turn, suggests a need for spaces that (i) allow individuals from various different backgrounds to interact without fear of discrimination or discomfort and (ii) are organised around broader considerations related to GDEI.³⁶</p> <p>Local inhabitants consulted³⁷ during the co-design activities expressed their view of well-being and health to the research partners. Local communities are characterise by a variety of ethnic groups and age groups. The social context in the pilot area is characterized by a vital social environment with a good level of social engagement and membership in neighbourhood committees, associations, cultural and environmental movements/organizations.</p> <p>The risks factors that emerged from this consultation of local in-habitants are mainly linked to the consequences of the Covid 19 pandemic and they can be summarized as follows:</p> <ul style="list-style-type: none"> - Higher crime rates and fear of crime among local inhabitants - Loss of income and unemployment especially for students and young people

³⁶ Inclusive Transformation Plan of Āgenskalns market area in Riga, IN-HABIT project D2.1, 2022, p. 6.

³⁷ For more detail on the methods for local inhabitants' consultation, number and types of persons involved please refer to the next paragraph on co-design of IHW indicators

	<ul style="list-style-type: none"> - Uncertainty about the future - Limited opportunities for socialization and communication - Fear of physical contact/presence as a consequence of the social distance measures - Psychological tensions that can result in violence among people and groups.
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PROJECT SOLUTIONS IN RIGA		
CITY TOPIC: FOOD		
INNOVATION TYPE (CALL REFERENCE)	VIS CATEGORY	SPECIFIC SOLUTIONS APPLIED AT CITY LEVEL
NATURE BASED INNOVATION	A- Nature based solutions in public spaces	A1. Renovation of the public square near the market through new green zones
SOCIAL INNOVATION	B- Social, cultural and sports infrastructures in public spaces	B1. New sports facilities, green art installation and playgrounds in the public square near the market
	C – Mobility and lighting solutions for public spaces	C1- New mobility and lighting solutions in the public square near the market
	D- Training and support for skills and business development	D1. Training workshops on cuisine in the community kitchen D2. Business/startup support services
	E – Healthy lifestyles workshops, initiatives and events	E1. Educational/social events on food/cuisine, healthy lifestyles and waste reduction
CULTURAL INNOVATION	F – Cultural and art events and initiatives	
DIGITAL INNOVATION	G- Digital services to boost health and well-being	G1. Online food purchasing system to promote short supply chains and healthy food habits
		G2. Digital games and services provided throughout the INHABIT-APP to support healthy diets, sustainable food production/consumption and recycling practices, as well as physical activity and sports (walking and cycling) in the neighbourhood.

LUCCA

City context	<p>The municipality of Lucca is located in the northern part of Tuscany, between central and northern Italy. The city is also the administrative capital of a province with the same name. As of the 2011 Census, the city counted 87.2 thousand inhabitants. About 12% of the population was 75 years old or older, while only 5% was 6 years old or younger³⁸.</p> <p>Lucca is a relatively wealthy city with an average income of 21.895 Euro. Labour market participation (i.e., employment or looking for employment) in Lucca at the 2011 Census was estimated at 52.7%. Participation was higher for men than for women (60.8% males vs 45.6% females). The prevalence of young persons (15-29) not in education and not in employment was 15.2%. The employment rate was estimated at 48.5%, higher for men than for women (56.8% males vs 41.2% females). Employment rate among the youth (15-29) was estimated at 38.4%. The unemployment rate in Lucca at the time of the last Census was 8% overall, higher for women than for men (9.7% females vs 6.5% males). Youth unemployment was estimated at 29.4%³⁹. Tourism, creativity and cultural tourism are cornerstones in the Lucca economy.</p>
Target groups in Lucca	<p>The overall target group of the impact assessment in Lucca are adults (18+) residents of Lucca who live in the old city center OR who attend in a relevant way (at least 4 hours a week) at least one of the IN-HABIT intervention areas in Lucca.</p> <p>The specific target groups have been selected by the project partners based on the specificity of the solutions on one hand and on the consultation of local representatives of GDEI groups. These specific target groups are:</p> <ul style="list-style-type: none"> • Persons Living alone • Pet owners • Persons with disabilities • Women • LGBTQI+ People • Elderly • Ethnic minorities • Religious minorities

³⁸. ISTAT (2011). Una selezione di indicatori per ogni comune d'Italia. Ottomilacensus ISTAT.

<https://ottomilacensus.istat.it/comune/046/046017/>

³⁹ ISTAT (2011). Una selezione di indicatori per ogni comune d'Italia. Ottomilacensus ISTAT. ,

<https://ottomilacensus.istat.it/sottotema/046/046017/11/>

<p>Psycho-social risk factors in Lucca</p>	<p>The city context Lucca is characterised by the geographic and social separation between those who live inside and those outside the old city walls. The Ageing of the population is contributing to enhancing the geographical divide between the city centre inside the walls, where the aged population live, and the other outside part of the city.</p> <p>Local inhabitants consulted⁴⁰ during the co-design activities expressed their view of well-being and health to the research partners. The risks factors that emerged from this consultation were:</p> <ul style="list-style-type: none"> - the poor quality of social relations (“freedom of movement... possibility to meet others in person, talk to each other not through a screen”) - the quality and quantity of free time - the lack of contact with nature, socialization and relax in the green spaces - the 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”) - the perception of safety in public spaces (“illuminated spaces, living in a place where you feel safe and not exposed to aggression, robbery, ect., ...have the freedom to frequent green areas that are currently not frequented because they are unsafe”). <p>Some risks factors were expressed by local inhabitants in relation to the Covid 19 pandemic crisis, in particular:</p> <ul style="list-style-type: none"> - poor relational well-being, lack of freedom and opportunities for socialization (“habit of free social contact and without mistrust”); - worse economic / financial situation of households.
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⁴⁰ For more detail on the methods for local inhabitants’ consultation, number and types of persons involved please refer to the next paragraph on co-design of IHW indicators

PROJECT SOLUTIONS IN LUCCA		
CITY TOPIC: HUMAN-ANIMAL BONDS		
INNOVATION TYPE (CALL REFERENCE)	VIS CATEGORY	SPECIFIC SOLUTIONS APPLIED AT CITY LEVEL
NATURE BASED INNOVATION	A- Nature based solutions in public spaces	A1. Renovation of under-used green areas and therapy gardens
SOCIAL INNOVATION	B- Social, cultural and sports infrastructures in public spaces	B1. Sports and leisure facilities and infrastructures for both people and animals (Animal lines)
	C – Mobility and lighting solutions for public spaces	C1. Renovation of green corridors with new mobility and lighting solutions
	D- Training and support for skills and business development	D1. Business/startup support services
	E – Healthy lifestyles workshops, initiatives and events	E1. Animal assisted interventions in public spaces, schools and other public services
E2. Hum-animal entertainment and sports events		
E3. Board game for children		
CULTURAL INNOVATION	F – Cultural and art events and initiatives	
DIGITAL INNOVATION	G- Digital services to boost health and well-being	G1. Digital games and services through the INHABIT-APP supporting human-animal entertainment, sports and socialization

NITRA

City context

City of Nitra is the fifth largest city of Slovakia. It is the administrative capital of the Region and the District with the same name. As of the most recently available Census (2011) the population of Nitra counted a total of 28 thousand private households, for a total private population of 77 thousand inhabitants⁴¹.

The economic base of the city is predominantly industrial and has experienced an increase of foreign immigration. Again, at the time of the 2011 Census 59% of residents in Nitra of working age were active on the labour market (i.e., employed or looking for employment). The activity rate was higher for men than for women (65% males vs 53% females). The unemployment rate was reported at 12%, very similar in both female and male residents of the city⁴².

Before the Covid-19 pandemic (2019) the city attracted 179 thousand nights spent in tourist accommodations, about 48 thousand from residents of Slovakia and 28 thousand from non-residents⁴³.

Foreign investments have brought wealth to the city (unemployment rate in Nitra district in 2018 was 2.26%, with net average income 13,116€), but also important challenges linked to health and wellbeing of its inhabitants.

The intervention of the IN-HABIT project focuses on the neighbourhoods that are located along the 8 kilometre-long cycle track that links the Industrial Park and Dražovce district with the main city. This area of intervention involves the residential neighbourhood Dražovce with a sizeable Roma community, industrial park Nitra North with a sizeable community of migrant workers and recreational and cultural spaces along the cyclo road and Nitra river (City Park and Hidepark) frequented by inhabitants from all neighbourhoods of the city. The district of Dražovce is in fact to a large degree disconnected from the main city, having been a separate municipality until 1975. The city is trying to solve the problems of the neighbourhood by promoting alternative modes of transport, mainly bicycle transport.

⁴¹ All the quotes are extracted from the Focus Group Reports as well as from the Storytelling Reports drafted by the local research teams in each city as a result of the qualitative fieldwork research. The full version of these reports is available in Annex 5.

⁴² All the quotes are extracted from the Focus Group Reports as well as from the Storytelling Reports drafted by the local research teams in each city as a result of the qualitative fieldwork research. The full version of these reports is available in Annex 5.

⁴³ All the quotes are extracted from the Focus Group Reports as well as from the Storytelling Reports drafted by the local research teams in each city as a result of the qualitative fieldwork research. The full version of these reports is available in Annex 5.

<p>Target groups in Nitra</p>	<p>The overall target group of the impact assessment in Nitra are adults (18+) residents of Nitra who live in Dražovce neighbourhood OR who attend for at least 4 hours a week one of the IN-HABIT intervention areas in Nitra.</p> <p>The specific target groups have been selected by the project partners based on the specificity of the solutions on one hand and on the consultation of local representatives of GDEI groups. These specific target groups are:</p> <ul style="list-style-type: none"> • Young students aged 18 – 30 • Persons with disabilities • Women • LGBTQI+ People • Elderly aged 65+ • Persons living alone • Ethnic minorities • Migrants • Religious minorities
<p>Psycho-social risk factors in Nitra</p>	<p>The psychosocial context of Nitra is characterised by the following challenges:</p> <ul style="list-style-type: none"> - increased pressure on existing facilities, congestion in the central part of the city, air pollutants, permanent noise and degradation; - Housing and integration for migrant workers represent a great problem and while one of the solutions was to build lodging houses within the industrial park, this led to low living standards and quality of life, isolation (both geographical and socio-economic) and subsequent emergence of a number of socio-pathological behaviours. Negative consequences of this situation are further exacerbated by the fact that the majority of workers in the industrial park are men, who are not followed to Nitra by their families. This contributes significantly to their isolation and difficult integration into the community. - Regarding mobility, although cycling trails are being built, alternative modes of transport are still underused by residents of Nitra and the Dražovce neighbourhood, who consider cycling to be dangerous and ineffective. <p>Local inhabitants consulted⁴⁴ during the co-design activities expressed their view of well-being and health to the research partners. The risks factors that emerged from</p>

⁴⁴ For more detail on the methods for local inhabitants' consultation, number and types of persons involved please refer to the next paragraph on co-design of IHW indicators

	<p>this consultation were:</p> <p>Social relations in relation to culture and public spaces (“vibrant social and community life, existence of “cultural havens”, small venues with specific atmosphere, plethora of cultural events, opportunities to meet inspiring people, ability to socialize with family and friends in public spaces without the need to “buy”)</p> <p>Social cohesion and inclusion, discrimination (“elimination of conflicts with the Roma community, feeling of involvement, tolerance and elimination of negative gender stereotypes”)</p> <p>Sense of safety (mostly female participants were putting emphasis on safety in public space)</p> <p>Healthy lifestyles and contact with nature (“opportunities to spend time in nature, physical activity and sports as a counterweight to a sedentary job and opportunities to switch off. Access to organic food, fresh fruits, vegetables, vegan food and new gastronomic experiences”. Almost half of participants stressed the importance of environment, namely: “wild nature, bird and nature observation, relaxation zones and green spaces, adequate protection of nature and clean environment, inclusion of animals in city life”)</p> <p>Having a peace in the family, good work-life balance</p> <p>Accessibility and inclusiveness of local resources for groups at risk of discrimination and exclusion. Not only architectural accessibility but also access to information and educational, cultural opportunities (language barrier for economic migrants, segregation of Roma schools).</p>
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PROJECT SOLUTIONS IN NITRA		
CITY TOPIC: NATURE		
INNOVATION TYPE (CALL REFERENCE)	VIS CATEGORY	SPECIFIC SOLUTIONS APPLIED AT CITY LEVEL
NATURE BASED INNOVATION	A- Nature based solutions in public spaces	A1. Community and experimental gardens
SOCIAL INNOVATION	B- Social, cultural and sports infrastructures in public spaces	B1. Reversible Multifunctional Open-source Urban Landscape (sustainable furniture for social, cultural and sports practice)

		B2. Community kitchen and DIY café
	C – Mobility and lighting solutions for public spaces	C1. Renovation of green corridors with new mobility and lighting solutions
	D - Training and support for skills and business development	D1. Business/startup support services
		D2. Training courses for urban gardeners
	E – Healthy lifestyles workshops, initiatives and events	E1. Culinary events and educational activities on healthy lifestyles
		E2. Sports and sustainable mobility services (bike and boat rental)
CULTURAL INNOVATION	F – Cultural and art events and initiatives	F1. Cultural initiatives and art performances
		F2. Creative workshops on self-construction of urban furniture
DIGITAL INNOVATION	G - Digital services to boost health and well-being	G1. Digital games and services through the INHABIT-APP supporting healthy lifestyles, socialization and cultural participation

ANNEX 3

Results of the consultation of local inhabitants and NGOs

Cordoba

in Cordoba, a series of individual interviews were run by the local community activators between January and March 2021 involving 24 inhabitants and stakeholders (8 men and 16 women). Among the participants, 16 of them were living in the intervention neighbourhood of Las Palmeras (8 of them were actively involved in different social projects), while 8 of them had been working in the neighbourhood for more than 5 years.

The first discussion point for the interviews was about the most relevant aspects of health and well-being perceived by participants. Participants identified the following key aspects of health and well-being:

- **having the basics needs covered** (a stable source of income, a job, “a roof”, food). This aspect was highlighted as closely related to psychological well-being (the level of stress), as well as with dignity and social relationships;
- **feeling a sense of security**, both at home and in the neighbourhood. The safety dimension as well was mentioned in relation to psychological well-being (feeling calm, living with tranquillity);
- **quality of the public environment** (“silent”, “well kept”, “pleasant and safe for all age groups”) that was connected to personal satisfaction (“feeling good about what surrounds me”) and health. In particular, the lack of a silent environment negatively affected inhabitants’ sleep, good mood and school attendance;
- **quality of the housing**, which implied living in an adequate space (several generations were sharing small rooms with clear negative consequences for personal development), but also having good habits like house cleaning and care;
- **healthy habits** like regular contact with nature, regular physical activity, good sleep, adequate personal care and hygiene, access to healthy food;
- self stigmatization and **equality** and aspects of social/relational and psychological well-being were mentioned like personal growth/academic/career success, feeling valued/loved, having motivation and goals, feeling with equal opportunities (wealth , education, employment).

Participants were asked about the expected changes in terms of health and well-being that may be produced by IN-HABIT VIS in Cordoba. The expected changes were identified for all the inhabitants in general as well as for the main project’s target group in the city.

Cordoba's expected changes on IHW from the perspective of the local inhabitants

Social group	Expected changes – local inhabitants' view
All the groups	<ul style="list-style-type: none"> • Decreased isolation/ghetto effect • Increased employment of people • Increased collective self-esteem • Improved civic engagement and democratic participation • Increased social engagement • Increased sense of safety • Increased practice of sports in public green areas • Improved access to green and recreational spaces • Increased consumption of self grown fruit and vegetables • Improved social relations • Increased sense of inclusion • Improved perception of the neighbourhood
Young people	<ul style="list-style-type: none"> • Improved access to healthy environment • Increased awareness and availability to change one's lifestyles and adopt healthy habits • Improved access to green and recreational spaces • Improved equal access to culture and leisure • Increased practice of healthy leisure / improved quality of leisure
Persons with disabilities	<ul style="list-style-type: none"> • Improved social inclusion • Improved mobility opportunities
Women	<ul style="list-style-type: none"> • Decreased domestic isolation • Increased social relations in public spaces
LGBTQI+ people	<ul style="list-style-type: none"> ▪ Improved social relations
Ethnic and religious minorities	<ul style="list-style-type: none"> • Increased openness towards new values and alternative way of living and thinking

In addition to this, the consultation of the members of those 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 Cordoba, 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 Cordoba, a total of 13 NGOs were consulted representing/working with: ethnic minorities; young people at risk of social exclusion; religious minorities; minors of school age, elderly; families and children.

In particular, the results of question 9⁴⁵ were analysed and taken into account within the bottom-up co-design of the VIS in Cordoba. 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.

According to the participants, the VIS that are more likely to contribute to health and well-being of the some of the groups at risk of discrimination in Cordoba are described in the following table.

Perceived level of contribution of the project solutions to the H&W of groups at risk of discrimination and exclusion in Cordoba

Level of contribution to IHW	Type of VIS
For all the target groups	
High/very high	<ul style="list-style-type: none"> - renovation of public spaces to make them more green, quite and pleasant - provision of job opportunities - provision of training, learning and education opportunities included business support - provision of better access to healthy food or self-grown food
Moderate	<ul style="list-style-type: none"> - renovation of public areas to make them more accessible, safe, well-lit - provision of opportunities for socialization, culture, leisure

⁴⁵ Q9 asked: “With regard to the group of people supported by your organization, consider how much each of these interventions would contribute to increasing their quality of life and their socio-economic well-being on a scale from 0 to 5 where 0=no contribution; 5=very high contribution”

	<ul style="list-style-type: none"> - provision of services (physical and digital) to improve health and healthy habits - provision of digital service to improve access to local opportunities, services, places and events
Low	<ul style="list-style-type: none"> - provision of infrastructures and services for sustainable mobility - provision of opportunities to improve the human-animals relationship
For NGOs members representing ethnic and religious minorities	
High/very high	<ul style="list-style-type: none"> - renovation of public spaces to make them more green, quite and pleasant - provision of services (physical and digital) to improve health and healthy habits - 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 better access to healthy food or self-grown food - provision of opportunities for socialization, culture, leisure - renovation of public areas to make them more accessible, safe, well-lit
Low	<ul style="list-style-type: none"> - provision of opportunities to improve the human-animals relationship
For NGOs members representing young people	
High/very high	<ul style="list-style-type: none"> - Provision of opportunities for socialization, culture, leisure - provision of services (physical and digital) to improve health and healthy habits - 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 - renovation of public spaces to make them more green, quite and pleasant
Low	<ul style="list-style-type: none"> - renovation of public areas to make them more accessible, safe, well-lit - provision of infrastructures and services for sustainable mobility - provision of opportunities to improve the human-animals relationship
For NGOs members representing elderly	

High/very high	<ul style="list-style-type: none"> - 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 - Provision of better access to healthy food or self-grown food
Low	<ul style="list-style-type: none"> - provision of opportunities to improve the human-animals relationship

Riga

in Riga, on 3rd December 2020 an online workshop was run by the BSC research group involving 10 inhabitants (two men and eight women). Among the participants, four were members of local neighbourhood committees and NGOs, two were students, one was member of the city council and one was a private company's representative.

The first discussion point for the interviews was about the most relevant aspects of health and well-being, as perceived by the participants. The participants identified the following key aspects which contribute to their health and well-being:

- Appropriate infrastructure (e.g. dog parks, cycle paths, green infrastructure, children's playground, places to exercise, park benches)
- Pleasant and safe environment (not reducible to infrastructure, e.g. clean air, quiet)
- Public spaces that are available for different uses by local residents
- Public transport that is convenient and safe
- Cultural events (e.g. festivals, outdoor activities for families)
- Educational opportunities for different social and economic groups
- Social security and availability of social services
- Support (financial and otherwise) for local NGOs and small businesses
- Better public understanding of what is important in everyday life
- Opportunities to participate in shaping the future of the neighbourhood
- An active, tolerant and supportive community
- Availability of locally grown food
- Urban gardening
- Opportunities to co-create and express oneself

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 Riga.

The social context in the pilot area is characterized by a vital social environment with a good level of social engagement and membership in neighbourhood committees, associations, cultural and environmental movements/organizations.

The most significant expected changes identified by local inhabitants as possible results of the IN-HABIT solutions are described in the table below. They expressed their opinion on both expected changes for all as well as about specific changes affecting some project target groups and groups at risk of discrimination and exclusion.

Riga's expected changes on IHW from the perspective of the local inhabitants

Social group	Expected changes – local inhabitants view
All groups	<ul style="list-style-type: none"> Improved sense of belonging and satisfaction with the quality of the neighbourhood Increased time spent in social and recreational public spaces Increased perception of benefits from social and recreational public spaces Increased participation in cultural activities within public spaces Increased awareness and motivation about healthy habits Improved quality of one's free time in public spaces Improved accessibility of local resources (healthy food, local products, safe food and high quality products, job opportunities)
Elderly people	<ul style="list-style-type: none"> Reduced isolation Increased social relations in public spaces Increased participation in cultural activities within public spaces
Persons with disabilities	<ul style="list-style-type: none"> Increased employment of people Increased inclusiveness of public squares and green areas
Women	<ul style="list-style-type: none"> No specific gendered expected change was identified
LGBTQI+ people	<ul style="list-style-type: none"> Increased sense of safety Increased inclusiveness of public squares and green areas
Ethnic and religious minorities	<ul style="list-style-type: none"> Increased social relations in public spaces Improved sense of inclusion

In addition to this, the consultation of the members of those 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 Riga, 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 Riga, a total of 7 NGOs were consulted representing/working with: women, ethnic and national minorities; elderly, LGBTIQ+ people; drug addicts and everybody affected by HIV/AIDS.

In particular, the results of question 9⁴⁶ were analysed and taken into account within the bottom-up co-design of the VIS in Riga. 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.

Perceived level of contribution of the project solutions to the H&W of groups at risk of discrimination and exclusion in Riga

Perceived level of contribution to IHW	Type of VIS
For all the target groups	
High/very high	<ul style="list-style-type: none"> - Renovation of public spaces to make them more green, pleasant, quiet - Provision of job opportunities - Provision of training, learning and education opportunities included business support - Provision of opportunities for socialization, culture, leisure - 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
Moderate	<ul style="list-style-type: none"> - Provision of better access to healthy food or self-grown food - Renovation of public areas to make them more accessible, safe, well-lit - Provision of infrastructures and services for sustainable mobility
Low/very low	<ul style="list-style-type: none"> - Provision of opportunities to improve the human-animals relationship

⁴⁶ Q9 asked: "With regard to the group of people supported by your organization, consider how much each of these interventions would contribute to increasing their quality of life and their socio-economic well-being on a scale from 0 to 5 where 0=no contribution; 5=very high contribution"

For NGOs members representing women	
High/very high	<ul style="list-style-type: none"> - Renovation of public areas to make them more accessible, safe, well-lit, - Provision of job opportunities - Provision of training, learning and education opportunities included business support
Moderate	<ul style="list-style-type: none"> - 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
Low/very low	<ul style="list-style-type: none"> - Renovation of public spaces to make them more green, pleasant, quiet - Provision of opportunities for socialization, culture, leisure - Provision of better access to healthy food or self-grown food - Provision of opportunities to improve the human-animals relationship
For NGOs members representing ethnic or national minorities	
High/very high	<ul style="list-style-type: none"> - Provision of job opportunities - Provision of training, learning and education opportunities included business support - 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 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	<ul style="list-style-type: none"> - Renovation of public spaces to make them more green, pleasant, quiet - Provision of better access to healthy food or self-grown food - Renovation of public areas to make them more accessible, safe, well-lit, - Provision of opportunities for socialization, culture, leisure - Provision of services (physical and digital) to improve health and healthy habits (diet, physical activity ...)

	<ul style="list-style-type: none"> - Provision of digital service to improve access to local opportunities, services, places and events - Provision of infrastructures and services for sustainable mobility
Moderate	<ul style="list-style-type: none"> - Provision of opportunities to improve the human-animals relationship - Provision of job opportunities
Low/very low	<ul style="list-style-type: none"> - Provision of training, learning and education opportunities included business support
For NGOs members representing LGBTIQ+ people	
High/very high	<ul style="list-style-type: none"> - Provision of opportunities for socialization, culture, leisure - Provision of job opportunities
Moderate	<ul style="list-style-type: none"> - Provision of training, learning and education opportunities included business support - Renovation of public areas to make them more accessible, safe
Low/very low	<ul style="list-style-type: none"> - 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 - Renovation of public spaces to make them more green, pleasant, quiet - Provision of opportunities to improve the human-animals relationship (very low contribution) - to healthy food or self-grown food

Lucca

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 neighbourhood 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 who participated in the workshop 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, ect., ...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 specific changes affecting some project target groups and 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.

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 the table below.

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

Social group	Expected changes – local inhabitants' view
All groups	<ul style="list-style-type: none"> • 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
Elderly people	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Improved satisfaction with urban green areas • improved access to green and recreational spaces;
Women	<ul style="list-style-type: none"> - Increased sense of safety - Improved access to green and recreational spaces - Increased practice of sports in public green areas
LGBTQI+ people	<ul style="list-style-type: none"> - No specific change has been identified which may affect people based on their gender identity and sexual orientation
Ethnic and religious minorities	<ul style="list-style-type: none"> - 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

In addition to this, the consultation of the members of those 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.

In particular, the results of question 9⁴⁷ were analysed 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.

Perceived level of contribution of the project solutions to the H&W of groups at risk of discrimination and exclusion in Lucca

Level of contribution to IHW	Type of VIS
For all the target groups	
High/very high	<ul style="list-style-type: none"> .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

⁴⁷ Q9 asked: “With regard to the group of people supported by your organization, consider how much each of these interventions would contribute to increasing their quality of life and their socio-economic well-being on a scale from 0 to 5 where 0=no contribution; 5=very high contribution”

	.Provision of better access to healthy food or self-grown food
For NGOs members representing women	
High/very high	<ul style="list-style-type: none"> .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	<ul style="list-style-type: none"> .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 elderly	
High/very high	<ul style="list-style-type: none"> .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)

	<ul style="list-style-type: none"> .Provision of opportunities to improve the human-animals relationship .Provision of better access to healthy food or self-grown food
Low/very low	<ul style="list-style-type: none"> .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	<ul style="list-style-type: none"> .Provision of opportunities for socialization, culture, leisure .Provision of job opportunities .Provision of training, learning and education opportunities included business support .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	<ul style="list-style-type: none"> .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	<ul style="list-style-type: none"> .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	<ul style="list-style-type: none"> .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

Nitra

In Nitra, In December 2020, three workshops (two online and one in person) were run by SUA research group involving 12 inhabitants (3 males and 9 females).

Among the participants, 6 of them identified themselves as members of groups at risk of discrimination and exclusion by ethnic origin and 2 of them by religion. Among the participants, 7 were members of local neighbourhood committees and NGOs, while 3 were representatives of local private companies.

The first discussion point of the workshop was about the most relevant aspects of health and well-being perceived by the participants. The inhabitants of Nitra who participated in the workshop have identified the following key aspects which contribute to their health and well-being:

- Social relations in relation to culture and public spaces (“vibrant social and community life, existence of “cultural havens”, small venues with specific atmosphere, plethora of cultural events, opportunities to meet inspiring people, ability to socialize with family and friends in public spaces without the need to “buy”)
- Social cohesion and inclusion, discrimination (“elimination of conflicts with the Roma community, feeling of involvement, tolerance and elimination of negative gender stereotypes”)
- Sense of safety (mostly female participants were putting emphasis on safety in public space)
- Healthy lifestyles and contact with nature (“opportunities to spend time in nature, physical activity and sports as a counterweight to a sedentary job and opportunities to switch off. Access to organic food, fresh fruits, vegetables, vegan food and new gastronomic experiences”. Almost half of participants stressed the importance of environment, namely: “wild nature, bird and nature observation, relaxation zones and green spaces, adequate protection of nature and clean environment, inclusion of animals in city life”)
- Having a peace in the family, good work-life balance
- Accessibility and inclusiveness of local resources for groups at risk of discrimination and exclusion. Not only architectural accessibility but also access to information and educational, cultural opportunities (language barrier for economic migrants, segregation of Roma schools).
- 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 Nitra.
- They expressed their opinion on both expected changes for all as well as about specific changes affecting some project target groups and groups at risk of discrimination and exclusion at local level.
- Compared to the partners’ view, the inhabitants’ perspective showed consistency and correspondence in terms of expected changes. The inhabitants participating in the co-design workshops stressed the importance of the quality of the leisure and free time, the contact with nature and the accessibility of local cultural and sports facilities and services. In particular, the following additional expected changes emerged from the inhabitants’ consultation: “increased perception of benefits from urban nature “, “improved practice of healthy leisure”. “Improved quality of one’s free time”.

The most significant expected changes identified by the participants as possible results of the IN-HABIT solutions in Nitra are described in the table below.

Participants were asked about the expected changes in terms of health and well-being that may be produced by IN-HABIT VIS in Nitra. The expected changes were identified for all the inhabitants in general as well as for the main project's target group in the city.

Nitra's expected changes on IHW from the perspective of the local inhabitants

Social group	Expected changes - inhabitants view
All the groups	<ul style="list-style-type: none"> • Increased social relations in public spaces • Increased sense of safety • Improved satisfaction with urban green areas • Improved access to green and recreational spaces • Increased inclusiveness of public squares and green areas • Improved sense of belonging and satisfaction with the quality of the neighbourhood • Improved satisfaction with sports facilities • Increased practice of sports in public green areas • Increased perception of benefits from sports • Increased time spent playing relaxing or doing sports in public green areas • Increased satisfaction with free time use • Increased perception of benefits from urban nature • Improved accessibility of local resources (particularly green areas, cultural and sports facilities) • Improved equal access to culture and leisure • Improved sense of belonging and satisfaction with the quality of the neighbourhood • Increased employment of people
Elderly people	<ul style="list-style-type: none"> • increased access to green and recreational spaces • Improved social engagement (increase participation in community activities , feeling of being needed) • Healthier lifestyle
Persons with disabilities	<ul style="list-style-type: none"> • Improved inclusiveness of public squares and green areas • Improved accessibility of local resources • Improved access to green and recreational spaces

	<ul style="list-style-type: none"> • Improved healthy leisure time • Increased practice of physical activity
Women	<ul style="list-style-type: none"> • Improved social relations in public spaces • Increased sense of safety
LGBTIQ+	<ul style="list-style-type: none"> • No specific changes have been identified for this target group
Ethnic and religious minorities	<p>For the Roma community:</p> <ul style="list-style-type: none"> • Improved sense of belonging (“identification with the city”) • Improved sense of inclusion (“sense of being needed), opportunities for self-realisation and socialisation with other communities) • Improved accessibility of local resources (in particular training, new low entry educational activities) <p>For the community of economic migrants:</p> <ul style="list-style-type: none"> • Improved sense of belonging (“identification with the city”) • Decreased level of perceived discrimination in society, improved sense of inclusion, increased social engagement (“get to know a group of open people without prejudices, who are interested in their opinion, can make friends and be an active member of society) • Increased time devoted to leisure and personal care, improved quality of one’s free time, improved practice of healthy leisure (break the “work-shop-home” cycle, access to education and cultural exchange activities) • Increased satisfaction with one’ skills and competences (“increased proficiency in Slovak language is one of the greatest necessities in terms of equal access”)

In addition to this, the consultation of the members of those 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 Nitra, 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 Nitra, a total of 9 NGOs were consulted representing/working with: women; ethnic or national minorities; elderly; persons with disabilities; homeless, drugs addicted

In particular, the results of question 9⁴⁸ were analysed and taken into account within the bottom-up co-design of the VIS in Nitra. 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.

Perceived level of contribution of the project solutions to the H&W of groups at risk of discrimination and exclusion in Nitra

Level of contribution to IHW	Type of VIS
For all the target groups	
High/very high	<ul style="list-style-type: none"> • 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 digital service to improve access to local opportunities, services, places and events • Provision of infrastructures and services for sustainable mobility • Provision of training, learning and education opportunities included business support • Renovation of public areas to make them more accessible, safe, well-lit
Moderate	<ul style="list-style-type: none"> • Renovation of public spaces to make them more green, pleasant, quiet • Provision of better access to healthy food or self-grown food
Low/very low	<ul style="list-style-type: none"> • Provision of opportunities to improve the human-animals relationship
For NGOs members representing women	
High/very high	<ul style="list-style-type: none"> • Provision of job opportunities • Renovation of public areas to make them more accessible, safe, well-lit • Provision of digital service to improve access to local opportunities, services,

⁴⁸ Q9 asked: “With regard to the group of people supported by your organization, consider how much each of these interventions would contribute to increasing their quality of life and their socio-economic well-being on a scale from 0 to 5 where 0=no contribution; 5=very high contribution”

	<p>places and events</p> <ul style="list-style-type: none"> • Provision of infrastructures and services for sustainable mobility • 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 training, learning and education opportunities included business support
Moderate	<ul style="list-style-type: none"> • Provision of better access to healthy food or self-grown food
Low/very low	<ul style="list-style-type: none"> • Provision of opportunities to improve the human-animals relationship
For NGOs members representing ethnic or national minorities	
High/very high	<ul style="list-style-type: none"> • Provision of opportunities for socialization, culture, leisure • 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 job opportunities • Renovation of public areas to make them more accessible, safe, well-lit
Low/very low	<ul style="list-style-type: none"> • 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 better access to healthy food or self-grown food • Provision of opportunities to improve the human-animals relationship
For NGOs members representing elderly	
High/very high	<ul style="list-style-type: none"> • 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 infrastructures and services for sustainable mobility
Moderate	<ul style="list-style-type: none"> • Provision of opportunities to improve the human-animals relationship • Provision of better access to healthy food or self-grown food
Low/very low	<ul style="list-style-type: none"> • Provision of digital service to improve access to local opportunities, services,

	<p>places and events</p> <ul style="list-style-type: none"> • Provision of job opportunities • Provision of training, learning and education opportunities included business support
For NGOs members representing people with disability	
High/very high	<ul style="list-style-type: none"> • 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 infrastructures and services for sustainable mobility • Provision of better access to healthy food or self-grown food • Provision of digital service to improve access to local opportunities, services, places and events • 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
For NGOs members representing asylum seekers	
High/very high	<ul style="list-style-type: none"> • 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 digital service to improve access to local opportunities, services, places and events • Provision of job opportunities • 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 • Provision of infrastructures and services for sustainable mobility
Moderate	<ul style="list-style-type: none"> • Provision of opportunities to improve the human-animals relationship • Provision of better access to healthy food or self-grown food

ANNEX 4

City specific expected changes and indicators

Cordoba IHW Indicators

The selection of the city-specific IHW indicators for Cordoba shows the following characteristics:

a. the specificity of the target groups and of the neighbourhood of intervention has produced a focus on some sub-dimensions of health and well-being, with specific regard to subjective indicators of social network and institutional support, poverty, social inclusion and equality, perceived safety and quality of the environment, as well as healthy diets and practice of physical activity;

b. the extreme vulnerability of the social context with respect to the rest of the city has been made worse by the health and economic crisis caused by the Covid 19 pandemic.

In light of this, a wider range of qualitative indicators on equal opportunities, social cohesion and employment have been included in this pilot to be measured through interviews and group discussions to better isolate the effects of the Covid 19 one one hand and those of the IN-HABIT solutions on the other hand.

c. some indicators have been specifically designed after the consultation of the inhabitants and partners in Cordoba, namely: “awareness and motivation towards healthy habits”, “Practice of healthy leisure”, “domestic isolation”, “openness to diversity”.

The selected indicators on socio-economic well-being, spatial-environmental well-being and healthy lifestyles for the pilot of Cordoba are listed in the following tables.

Social well-being indicators for Cordoba

IHW Indicators to measure social well-being in Cordoba (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Social cohesion	Improved social relations (I)	Satisfaction with personal relationships in the neighbourhood	Persons who declare a good/very good level of satisfaction with personal relationships in the neighbourhood/living area (quantitative/self reported/Key Impact Indicator)

	Increased trust among people (P)	Trust in others	persons who declare a good/very good level of trust in other persons within their community (qualitative/self reported/Key Impact Indicator)
	Improved social network support (P)	Social network support	Persons who rely on getting help from services organized by associations, neighbourhood committees, groups of inhabitants (including visiting services) (quantitative and qualitative/self reported /Key Impact Indicator)
Social Inclusion	Increased social relations in public spaces (P;I)	Contact with others in public spaces	Persons who get together with friends and relatives in public spaces once a week (quantitative/self reported/Key Impact Indicator)
		Domestic Isolation	Persons who spend the majority of their time alone at home (qualitative/self reported/Key impact indicator)
	Improved sense of inclusion (P;C)	Sense of inclusion	persons who feel to be part of the community (quantitative and qualitative/self reported/Key Impact Indicator)
	Improved civil engagement and democratic participation (I)	Civil engagement 1	Persons who declare to take part to democratic life at city level (neighbourhood committees, municipal or school councils, election committees, political parties) (quantitative/self reported/Key Impact Indicator)
		Civil engagement 2	Persons who believe they can influence local policies/political decisions (qualitative/self reported/Key Impact Indicator)
	Improved social engagement (P;I)	Social engagement 1	Persons who declare to participate in voluntary activities (social, cultural, educational, religious) (quantitative/self reported/Key Impact Indicator)
		Social engagement 2	Persons who are satisfied with their level of involvement in the local community life qualitative/self reported/Key Impact Indicator
		Social engagement 3	People who are committed to take care of public spaces and green areas in their neighbourhood (qualitative and quantitative/self reported/Key Impact Indicator)
	Improved openness to diversity (I)	Openness to diversity	Persons who are open towards new values and alternative way of living and thinking (qualitative/self reported/key impact indicator)
	Increased change-making attitude (P;I)	Change-making attitude	Persons who believe they can change the reality of their neighbourhood (social situation, beauty/attractiveness of the space, economic situation)
Equality	No change expected - context indicator (P)	Sense of being treated equally	Persons who feel they are treated with less courtesy and respect than others (or other groups) (qualitative/self reported/Context indicator)

	No change expected - context indicator (P)	Access to internet from home	Persons who have access to internet from home (quantitative/self reported/Context Indicator)
	Improved equal access to culture and leisure (P)	Equal access to culture and leisure	Persons who believe to have the same opportunity than others to access the available cultural and leisure opportunities in their city/neighbourhood (qualitative/self reported/Key Impact Indicator)
	No change expected - context indicator (P)	Obstacles for the access to culture and leisure	Persons who think to have economic, time, family, mobility, cognitive, cultural obstacles in the access to culture and leisure opportunities in their City/neighbourhood (quantitative and qualitative/self reported /context Indicator)
	No change expected - context indicator (P)	Obstacles for the access to social care services and health services	Persons who think to have economic, time, family, mobility, cognitive, linguistic/cultural, social obstacles in the access to social care and health services in their city/neighbourhood (qualitative/self reported /context Indicator)
	No change expected - context indicator (P)	Obstacles for the access to training opportunities	Persons who think to have economic, time, family, mobility, cognitive, linguistic/cultural, social obstacles in the access to training opportunities in their city (qualitative and quantitative/self reported /context Indicator)
Discrimination	No change expected - context indicator (P)	Perception of discrimination in society	Persons who believe that minority groups are considered dangerous/dishonest/ criminals/ unreliable/ bad neighbours by local inhabitants (qualitative/self reported /context Indicator)
	No change expected - context indicator (P)	Perceived personal condition of discrimination	Persons who can describe themselves as being a member of a group that is discriminated against in their country. (quantitative/self reported /context Indicator)
	increased collective self-esteem (I)	Collective self-esteem	Persons who feel proud of thier community, feel a sense of self-esteem as a community (qualitative self reported/key impact indicator)

Spatial-environmental well-being indicators for Cordoba

IHW Indicators to measure spatial-environmental well-being in Cordoba (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Perception of security	Increased sense of safety (I)	sense of safety at night	Persons who feel safe walking at night in the city (quantitative/self reported/Key Impact Indicator)
		sense of safety in green areas	Persons who feel safe to walk in the public green areas of their neighbourhood (quantitative/self reported/Key Impact Indicator)
		perception of crime, violence or vandalism in the living area	Average level of crime, violence and vandalism in the neighbourhood perceived by persons on a range from 1-10 (quantitative/self reported/Key Impact Indicator)
Spatial well-being	Improved accessibility of local resources (P)	Accessibility of local resources	Persons who think in their neighbourhood is easy to find help from others; find job opportunities; training opportunities; find safe, pleasant and accessible green areas, participate in cultural events; find adequate social and health assistance, find a place to do sports, find healthy food, find children playgrounds, moving on foot, moving by bike (qualitative and quantitative /self reported /Key Impact Indicator)
	Improved satisfaction with urban green areas (P;I)	Satisfaction with urban green areas	Persons who are satisfied with public green areas of their neighbourhood in terms of accessibility, safety, inclusiveness, beauty, comfort (quantitative/self reported / Key impact indicator)
	Increased inclusiveness of public squares and green areas (P)	Inclusiveness of public squares and green areas	Persons who feel free to access, to use and to move within the public squares and green areas in their neighbourhood (quantitative and qualitative/self reported /Key Impact Indicator)
	Improved air quality perception (P)	Air pollution perception	Persons who think that the quality of air in their neighbourhood is satisfactory/good (quantitative/self reported / Key impact indicator)
	Improved sense of belonging and satisfaction with the quality of the neighbourhood (P;I)	Sense of belonging and perception of the neighbourhood	Number of persons who like their neighbourhood; who think that it has a good reputation; who think that the image of the neighbourhood has improved in the past two years; who think it could attract more tourists in the next years; who would not move to another neighbourhood (qualitative and quantitative /self reported /Key Impact Indicator)

Healthy lifestyles indicators for Cordoba

IHW Indicators to measure healthy lifestyles in Cordoba (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Physical health status	No change expected - context indicator (P)	Self-reported health status	Average level of physical health reported by persons on a 5 points scales (quantitative/self reported / context indicator)
Determinants of health	No change expected - context indicator (P)	Practice of physical activity	Frequency of practice of physical activity in a week (quantitative /self reported / context indicator)
	No change expected - context indicator (P)	Time spent on food preparation at home	Average time spent by persons preparing their meals at home in a day (quantitative/self reported / context indicator)
	Increased consumption of self-grown fruit and vegetables	Self-grown fruit and vegetables consumption	Persons who declare to consume self-grown fruit and vegetables (qualitative/self reported /Key Impact Indicator)
	No change expected - context indicator (P)	Consumption of fruits and vegetables	Persons who declare to consume fresh fruits and vegetables on a daily basis (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Access to healthy and nutritious food	Persons who were unable to eat healthy and nutritious food in the last week (quantitative/self reported / context indicator)
	Increased awareness and motivation towards healthy habits (I)	Awareness and motivation towards healthy habits	Persons who are aware about healthy habits and motivated to change their lifestyles (qualitative/self reported/ Key Impact Indicator)
Sports practice	Increased practice of sports in public green areas (P;C)	Practice of sports in public green areas	Frequency of use of the public outdoor/green areas to do sports in a week (quantitative and qualitative/self reported / Key impact indicator)
	Increased perception of benefits from sports (P)	Benefits from sports	Persons who think that sports/physical activity contributes to their well-being (qualitative/self reported /Key impact indicator)
Cultural consumption and production	Increased satisfaction with cultural facilities (P)	Satisfaction with cultural facilities	Persons who are satisfied with the cultural places/events and opportunities in their neighbourhood (quantitative/self reported / Key impact indicator)

	Increased participation in cultural activities within public spaces (P)	Participation in cultural activities within public spaces (out-door/indoor)	Frequency of participation in cultural activities/consumptions in public squares, green areas, centers of their neighbourhood in a week (quantitative/self reported / Key impact indicator)
	Increased perception of benefits from culture (P)	Benefits from culture	Persons who think that cultural activity contributes to their well-being (qualitative/self reported /Key impact indicator)
	No change expected - context indicator (P)	Cultural consumptions	Average time devoted to cultural consumptions during the week (theatre, reading books, cinema, exhibitions) (quantitative/self reported/context indicator)
	Increased local cultural engagement (P)	Local cultural engagement	Persons directly involved in the organization, production and management of cultural activities, products, places and events in their neighbourhood (quantitative self reported/ key impact indicator)
Leisure/Free time	No change expected - context indicator (P)	Time devoted to leisure and personal care	Average time (hours) devoted to leisure and personal care in a typical working day (quantitative/self reported / context indicator)
	increased practice of healthy leisure (I)	Practice of healthy leisure	People who practice healthy behaviours for leisure /avoid unhealthy leisure (qualitative /self reported /Key Impact Indicator)
	Increased time spent playing relaxing or doing sports in public green areas (P)	time spent playing, relaxing or doing sports in public green areas	Average time (hours) spent playing, relaxing or doing sports in public green areas in a day (quantitative/self reported / Key impact indicator)
	Increased time spent in social and recreational public spaces (P)	time spent in social and recreational public spaces	Average time spent in social and recreational public spaces in a day (quantitative/self reported / Key impact indicator)
	No change expected - context indicator (P)	Time devoted to family care	Average time in a day devoted to family care (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Time devoted to pets' care/playing with pets	Average time devoted to pets' care/playing with pets in a day (quantitative/self reported / context indicator)

	No change expected - context indicator (P)	Satisfaction with free time use	Persons who are satisfied with the quality of their free time/the way they spend their free time (quantitative/self reported / context indicator)
	Increased perception of benefits from social and recreational public spaces (P)	Benefits from social and recreational public spaces	Persons who think that social and recreational public spaces contribute to their well-being (qualitative self reported/key impact indicator)

Economic well-being indicators for Cordoba

IHW Indicators to measure economic well-being in Cordoba (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Employment	Increased employment of people (P)	Opportunity to find a job in the city	persons who are satisfied with the opportunities offered by the job market at city level (qualitative/self reported/key impact indicator)
		Expected sector of occupation	persons who think they can find a job in NBS related sector in the next 6 months (qualitative/self reported/key impact indicator)
	Increased satisfaction with one's skills and competences (P)	Satisfaction with one's own competencies, skills 1	persons who are satisfied with their level of skills and competences (qualitative/self reported/key impact indicator)
		Satisfaction with one's own competencies, skills 2	Persons who think that their education, skills and competences will be helpful to find a paid job in the city (qualitative/self reported/key impact indicator)
Financial situation	No change expected - context indicator (P)	Feeling that one's basic needs are met	persons who believe that their basic needs are sufficiently met (quantitative/self reported /context indicator)
	No change expected - context indicator (P)	Satisfaction with time and resources for personal care	number of persons who think to have sufficient resources to manage personal matters/personal care
	Increased satisfaction with one's surroundings and living environment (P;I)	Satisfaction with one's surroundings/living environment	satisfaction related to one's own surroundings/living environment (qualitative/self reported /Key impact indicator)
	No change expected - context indicator (P)	Satisfactions with one's own financial situation	Average level of satisfaction related to one's own family or individual income and resources (quantitative/self reported /context indicator)

Riga IHW Indicators

The selection of IHW Indicators for the pilot of Riga show some specific characteristics:

- the most relevant sub-dimensions of health and well-being for the Riga's context are those related to spatial well-being, social inclusion, healthy lifestyles and spatial well-being. All the indicators that help identifying the link between well-being and the quality of the urban space have been defined as important for the impact assessment of the solutions in Riga as well as those related to changes on people's healthy habits and lifestyles;
- the centrality of food as the main topic of the solution is reflected in the focus on healthy habits and consumptions of the proposed impact assessment framework;
- regarding the dimension of social well-being, the aspects of social cohesion, discrimination and equality are not perceived as possible areas of change due to the Riga's VISs. On the other hand, social inclusion has been discussed and marked as an expected impact area, with reference to the improvement of social relations in public areas as well as higher social engagement and change-making attitude;
- some sub-dimensions and indicators have been specifically suggested by inhabitants. For instance, "perception of security" has been marked relevant by inhabitants with specific regard to groups at risk of discrimination and exclusion, particularly LGBTIQ+ people; inhabitants have also stressed the effects on employment, in relation to the possible effects on persons with disabilities;
- some indicators have been specifically designed after the consultation of the inhabitants and partners in Riga, namely: "awareness and motivation towards healthy habits", "perceived quality of free time in public spaces".

The selected indicators on socio-economic well-being, spatial-environmental well-being and healthy lifestyles for the pilot of Riga are listed in the following tables

Social well-being indicators for Riga

IHW Indicators to measure social well-being in Riga (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Social Inclusion	Increased social relations in public spaces (P;I)	Contact with others in public spaces	Persons who get together with friends and relatives in public spaces once a week (quantitative/self reported/Key Impact Indicator)
		Domestic	Persons who spend the majority of their time alone at home

		Isolation	(qualitative/self reported/Key impact indicator)
	Improved sense of inclusion (P;l)	Sense of inclusion	Persons who feel to be part of the community (quantitative and qualitative/self reported/Key Impact Indicator)
	Improved social engagement (P)	Social engagement 1	Persons who declare to participate in voluntary activities (social, cultural, educational, religious) (quantitative/self reported/Key Impact Indicator)
		Social engagement 2	Persons who are satisfied with their level of involvement in the local community life (qualitative/self reported/Key Impact Indicator)
		Social engagement 3	People who are committed to take care of public spaces and green areas in their neighbourhood (qualitative and quantitative/self reported/Key Impact Indicator)
	Increased change-making attitude (P)	Change-making attitude	Persons who believe they can change the reality of their neighbourhood (social situation, beauty/attractiveness of the space, economic situation) (qualitative/self reported/Key Impact Indicator)
Equality	No change expected - context indicator (P)	Sense of being treated equally	Persons who feel they are treated with less courtesy and respect than others (or other groups) (qualitative/self reported/Context indicator)
	No change expected - context indicator (P)	Access to internet from home	Persons who have access to internet from home (quantitative/self reported/Context Indicator)
	No change expected - context indicator (P)	Obstacles for the access to culture and leisure	Persons who think to have economic, time, family, mobility, cognitive, cultural obstacles in the access to culture and leisure opportunities in their City/neighbourhood (quantitative and qualitative/self reported /context Indicator)
	No change expected - context indicator (P)	Obstacles for the access to training opportunities	Persons who think to have economic, time, family, mobility, cognitive, linguistic/cultural, social obstacles in the access to training opportunities in their city (qualitative and quantitative/self reported /context Indicator)

Discrimination	No change expected - context indicator (P)	Perception of discrimination in society	Persons who believe that minority groups are considered dangerous/dishonest/ criminals/ unreliable/ bad neighbours by local inhabitants (qualitative/self reported /context Indicator)
	No change expected - context indicator (P)	Perceived personal condition of discrimination	Persons who can describe themselves as being a member of a group that is discriminated against in their country. (quantitative/self reported /context Indicator)

Spatial-environmental well-being indicators for Riga

IHW Indicators to measure spatial-environmental well-being in Riga (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Perception of security	Increased sense of safety (I)	sense of safety at night	Persons who feel safe walking at night in the city (quantitative/self reported/Key Impact Indicator)
		Fear of road accidents	Persons who express fear to be victim of road accidents when walking or cycling in the street of their neighbourhood (quantitative/self reported/Key Impact Indicator)
		sense of safety in green areas	Persons who feel safe to walk in the public green areas of their neighbourhood (quantitative/self reported/Key Impact Indicator)
		perception of crime, violence or vandalism in the living area	Average level of crime, violence and vandalism in the neighbourhood perceived by persons on a range from 1-10 (quantitative/self reported/Key Impact Indicator)
Spatial well-being	Improved accessibility of local resources (P;I)	Accessibility of local resources	Persons who think in their neighbourhood is easy to find help from others; find job opportunities; training opportunities; find safe, pleasant and accessible green areas, participate in cultural events; find adequate social and health assistance, find a place to do sports, find healthy food, find children playgrounds, moving on foot, moving by bike (qualitative and quantitative /self reported /Key Impact Indicator)

	Improved satisfaction with urban green areas (P)	Satisfaction with urban green areas	Persons who are satisfied with public green areas of their neighbourhood in terms of accessibility, safety, inclusiveness, beauty, comfort (quantitative/self reported / Key impact indicator)
	Increased inclusiveness of public squares and green areas (P;I)	Inclusiveness of public squares and green areas	Persons who feel free to access, to use and to move within the public squares and green areas in their neighbourhood (quantitative and qualitative/self reported /Key Impact Indicator)
	Improved sense of belonging and satisfaction with the quality of the neighbourhood (P;I)	Sense of belonging and perception of the neighbourhood	Number of persons who like their neighbourhood; who think that it has a good reputation; who think that the image of the neighbourhood has improved in the past two years; who think it could attract more tourists in the next years; who would not move to another neighbourhood (qualitative and quantitative /self reported /Key Impact Indicator)

Healthy lifestyles indicators for Riga

IHW Indicators to measure healthy lifestyles in Riga (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Physical health status	No change expected - context indicator (P)	Self-reported health status	Average level of physical health reported by persons on a 5 points scales (quantitative/self reported / context indicator)
Determinants of health	No change expected - context indicator (P)	Practice of physical activity	Frequency of practice of physical activity in a week (quantitative /self reported / context indicator)
	No change expected - context indicator (P)	Time spent on food preparation at home	Average time spent by persons preparing their meals at home in a day (quantitative/self reported / context indicator)
	Increased consumption of self-grown fruit and vegetables	Self-grown fruit and vegetables consumption	Persons who declare to consume self-grown fruit and vegetables (qualitative/self reported /Key Impact Indicator)

	No change expected - context indicator (P)	Consumption of fruits and vegetables	Persons who declare to consume fresh fruits and vegetables on a daily basis (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Access to healthy and nutritious food	Persons who were unable to eat healthy and nutritious food in the last week (quantitative/self reported / context indicator)
	Increased awareness and motivation towards healthy habits (P;I)	Awareness and motivation towards healthy habits	Persons who are aware about healthy habits and motivated to change their lifestyles (qualitative/self reported/ Key Impact Indicator)
Sports practice	Increased practice of sports in public green areas (P)	Practice of sports in public green areas	Frequency of use of the public outdoor/green areas to do sports in a week (quantitative and qualitative/self reported / Key impact indicator)
	Increased perception of benefits from sports (P)	Benefits from sports	Persons who think that sports/physical activity contributes to their well-being (qualitative/self reported /Key impact indicator)
Cultural consumption and production	Increased participation in cultural activities within public spaces (P;I)	Participation in cultural activities within public spaces (outdoor/indoor)	Frequency of participation in cultural activities/consumptions in public squares, green areas, centers of their neighbourhood in a week (quantitative/self reported / Key impact indicator)
	No change expected - context indicator (P)	Cultural consumptions	average time devoted to cultural consumptions during the week (theatre, reading books, cinema, exhibitions) (quantitative/self reported/context indicator)
	Increased local cultural engagement (P)	Local cultural engagement	Persons directly involved in the organization, production and management of cultural activities, products, places and events in their neighbourhood (quantitative self reported/ key impact indicator)
Leisure/Free time	No change expected - context indicator (P)	Time devoted to leisure and personal care	Average time (hours) devoted to leisure and personal care in a typical working day (quantitative/self reported / context indicator)
	Increased time spent playing relaxing or doing sports in public green areas (P)	Time spent playing, relaxing or doing sports in public green areas	Average time (hours) spent playing, relaxing or doing sports in public green areas in a day (quantitative/self reported / Key impact indicator)

	Increased time spent in social and recreational public spaces (P)	Time spent in social and recreational public spaces	Average time spent in social and recreational public spaces in a day (quantitative/self reported / Key impact indicator)
	No change expected - context indicator (P)	Time devoted to family care	Average time in a day devoted to family care (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Time devoted to pets' care/playing with pets	Average time devoted to pets' care/playing with pets in a day (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Satisfaction with free time use	Persons who are satisfied with the quality of their free time/the way they spend their free time (quantitative/self reported / context indicator)
	Improved quality of one's free time in public spaces (I)	Perceived quality of free time in public spaces	Persons who think that the quality of their free time in public spaces is satisfactory (qualitative self reported/key impact indicator)
	Increased perception of benefits from social and recreational public spaces (P;I)	Benefits from social and recreational public spaces	Persons who think that social and recreational public spaces contribute to their well-being (qualitative self reported/key impact indicator)

Economic well-being indicators for Riga

IHW Indicators to measure economic well-being in Riga (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
employment	Increased employment of people (I)	Opportunity to find a job in the city	persons who are satisfied with the opportunities offered by the job market at city level (qualitative/self reported/key impact indicator)
		Expected sector of occupation	persons who think they can find a job in NBS related sector in the next 6 months (qualitative/self reported/key impact indicator)

	Increased satisfaction with one's skills and competences (P)	Satisfaction with one's own competencies, skills 1	persons who are satisfied with their level of skills and competences (qualitative/self reported/key impact indicator)
		Satisfaction with one's own competencies, skills 2	Persons who think that their education, skills and competences will be helpful to find a paid job in the city (qualitative/self reported/key impact indicator)
Financial situation	No change expected - context indicator (P)	Feeling that one's basic needs are met	persons who believe that their basic needs are sufficiently met (quantitative/self reported /context indicator)
	Increased satisfaction with one's surroundings and living environment (P;l)	Satisfaction with one's surroundings/living environment	satisfaction related to one's own surroundings/living environment (qualitative/self reported /Key impact indicator)

Lucca IHW Indicators

The selection of IHW Indicators for the pilot of Lucca show some specific characteristics:

- all the sub-dimensions of social well-being are relevant for the context of Lucca. In particular, institutional and social network support, as well as inclusion, social relations in public spaces and social engagement are perceived as possible areas of change due to the IN-HABIT solutions;
- equality and discrimination seem less relevant and mainly linked to the access to culture, leisure and services devoted to pets (the latter is a city specific indicator);
- the centrality of hum-animal bonds as the main topic of the pilot is reflected in the focus on healthy habits and leisure. Culture is also a predominant aspect of well-being in the perspective of city partners;
- the sub-dimension of spatial well-being is well represented in the city – specific value chain, with many expected changes related to the experience of the urban space;
- the sub-dimension of “job and skills satisfaction” is not perceived as relevant and not included in the assessment framework for the pilot of Lucca;
- some indicators have been specifically designed after the consultation of the inhabitants and partners in Lucca, namely: “freedom of personal contact”, “equal access to pet’s care services”, “Perceived quality of free time in public spaces”.

The selected indicators on socio-economic well-being, spatial-environmental well-being and healthy lifestyles for the pilot of Lucca are listed in the following tables.

Social well-being indicators for Lucca

IHW Indicators to measure social well-being in Lucca (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Social cohesion	Improved social relations (P;I)	Satisfaction with personal relationships in the neighbourhood	Persons who declare a good/very good level of satisfaction with personal relationships in the neighbourhood/living area (quantitative/self reported/Key Impact Indicator)
	Improved social network support (P)	Social network support	Persons who rely on getting help from services organized by associations, neighbourhood committees, groups of inhabitants (including visiting services) (quantitative and qualitative/self reported /Key Impact Indicator)
	Improved institutional support (P)	Institutional support 1	Persons who count on getting help from public care services in case of need (including visiting services) (quantitative and qualitative/self reported /Key Impact Indicator)
		Institutional support 2	Persons who trust in the capacity of local authorities in maintaining and promoting peace and security (quantitative and qualitative/self reported /Key Impact Indicator)
Social Inclusion	Increased social relations in public spaces (P;I)	Contact with others in public spaces	Persons who get together with friends and relatives in public spaces once a week (quantitative/self reported/Key Impact Indicator)
		Domestic Isolation	Persons who spend the majority of their time alone at home (qualitative/self reported/Key impact indicator)
	Improved sense of inclusion (P;I)	Sense of inclusion	Persons who feel to be part of the community (quantitative and qualitative/self reported/Key Impact Indicator)
	Improved sense of freedom and comfort in personal relationships (I)	Freedom of personal contact	People who experience a sense of freedom, absence of discomfort and tranquillity in personal relationships (qualitative/self reported/Key impact indicator)
	Improved civil engagement and democratic	Civil engagement 1	Persons who declare to take part to democratic life at city level (neighbourhood committees, municipal or school councils, election committees, political parties)

	participation (P)		(quantitative/self reported/Key Impact Indicator)
		Civil engagement 2	Persons who believe they can influence local policies/political decisions (qualitative/self reported/Key Impact Indicator)
	Improved social engagement (P)	Social engagement 1	Persons who declare to participate in voluntary activities (social, cultural, educational, religious) (quantitative/self reported/Key Impact Indicator)
		Social engagement 2	Persons who are satisfied with their level of involvement in the local community life qualitative/self reported/Key Impact Indicator
		Social engagement 3	People who are committed to take care of public spaces and green areas in their neighbourhood (qualitative and quantitative/self reported/Key Impact Indicator)
	Increased change-making attitude (P)	Change-making attitude	Persons who believe they can change the reality of their neighbourhood (social situation, beauty/attractiveness of the space, economic situation) (qualitative/self reported/Key Impact Indicator)
Equality	No change expected - context indicator (P)	Access to internet from home	Persons who have access to internet from home (quantitative/self reported/Context Indicator)
	Improved equal access to culture and leisure (P)	Equal access to culture and leisure	Persons who believe to have the same opportunity than others to access the available cultural and leisure opportunities in their city/neighbourhood (qualitative/self reported/Key Impact Indicator)
	No change expected - context indicator (P)	Obstacles for the access to culture and leisure	Persons who think to have economic, time, family, mobility, cognitive, cultural obstacles in the access to culture and leisure opportunities in their City/neighbourhood (quantitative and qualitative/self reported /context Indicator)
	Improved equal access to pet's care services (I)	equal access to pet's care services	Persons who believe to have the same opportunity than others to access pet's care services (qualitative/self reported/Key Impact Indicator)
	No change expected - context indicator (P)	Obstacles for the access to social care services and health services	Persons who think to have economic, time, family, mobility, cognitive, linguistic/cultural, social obstacles in the access to social care and health services in their city/neighbourhood (qualitative/self reported /context Indicator)

Discrimination	No change expected - context indicator (P)	Perception of discrimination in society	Persons who believe that minority groups are considered dangerous/dishonest/ criminals/ unreliable/ bad neighbours by local inhabitants (qualitative/self reported /context Indicator)
	No change expected - context indicator (P)	Perceived personal condition of discrimination	Persons who can describe themselves as being a member of a group that is discriminated against in their country. (quantitative/self reported /context Indicator)

Spatial-environmental well-being indicators for Lucca

IHW Indicators to measure spatial-environmental well-being in Lucca (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Perception of security	Increased sense of safety (P;I)	sense of safety at night	Persons who feel safe walking at night in the city (quantitative/self reported/Key Impact Indicator)
		sense of safety in green areas	Persons who feel safe to walk in the public green areas of their neighbourhood (quantitative/self reported/Key Impact Indicator)
		perception of crime, violence or vandalism in the living area	Average level of crime, violence and vandalism in the neighbourhood perceived by persons on a range from 1-10 (quantitative/self reported/Key Impact Indicator)
Spatial well-being	Improved accessibility of local resources (P)	Accessibility of local resources	Persons who think in their neighbourhood is easy to find help from others; find job opportunities; training opportunities; find safe, pleasant and accessible green areas, participate in cultural events; find adequate social and health assistance, find a place to do sports, find healthy food, find children playgrounds, moving on foot, moving by bike (qualitative and quantitative /self reported /Key Impact Indicator)
	Improved satisfaction with urban green areas (P;I)	Satisfaction with urban green areas	Persons who are satisfied with public green areas of their neighbourhood in terms of accessibility, safety, inclusiveness, beauty, comfort (quantitative/self reported / Key impact indicator)
	Improved	Satisfaction	Persons who are satisfied with public green areas devoted

	Satisfaction with green areas devoted to pets (P)	with green areas devoted to pets	to pets in their neighbourhood in terms of accessibility, safety, inclusiveness, beauty, comfort (qualitative and quantitative /self reported /Key Impact Indicator)
	Increased inclusiveness of public squares and green areas (P;C)	Inclusiveness of public squares and green areas	Persons who feel free to access, to use and to move within the public squares and green areas in their neighbourhood (quantitative and qualitative/self reported /Key Impact Indicator)
	Improved sense of belonging and satisfaction with the quality of the neighbourhood (P)	Sense of belonging and perception of the neighbourhood	Number of persons who like their neighbourhood; who think that it has a good reputation; who think that the image of the neighbourhood has improved in the past two years; who think it could attract more tourists in the next years; who would not move to another neighbourhood (qualitative and quantitative /self reported /Key Impact Indicator)

Healthy lifestyles indicators for Lucca

IHW Indicators to measure healthy lifestyles in Lucca (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Physical health status	No change expected - context indicator (P)	Self-reported health status	Average level of physical health reported by persons on a 5 points scales (quantitative/self reported / context indicator)
Determinants of health	No change expected - context indicator (P)	Practice of physical activity	frequency of practice of physical activity in a week (quantitative /self reported / context indicator)
	No change expected - context indicator (P)	Time spent on food preparation at home	Average time spent by persons preparing their meals at home in a day (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Consumption of fruits and vegetables	Persons who declare to consume fresh fruits and vegetables on a daily basis (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Access to healthy and nutritious food	Persons who were unable to eat healthy and nutritious food in the last week (quantitative/self reported / context indicator)

Sports practice	Increased satisfaction with sports facilities (P)	Satisfaction with sports facilities	Persons who are satisfied with the areas and facilities devoted to sports in their neighbourhood (quantitative/self reported / Key impact indicator)
	Increased practice of sports in public green areas (P;C)	Practice of sports in public green areas	Frequency of use of the public outdoor/green areas to do sports in a week (quantitative and qualitative/self reported / Key impact indicator)
	Increased perception of benefits from sports (P)	Benefits from sports	Persons who think that sports/physical activity contributes to their well-being (qualitative/self reported /Key impact indicator)
Cultural consumption and production	Increased satisfaction with cultural facilities (P)	Satisfaction with cultural facilities	Persons who are satisfied with the cultural places/events and opportunities in their neighbourhood (quantitative/self reported / Key impact indicator)
	Increased participation in cultural activities within public spaces (P;I)	Participation in cultural activities within public spaces (outdoor/indoor)	Frequency of participation in cultural activities/consumptions in public squares, green areas, centers of their neighbourhood in a week (quantitative/self reported / Key impact indicator)
	Increased perception of benefits from culture (P)	Benefits from culture	Persons who think that cultural activity contributes to their well-being (qualitative/self reported /Key impact indicator)
	Increased local cultural engagement (P)	Local cultural engagement	Persons directly involved in the organization, production and management of cultural activities, products, places and events in their neighbourhood (quantitative self reported/ key impact indicator)
Leisure/Free time	No change expected - context indicator (P)	Time devoted to leisure and personal care	Average time (hours) devoted to leisure and personal care in a typical working day (quantitative/self reported / context indicator)
	Increased time spent playing relaxing or doing sports in public green areas (P)	time spent playing, relaxing or doing sports in public green areas	Average time (hours) spent playing, relaxing or doing sports in public green areas in a day (quantitative/self reported / Key impact indicator)

	Increased time spent in social and recreational public spaces (P;I)	time spent in social and recreational public spaces	Average time spent in social and recreational public spaces in a day (quantitative/self reported / Key impact indicator)
	No change expected - context indicator (P)	Time devoted to family care	Average time in a day devoted to family care (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Time devoted to pets' care/playing with pets	Average time devoted to pets' care/playing with pets in a day (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Satisfaction with free time use	Persons who are satisfied with the quality of their free time/the way they spend their free time (quantitative/self reported / context indicator)
	Increased perception of benefits from social and recreational public spaces (P)	Benefits from social and recreational public spaces	Persons who think that social and recreational public spaces contribute to their well-being (qualitative self reported/key impact indicator)
	Increased quality of free time in public spaces (I)	Perceived quality of free time in public spaces	Persons who think that the quality of their free time in public spaces is satisfactory (qualitative self reported/key impact indicator)
	Increased perception of benefits from human-animal bonds	Benefits from human-animal bonds	Persons who think that animals/pets contribute to their well-being (qualitative self reported/key impact indicator)

Economic well-being indicators for Lucca

IHW Indicators to measure economic well-being in Lucca (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
employment	Increased employment of people (I)	Opportunity to find a job in the city	persons who are satisfied with the opportunities offered by the job market at city level (qualitative/self reported/key impact indicator)

		Expected sector of occupation	persons who think they can find a job in NBS related sector in the next 6 months (qualitative/self reported/key impact indicator)
Financial situation	No change expected - context indicator (P)	Feeling that one's basic needs are met	persons who believe that their basic needs are sufficiently met (quantitative/self reported /context indicator)
	No change expected - context indicator (P)	satisfaction with time and resources for personal care	number of persons who think to have sufficient resources to manage personal matters/personal care (quantitative/self reported /context indicator)
	Increased satisfaction with one's surroundings and living environment (P)	Satisfaction with one's surroundings/living environment	satisfaction related to one's own surroundings/living environment (qualitative/self reported /Key impact indicator)

Nitra IHW Indicators

The selection of IHW Indicators for the pilot of Nitra show some specific characteristics:

- all the sub-dimensions of social well-being are relevant for the context of Nitra. In particular, inclusion, social relations in public spaces, perceived safety and social engagement are perceived as possible areas of change due to the IN-HABIT solutions. However, in this respect it is worth noting that the indicators regarding “social network support” and “institutional support” are not perceived as relevant in relation to the local solutions and context;
- the sub-dimensions of equality and discrimination play an important role within the value chain “solutions-expected changes-indicators”, from the perspective of both the local research partners and the local inhabitants involved in the co-design phase;
- the centrality of environment as the main topic of the pilot is reflected in the focus on spatial well-being, healthy habits and leisure.
- regarding the healthy lifestyles, the relation between health and culture has been proposed as a key component of the local assessment framework by local research partners, while sports practice has been highlighted as a possible area of change by local inhabitants
- some indicators have been specifically designed after the consultation of the inhabitants and partners in Nitra, namely: “benefits from urban nature”, “practice of healthy leisure”, “Perceived quality of free time in public spaces”.

The selected indicators on socio-economic well-being, spatial-environmental well-being and healthy lifestyles for the pilot of Nitra are listed in the following tables.

Social well-being indicators for Nitra

IHW Indicators to measure social well-being in Nitra (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Social cohesion	Improved social relations (P;I)	Satisfaction with personal relationships in the neighbourhood	Persons who declare a good/very good level of satisfaction with personal relationships in the neighbourhood/living area (quantitative/self reported/Key Impact Indicator)
	Increased trust among people (P)	Trust in others	persons who declare a good/very good level of trust in other persons within their community (qualitative/self reported/Key Impact Indicator)
	Reduced social conflict (P)	Social conflicts	Persons who have experienced or witnessed conflicts among persons or groups in their neighbourhood (qualitative/self reported/Key Impact Indicator)
Social Inclusion	Increased social relations in public spaces (P;I)	Contact with others in public spaces	Persons who get together with friends and relatives in public spaces once a week (quantitative/self reported/Key Impact Indicator)
		Domestic Isolation	Persons who spend the majority of their time alone at home (qualitative/self reported/Key impact indicator)
	Improved sense of inclusion (P;C)	Sense of inclusion	Persons who feel to be part of the community (quantitative and qualitative/self reported/Key Impact Indicator)
	Improved civil engagement and democratic participation (P)	Civil engagement 1	Persons who declare to take part to democratic life at city level (neighbourhood committees, municipal or school councils, election committees, political parties) (quantitative/self reported/Key Impact Indicator)
		Civil engagement 2	Persons who believe they can influence local policies/political decisions (qualitative/self reported/Key Impact Indicator)
	Improved social engagement (P;I)	Social engagement 1	Persons who declare to participate in voluntary activities (social, cultural, educational, religious) (quantitative/self reported/Key Impact Indicator)
		Social engagement 2	Persons who are satisfied with their level of involvement in the local community life (qualitative/self reported/Key Impact Indicator)
		Social engagement 3	People who are committed to take care of public spaces and green areas in their neighbourhood

			(qualitative and quantitative/self reported/Key Impact Indicator)
	Increased change-making attitude (P)	Change-making attitude	Persons who believe they can change the reality of their neighbourhood (social situation, beauty/attractiveness of the space, economic situation)
Equality	No change expected - context indicator (P)	Sense of being treated equally	Persons who feel they are treated with less courtesy and respect than others (or other groups) (qualitative/self reported/Context indicator)
	No change expected - context indicator (P)	Access to internet from home	Persons who have access to internet from home (quantitative/self reported/Context Indicator)
	Improved equal access to culture and leisure (P;C)	Equal access to culture and leisure	Persons who believe to have the same opportunity than others to access the available cultural and leisure opportunities in their city/neighbourhood (qualitative/self reported/Key Impact Indicator)
	No change expected - context indicator (P)	Obstacles for the access to culture and leisure	Persons who think to have economic, time, family, mobility, cognitive, cultural obstacles in the access to culture and leisure opportunities in their City/neighbourhood (quantitative and qualitative/self reported /context Indicator)
	No change expected - context indicator (P)	Obstacles for the access to training opportunities	Persons who think to have economic, time, family, mobility, cognitive, linguistic/cultural, social obstacles in the access to training opportunities in their city (qualitative and quantitative/self reported /context Indicator)
Discrimination	Decreased perception of discrimination in society (P)	Perception of discrimination in society	Persons who believe that minority groups are considered dangerous/dishonest/ criminals/ unreliable/ bad neighbours by local inhabitants (qualitative/self reported /Key Impact Indicator)
	No change expected - context indicator (P)	Perceived personal condition of discrimination	Persons who can describe themselves as being a member of a group that is discriminated against in their country. (quantitative/self reported /context Indicator)

Spatial-environmental well-being indicators for Nitra

IHW Indicators to measure spatial-environmental well-being in Nitra (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Perception of security	Increased sense of safety (P;I)	sense of safety at night	Persons who feel safe walking at night in the city (quantitative/self reported/Key Impact Indicator)
		fear of road accidents	Persons who express fear to be victim of road accidents when walking or cycling in the street of their neighbourhood (quantitative/self reported/Key Impact Indicator)
		sense of safety in green areas	Persons who feel safe to walk in the public green areas of their neighbourhood (quantitative/self reported/Key Impact Indicator)
		perception of crime, violence or vandalism in the living area	Average level of crime, violence and vandalism in the neighbourhood perceived by persons on a range from 1-10 (quantitative/self reported/Key Impact Indicator)
Spatial well-being	Improved accessibility of local resources (P;I)	Accessibility of local resources	Persons who think in their neighbourhood is easy to find help from others; find job opportunities; training opportunities; find safe, pleasant and accessible green areas, participate in cultural events; find adequate social and health assistance, find a place to do sports, find healthy food, find children playgrounds, moving on foot, moving by bike (qualitative and quantitative /self reported /Key Impact Indicator)
	Improved satisfaction with urban green areas (P;I)	Satisfaction with urban green areas	persons who are satisfied with public green areas of their neighbourhood in terms of accessibility, safety, inclusiveness, beauty, comfort (quantitative/self reported / Key impact indicator)
	Increased inclusiveness of public squares and green areas (P;C)	Inclusiveness of public squares and green areas	Persons who feel free to access, to use and to move within the public squares and green areas in their neighbourhood (quantitative and qualitative/self reported /Key Impact Indicator)
	Improved air quality perception (P)	Air pollution perception	Persons who think that the quality of air in their neighbourhood is satisfactory/good (quantitative/self reported / Key impact indicator)

	Decreased noise pollution perception (P)	Perception of noise pollution	Persons who think that in their neighbourhood is easy to find places/areas where the noise is not high (quantitative/self reported / Key impact indicator)
	Improved sense of belonging and satisfaction with the quality of the neighbourhood (P;I)	Sense of belonging and perception of the neighbourhood	Number of persons who like their neighbourhood; who think that it has a good reputation; who think that the image of the neighbourhood has improved in the past two years; who think it could attract more tourists in the next years; who would not move to another neighbourhood (qualitative and quantitative /self reported /Key Impact Indicator)

Healthy lifestyles indicators for Nitra

IHW Indicators to measure healthy lifestyles in Nitra (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
Physical health status	No change expected - context indicator (P)	Self-reported health status	Average level of physical health reported by persons on a 5 points scales (quantitative/self reported / context indicator)
Determinants of health	No change expected - context indicator (P)	Practice of physical activity	Frequency of practice of physical activity in a week (quantitative /self reported / context indicator)
	No change expected - context indicator (P)	Time spent on food preparation at home	Average time spent by persons preparing their meals at home in a day (quantitative/self reported / context indicator)
	Increased consumption of self-grown fruit and vegetables (P)	Self-grown fruit and vegetables consumption	Persons who declare to consume self-grown fruit and vegetables (qualitative/self reported /Key Impact Indicator)
	No change expected - context indicator (P)	Consumption of fruits and vegetables	Persons who declare to consume fresh fruits and vegetables on a daily basis (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Access to healthy and nutritious food	Persons who were unable to eat healthy and nutritious food in the last week (quantitative/self reported / context indicator)

Sports practice	Increased satisfaction with sports facilities (I)	Satisfaction with sports facilities	Persons who are satisfied with the areas and facilities devoted to sports in their neighbourhood (quantitative/self reported / Key impact indicator)
	Increased practice of sports in public green areas (P;I)	Practice of sports in public green areas	Frequency of use of the public outdoor/green areas to do sports in a week (quantitative and qualitative/self reported / Key impact indicator)
	Increased perception of benefits from sports (I)	Benefits from sports	Persons who think that sports/physical activity contributes to their well-being (qualitative/self reported /Key impact indicator)
Cultural consumption and production	Increased satisfaction with cultural facilities (P;C)	Satisfaction with cultural facilities	Persons who are satisfied with the cultural places/events and opportunities in their neighbourhood (quantitative/self reported / Key impact indicator)
	Increased participation in cultural activities within public spaces (P)	Participation in cultural activities within public spaces (outdoor/indoor)	Frequency of participation in cultural activities/consumptions in public squares, green areas, centers of their neighbourhood in a week (quantitative/self reported / Key impact indicator)
	Increased perception of benefits from culture (P)	Benefits from culture	Persons who think that cultural activity contributes to their well-being (qualitative/self reported /Key impact indicator)
	No change expected - context indicator (P)	Cultural consumptions	Average time devoted to cultural consumptions during the week (theatre, reading books, cinema, exhibitions) (quantitative/self reported/context indicator)
	Increased local cultural engagement (P)	Local cultural engagement	Persons directly involved in the organization, production and management of cultural activities, products, places and events in their neighbourhood (quantitative self reported/ key impact indicator)
Leisure/Free time	No change expected - context indicator (P)	Time devoted to leisure and personal care	Average time (hours) devoted to leisure and personal care in a typical working day (quantitative/self reported / context indicator)
	increased practice of healthy leisure (I)	Practice of healthy leisure	People who practice healthy behaviours for leisure /avoid unhealthy leisure (qualitative /self reported /Key Impact Indicator)

	Increased time spent playing relaxing or doing sports in public green areas (P;C)	time spent playing, relaxing or doing sports in public green areas	Average time (hours) spent playing, relaxing or doing sports in public green areas in a day (quantitative/self reported / Key impact indicator)
	Increased benefits from urban nature	benefits from urban nature	Persons who think that urban nature contributes to their well-being (qualitative/self reported/key impact indicator)
	Increased time spent in social and recreational public spaces (P;I)	time spent in social and recreational public spaces	Average time spent in social and recreational public spaces in a day (quantitative/self reported / Key impact indicator)
	No change expected - context indicator (P)	Time devoted to family care	Average time in a day devoted to family care (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Time devoted to pets' care/playing with pets	Average time devoted to pets' care/playing with pets in a day (quantitative/self reported / context indicator)
	No change expected - context indicator (P)	Satisfaction with free time use	Persons who are satisfied with the quality of their free time/the way they spend their free time (quantitative/self reported / context indicator)
	Improved perception of the quality of one's free time in public spaces (I)	Perceived quality of free time in public spaces	Persons who think that the quality of their free time in public spaces is satisfactory (qualitative self reported/key impact indicator)
	Increased perception of benefits from social and recreational public spaces (P)	Benefits from social and recreational public spaces	Persons who think that social and recreational public spaces contribute to their well-being (qualitative self reported/key impact indicator)

Economic well-being indicators for Nitra

IHW Indicators to measure economic well-being in Nitra (final list)

Sub-dimension	Expected change (P=partners' view / I=inhabitants' view)	Indicator	Description
employment	Increased employment of people (P, C)	Opportunity to find a job in the city	Persons who are satisfied with the opportunities offered by the job market at city level (qualitative/self reported/key impact indicator)
		Expected sector of occupation	Persons who think they can find a job in NBS related sector in the next 6 months (qualitative/self reported/key impact indicator)
	Increased satisfaction with one's skills and competences (P)	Satisfaction with one's own competencies, skills 1	Persons who are satisfied with their level of skills and competences (qualitative/self reported/key impact indicator)
		Satisfaction with one's own competencies, skills 2	Persons who think that their education, skills and competences will be helpful to find a paid job in the city (qualitative/self reported/key impact indicator)
Financial situation	No change expected - context indicator (P)	Feeling that one's basic needs are met	persons who believe that their basic needs are sufficiently met (quantitative/self reported /context indicator)
	No change expected - context indicator (P)	Satisfaction with time and resources for personal care	number of persons who think to have sufficient resources to manage personal matters/personal care (quantitative/self reported /context indicator)
	Increased satisfaction with one's surroundings and living environment (P;I)	Satisfaction with one's surroundings/living environment	satisfaction related to one's own surroundings/living environment (qualitative/self reported /Key impact indicator)
	No change expected - context indicator (P)	Satisfactions with one's own financial situation	Average level of satisfaction related to one's own family or individual income and resources (quantitative/self reported /context indicator)

ANNEX 5

Common indicators on subjective well-being and Covid 19 effects

Impact indicator to measure subjective well-being (common for all the cities)

	Indicator	Description	Assessment Framework of reference
General psychological well-being (positive emotions)	Feeling cheerful and in good spirit	People who have felt cheerful and in good spirit over the last two weeks	WHO-5 Scale
	Feeling calm and relaxed	People who have felt calm and relaxed over the last two weeks	WHO-5 Scale
	Feeling active and vigorous	People who have felt active and vigorous over the last two weeks	WHO-5 Scale
	Feeling fresh and rested	People who woke feeling fresh and rested over the last two weeks	WHO-5 Scale
	Feeling that one's life has been filled with things that interest oneself	People who think their daily life has been filled with things that interest them in the last two weeks	WHO-5 Scale
Mental distress	Feeling nervous	People who have felt nervous over the past 30 days (how often on a scale from 1 to 5)	Kessler Psychological Distress Scale K6
	Feeling hopeless	People who have felt hopeless over the past 30 days (how often on a scale from 1 to 5)	Kessler Psychological Distress Scale K6
	Feeling restless or fidgety	People who have felt Restless or fidgety over the past 30 days (how often on a scale from 1 to 5)	Kessler Psychological Distress Scale K6
	Feeling depressed	People who have felt so depressed that nothing could cheer you up over the past 30 days (how often on a scale from 1 to 5)	Kessler Psychological Distress Scale K6
	Feeling that everything was an	People who have felt that everything was an effort over the past 30 days (how	Kessler Psychological Distress Scale K6

	effort	often on a scale from 1 to 5)	
	Feeling worthless	People who have felt worthless over the past 30 days (how often on a scale from 1 to 5)	Kessler Psychological Distress Scale K6
Life satisfaction	Life satisfaction	Rating of ones satisfaction with life overall these days (on a 10 point scale)	Ryff's life satisfaction scale

Context Indicators to measure the effects of the Covid-19 pandemic on healthy lifestyles

Expected change (P=partners' view / I=in-habitants' view)	Indicator	Description
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 1	Persons who have changed the frequency of Reading a book for pleasure (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 2	Persons who have changed the frequency of doing physical activity (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 3	Persons who have changed the frequency of Caring for family members (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 4	Persons who have changed the frequency of Engaging in cultural activities (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 5	Persons who have changed the frequency of Cooking (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 6	Persons who have changed the frequency of Sleeping (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 7	Persons who have changed the frequency of Listening to music (quantitative/self reported/context indicator)
No change expected -	Change of social, cultural	Persons who have changed the frequency of

context indicator (P)	and healthy habits after Covid-19 restrictions 8	Eating (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 9	Persons who have changed the frequency of Taking care of your body and appearance (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 10	Persons who have changed the frequency of Taking care of your home (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 11	Persons who have changed the frequency of attending social and recreational public spaces (quantitative/self reported/context indicator)
No change expected - context indicator (P)	Change of social, cultural and healthy habits after Covid-19 restrictions 12	Persons who have changed the frequency of playing, relaxing or doing sports in public green areas (quantitative/self reported/context indicator)

ANNEX 6 – H&W aspects that are sensitive to GDEI personal characteristics based on the literature and on the consultation of local NGOs

Key findings, elderly

Elderly	
Literature	<p>Social inclusion is one of the first IHW dimensions sensitive to older people who report experiencing conflicting types of behaviour and attitudes towards them. On the one hand, many feel they are often respected, recognized and included, while on the other, they experience lack of consideration in the community, in services and in the family (especially older women, are unpaid carers). They do not stop contributing to their communities, on retirement and many continue to provide unpaid and voluntary work for their families and communities⁴⁹. Through many activities (cultural, sports or other associations, religious institutions) inter-generational solidarity and cooperation happen, creating value and benefiting young and old alike in terms of knowledge, experience and self-esteem.⁵⁰</p> <p>Social participation in leisure, social, cultural and spiritual activities in the community and social support are considered by older people “strongly connected to good health and well-being throughout life”, allowing them “to continue to exercise their competence, to enjoy respect and esteem, and to maintain or establish supportive and caring relationships”. Their participation depends not only on the offer of activities”, but also on having adequate access to affordable public transport and facilities. It depends also on getting information about activities and on appropriate housing and access to community and social services which influence their independence and quality of life .⁵¹</p> <p>According to the WHO, the “physical and social environments are key determinants of whether people can remain healthy, independent and autonomous long</p>

⁴⁹ World Health Organization, Global age-friendly cities: a guide. World Health Organization 2007

⁵⁰ [1_en_act_part1_v8_0.pdf \(europa.eu\)](#)

⁵¹ World Health Organization, Global age-friendly cities: a guide. World Health Organization 2007

Interviews	<p>Towards elderly, the main attitude by the community is “solidarity” showed by individual and associations, even though family relationships often are broken bring elderly to isolation.</p> <p>No experience of discrimination and violence are reported by elderly towards them the main attitude is solidarity.</p> <p>For elderly, housing condition is vital since they are often in difficult financial condition as well as the neighbourhood characteristics. They have to be able to easily move around, take the opportunities to undertake social cultural sport and leisure activities (active ageing issues) and participate to the community included the intergenerational relationships (e. g. projects and activities with children).</p> <p>In the view of active ageing approach, all the activities included in the visionary and integrated solutions are important for elderly</p>
Sub-dimensions of IHW that are sensitive to age	Spatial well-being, Safety, Social inclusion, Social cohesion

Key findings, LGBTQI+

LGBTIQ+	
Literature	<p>Significant proportions of people continue to experience harassment and violence because of being LGBTQI+. According to the FRA report (2020) a majority of LGBTQI+ respondents say that they experienced, during the five years before the survey, harassment in the form of offensive or threatening situations– including incidents of a sexual nature – at work, on the street, on public transport, in a shop, on the internet, or anywhere else. Many LGBTQI+ people feel compelled to hide their sexual orientation or gender identity, or to avoid certain situations, out of fear of violence, harassment or discrimination. Over half of LGBTQI+ people surveyed are almost never or rarely open about being LGBTQI+. Less than a quarter say that they are very open. ‘Avoidance behaviours’ include, for instance, not holding a same-sex partner’s hand in public or avoiding certain places.</p> <p>Openness about being LGBTQI+ appears to affect life satisfaction. Respondents who are never open about being LGBTQI+ are on average less satisfied with their lives than those who are rarely open, fairly open or very open (highest level of life satisfaction). Those who felt discriminated in at least one area of life on average have lower life satisfaction than those who have not felt discriminated.</p>

Among LGBTIQ+ life satisfaction gay men and lesbian women have the highest average satisfaction levels and Trans and intersex respondents have the lowest. Discrimination on grounds of sexual orientation, gender identity and sex characteristics is widespread in many areas of life. More than a third of respondents felt discriminated against in areas of life other than work. People experience discrimination at school, when looking for housing, when accessing healthcare or social services, as well as in shops, at cafés, restaurants, bars or nightclubs. The rates are highest for trans and intersex respondents. Among the different areas of life asked about, other than work, the highest share of respondents felt discriminated against in a café, restaurant, bar or nightclub.

Employment continues to be an area of life where LGBTIQ+ people experience high rates of discrimination. People may experience discrimination based on multiple grounds. For example, a lesbian woman may face discrimination both as a lesbian and as a woman, or as a member of a religious group. Four in 10 respondents to the survey (40 %) who self-identify as members of an ethnic minority or have an immigrant background indicate ethnic origin or immigrant background as an additional ground for discrimination (besides being LGBTIQ+). Some 15 % indicated their skin colour as an additional ground for discrimination. More than a third of respondents (36 %) who identify themselves as persons with disabilities indicate disability as an additional ground. Of those who belong to a religious minority, 28 % indicate religion as an additional ground.⁵⁷

Confinement restrictions due to the Covid -19 pandemic have locked many LGBTIQ+ people, young and old, into hostile environments where they might be at risk of violence or heightened levels of anxiety or deeper depression. Widespread fake news has even blamed LGBTIQ+ people for the spread of the virus. Its economic consequences makes it even more pressing to tackle the risk of segregation of persons with disability, as it amplified obstacles and inequalities. The Covid-19 pandemic has increased the cases of domestic violence mainly against women and LGBTIQ+ people⁵⁸. The most vulnerable, including those experiencing intersectional discrimination and trans, non-binary and intersex people, who are among the least accepted groups in society and generally experience more discrimination and violence than others in the LGBTIQ+ communities⁵⁹.

⁵⁷ European Union Agency for Fundamental Rights, *EU LGBT II. A long way to go for LGBT Equality*, FRA, 2020.

⁵⁸ ILGA Europe, *COVID-19 impacts on LGBTIQ+ communities in Europe and Central Asia: A rapid assessment report*, ILGA Europe, 19 June 2020.

⁵⁹ European Commission, *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Union of Equality: LGBTIQ+ Equality Strategy 2020-2025*, Brussels, 12.11.2020 COM(2020) 698 final.

Survey	<p>“Social relations” are the most important factor impacting LGBTIQ+ well-being. “Personal security and access to care and health services” are also considered crucial for well-being. Little bit distant in terms of attributed value, there are “civil and social engagement”, “access to socialization and leisure activities” and “access to job and training”.</p>
Interviews	<p>LGBTIQ+ report marginalization, poverty and social exclusion as well as hate speech (included the online one). Self- Marginalisation for this group of inhabitants is due to the fear to be exposed, in some places, to discrimination and harassment.</p> <p>According to the NGO active for LGBTIQ+, what is mainly affecting well-being is first of all social relations, then come: the access to care and assistance services; the increase in the opportunities to socialize; the provision of culture, free time, services (physical and digital) for improving health and healthy behaviours (diet, physical exercise/activity); opportunities of training, learning and education, (included entrepreneurship support); digital services to improve access to care opportunities, places, events and local services and infrastructure services (e.g. LGBTIQ+ minors cannot benefit from psychological support services with a non medicalised approach). They are also missed leisure services dedicated to adolescents and pre-adolescents who are in the life phase when, generally, people become aware of their sexual orientation and their gender identity. There is also need for safe and inclusive socialization spaces (e.g an evening on table games organised in Lucca by the NGO before the pandemic, which saw the participation of an heterogeneous group of people, migrants included).</p> <p>When coming to IN-HABIT solutions, LGBTIQ+ affirm that a common place should make everyone feel welcomed. LGBTIQ+ community has to be publicly included as the other groups in the opening of space and the start of the related activity. They proposed to add some symbol linked to their specific “culture” in public spaces: for instance rainbow benches.</p>
Sub-dimensions of IHW that are sensitive to sexual orientation and gender identity	<p>Discrimination, Security and violence, Social cohesion, Cultural participation , Leisure and free time</p>

Key findings, Women

Women	
Literature	<p>Gender inequality also limits women's access to economic resources and opportunities, and the possibility for them to realize their full potential in the job market, either as salaried workers or as entrepreneurs.⁶⁰ Stereotypical expectations based on fixed norms for women and men, girls and boys, limit their aspirations, choices and freedom. Gender stereotypes strongly contribute to the gender pay gap and are often combined with other stereotypes such as those based on race or ethnic origin, religion or belief, disability, age or sexual orientation, and this can reinforce stereotypes' negative impacts⁶¹.</p> <p>Access to local resources is also a gender sensitive sub-dimension of well-being. In the absence of gender-sensitive urban planning, women can see their access to services restricted by limited access to land and affordable housing due to discriminatory legal and cultural constraints, increased disease burden due to the lack of adequate basic services, and limited mobility due to safety issues and to the costs incurred in using public transportation.⁶²</p> <p>Safety is a crucial dimension of social well-being for women when we talk about attending public open spaces not safe (insufficient or no lightening, isolated places neglected by the community, with low or no control by law enforcement). women continue to experience gender-based violence at home and on the streets⁶³. Online violence targeting women has become pervasive with specific, vicious consequences; It is a barrier to women's participation in public life. Bullying, harassment and abuse on social media have far-reaching effects on women's and girls' daily lives. Women who have a health problem or disability are more likely to experience various forms of violence⁶⁴.</p> <p>The Covid-19 pandemic has increased the cases of domestic violence mainly against women and LGBTIQ+ people. For these reasons indicators regarding housing condition are also relevant for women and LGBTIQ+ people who do not have the chance to live on their own. Furthermore the Covid-19 effect on stress, disruption of social and protective networks, and decreased access to services all can exacerbate the risk of violence for women. As distancing measures are put in place and people are encouraged to stay at home, the risk of intimate partner</p>

⁶⁰ [Gender Inequalities in Cities \(iadb.org\)](https://iadb.org).

⁶¹ [Gender Inequalities in Cities \(iadb.org\)](https://iadb.org).

⁶² [Gender Inequalities in Cities \(iadb.org\)](https://iadb.org).

⁶³ [Gender Equality | URBACT](https://urbact.eu).

⁶⁴ [Gender Inequalities in Cities \(iadb.org\)](https://iadb.org).

	<p>violence is likely to increase.⁶⁵</p> <p>Satisfaction with their financial resources is also a crucial indicator for women with children and women at risk of violence. Women’s employment rate in the EU is higher today than ever before, yet many women still experience barriers to joining and remaining in the labour market. Some women are structurally underrepresented in the labour market, often resulting from the intersection of gender with additional conditions of vulnerability or marginalisation such as belonging to an ethnic or religious minority or having a migrant background⁶⁶. Since women are still more involved in family care, work-life balance is crucial dimension in addressing the gender gaps in the labour market. Both parents need to feel responsible and entitled when it comes to family care⁶⁷. Gender inequality also limits women's access to economic resources and opportunities, and the possibility for them to realize their full potential in the job market, either as salaried workers or as entrepreneurs.</p>
Survey	<p>Differently from the literature review, social relations and availability of free time are the most important factors determining women well-being. Even though rightly after that, there are two other factors corresponding to literature review findings: personal security, and access to job and training. The latter is strongly linked to job and skill satisfaction and financial situation. Another factor that has emerged is access to care and health services.</p>
Interviews	<p>Speaking about experience of discrimination and violence, hatred against women and domestic violence are quite common, since the number of victims who are assisted by local help services is high. The discrimination within the work sector is also reported as very common.</p> <p>For women employment satisfaction (which means having a job and having a good job) is crucial for well-being. All the proposed aspects of well-being were deemed relevant for women because the association is made up of women who have very varied interests and needs in sport, culture, ect. In any case, a crucial issue is that of social relations outside the family. The possibility of leaving the individual sphere and becoming active in social and cultural participation is reserved for a few women. Home isolation is a common condition of women, independently from their income, cultural background or nationality for instance for North African women, isolation is experienced within their own ethnic and</p>

⁶⁵ WHO, COVID-19 and violence against women *What the health sector/system can do* 26 March 2020.

⁶⁶ [Gender Inequalities in Cities \(iadb.org\)](http://iadb.org).

⁶⁷ [Gender Inequalities in Cities \(iadb.org\)](http://iadb.org).

	<p>linguistic community.</p> <p>All the proposed visionary and integrated solutions were deemed very relevant for women. However, increased opportunities for socialization, culture and leisure is seen as a solution of primary importance, together with the safety of public spaces. Space design that promotes socialization and not isolation is crucial for impacting women's health and well-being. The presence of animals in the public spaces is not considered decisive for their well-being, if the public spaces are not designed and organized in a way that ensures safety and socialization for women (for example: spaces that are not too large and distracting, benches or rest points that are not too far apart, adequate lighting). For North African families, who generally have no pets and are closed in their group, the availability of animals in green spaces could be a channel for integration and socialization.</p>
<p>Sub-dimensions of IHW that are sensitive to gender</p>	<p>Security and violence, Discrimination, employment, Spatial well-being, Leisure and free time, Job and skill satisfaction</p>

Key findings, persons with disabilities

Persons with disabilities	
<p>Literature</p>	<p>Accessible and inclusive art and culture, sport, leisure, recreational activities, and tourism are essential for full participation in society. They increase well-being and give everyone, including persons with disabilities, the opportunity to develop and utilise their potential. Economic safety and independence are more sensitive for people with disability, since they are often stereotyped as useless or unable. Accessibility to the built and virtual environments, to information and communication technologies (ICT), goods and services, including transport and infrastructure, is an enabler of rights and a prerequisite for the full participation of persons with disabilities on an equal basis with others. Decent quality of life and living independently Independent living, quality social and employment services, accessible and inclusive housing, participation in lifelong learning, adequate social protection and a strengthened social economy are indispensable for decent living for all persons with disabilities. Persons with disabilities or with health problems experience a higher prevalence rate of violence (17% compared to 8% of people without) and experience harassment at a higher rate</p>

	(50% compared to 37% of people without disabilities) ⁶⁸
Survey	Persons with disabilities attribute more importance to “civil and social engagement”, relating to well-being. Also “social relations” and “access to socialization and leisure activities” are crucial for their well-being. A little less valued but still important for their well-being are: “access to culture”, “personal security”, “access to sports”, “access to care and health services”, “access to job and training”; “access to healthy food” .
Interviews	<p>There are no general discrimination against persons with disabilities except for a feeling of “distrust and suspicion” towards people with mental disabilities. Person with physical disabilities are instead still marginalized.</p> <p>No experience of discrimination against persons with disabilities was reported by the interviewees: the main attitude is solidarity.</p> <p>For persons with disabilities the factors affecting well-being are strictly linked to the architectural barriers as well as to the accessibility to public spaces in order to fully live the city and having more opportunities to socialize. City barriers are thicker if we think about family culture being too protective of relatives with disabilities (emancipation issues) and the difficulties that relatives face when accompanying persons with disabilities to the recreational areas where they can undertake cultural, sport and leisure activities. Social inclusion is crucial for them, but it is necessary that it should be effective (for instance, in Lucca the municipality dedicated a space only to children with disabilities).</p> <p>Also for persons with disabilities the revitalized space have to be as much inclusive as possible, animals included. The accessibility to all the opportunities listed is the priority.</p> <p>Social inclusion, according to disability studies (Rimmerman, 2013, p. 1) mean: being accepted and recognised as an individual beyond the disability; having personal relationships with family, friends and acquaintances; being involved in recreation and social activities; having appropriate living accommodation; having employment; having appropriate formal and informal support. Disability inclusive development ‘seeks to ensure the full participation of people with disabilities as empowered self-advocates in development processes and emergency responses and works to address the barriers which hinder their access and participation’ (Al Ju’beh, 2015, p. 49)⁶⁹</p>

⁶⁸ [Union of Equality: Strategy for the Rights of Persons with Disabilities 2021-2030 \(autismeurope.org\)](https://autismeurope.org)

⁶⁹ [Disability: Health, Well-Being, and Personal Relationships \(Stanford Encyclopedia of Philosophy\)](#)

Sub-dimensions of IHW that are sensitive to disability	Social inclusion, Social cohesion, Spatial Well-being, Job and skills satisfaction
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Key findings, ethnic and religious minorities

Ethnic and religious minorities	
Literature	<p>Since the perception and the experience of discrimination and exclusion, negatively impact on health and well-being in particular on mental health, producing anxiety and depression, as it was showed by the minority stress model but also by other research on the health effects of racism⁷⁰, All the mental health indicators, above all those on the presence of positive emotions and the absence of the negative ones, are crucial in measuring the inclusive health and well-being linked to social well-being, healthy lifestyle and economic well-being.</p> <p>Since they normally experience discrimination at work, indicators related to job satisfaction are sensitive for people belonging to ethnic and religious minorities. Equitable access to healthy food, healthy behaviour, leisure, sport and cultural facilities are particularly sensitive for migrants and refugees and Roma people who are more likely to live in difficult economic conditions, having less time and resources to dedicate to leisure, sport and culture.</p> <p>People at risk of discrimination and exclusion by ethnicity are more likely to live in difficult situation in terms of financial resources and housing. Roma people suffer from discrimination in different field of life but in particular regarding housing deprivation, 61% of Roma in respect to the 17.9% of general population and overcrowding, 78% of Roma against the 17.1% of the general population.⁷¹</p> <p>Successful housing and neighbourhood integration is significant in influencing secondary migration by new migrants, helps shape community relations, and affects access to services and opportunities for employment which are crucial for the development of migrant and minority ethnic households' capacities for secure and independent living. Among the criteria for measuring the success of</p>

⁷⁰[The Role of Minority Stress in Health Disparities \(verywellhealth.com\)](#), [Ethnicity and Health in America Series: Invisibility in the African-American Community \(apa.org\)](#), [The minority stress perspective \(apa.org\)](#), [Higher stress among minority and low-income populations can lead to health disparities, says report \(apa.org\)](#).

⁷¹[union_of_equality_eu_roma_strategic_framework_for_equality_inclusion_and_participation_en.pdf \(europa.eu\)](#)

	<p>housing integration measures: level of access to ownership, age of property, access to basic housing amenities, quality, size, attractiveness of neighbourhood and affordability, migrant and minority ethnic dispersal (usually aimed at new migrants), aimed at avoiding and/or reducing residential segregation or ‘ghetto’ formation.⁷²</p> <p>For people suffering from a stigma or a physical disadvantage it is common to encounter obstacles and impediment that forced them to make deviations in/when accessing to their favourite cultural facilities, library or preferred museum; looking for an interesting conference or event they really don't want to miss; going shopping at a market; manage some bureaucratic business they haven't attended to for some time; trying to visit friends living far away that they do not often have the chance to see; buying themselves tickets for a concert they are particularly keen to attend. Roma people in Cordoba cannot take part in online activities because of the digital divide or because they have never been involved in activities with “gagé”. Young afro-descendant or Muslim women wearing veil are discriminated in accessing certain public spaces.</p> <p>The COVID-19 pandemic has revealed the extreme exposure of excluded and marginalised Roma communities to negative health and socioeconomic impacts. The fear of contagion has also increased harassment and violence (physical and verbal) against Chinese people or people who look like Chinese, but also against migrants, Muslims, Roma and others who are often viewed as a scapegoat and blamed as the cause of social, cultural and economic crisis.</p>
<p>Survey</p>	<p>For ethnic and religious minorities members, “social relations” is the most important factors determining well-being. At the second place there are: “personal security”, “access to care and health services” and “access to job and training”, “civil and social engagement”, “availability of free time” and “access to internet and digital services” and “access to culture”.</p>
<p>Interviews</p>	<p>Regarding Roma, there is no “evident” hate against them, but there is still a feeling of “distrust and suspicion”. There are not specific big events of discrimination against Roma in the public spaces. There are instead some small daily events of harassment (e.g Roma guy who went to the first aid for a tooth pain was rejected by a nurse who said that Roma are rich so they should go to a private doctor). Even though there is no explicit hostility against Roma living in the community, the discrimination based on family names still hinder their access to employment. For Roma, employment satisfaction (which means having a job and having a good job) is crucial for well-being. For Roma, it is also crucial</p>

⁷²[Chapter 7 \(europa.eu\)](#)

	<p>to fight racism. For Roma, housing conditions and financial satisfaction are more important than the other well-being factors. Social inclusion is another crucial factor, but depends on how people are included. There is still little knowledge about Roma in order to talk about inclusion .When coming to IN-HABIT VIS, Roma affirm that a common place should make everyone feel welcoming and included. For Roma, all activities improve the life of all though they do not have a specific value for them. However, it is important that in the revitalised space, everyone can recognize themselves, inspiring in all people a sense of belonging and therefore a sense of caring. In order to make it effectively inclusive, it is necessary to overcome racism and ignorance in the area, make it environmentally sustainable (solar panels), and culturally lively through videos and movies that promote the culture and stories of all groups. They proposed to add some symbol linked to their specific “culture”: for instance, for Roma a “Porraimos” memorial, or a plaque with words from a Roma poet or writer. For Roma, it has been stressed the link between the necessity of monetary incentives and the marginalized living conditions which they often experience. With regards to the means of engagement for Roma people, 4 out of 5 NGOs indicated “monetary incentives”, and 3 out of 5 NGOs indicated the “free access to cultural, sport and leisure activities”.</p>
<p>Sub-dimensions of IHW that are sensitive to ethnicity and religion</p>	<p>Social inclusion, Social cohesion, Discrimination, Equality, cultural participation, Leisure and free time</p>



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The following text is added to paragraph 4.5.1 letter b.

The ongoing quantitative evaluation also includes a survey to local stakeholder that will be run at least twice in each city.

- *The first survey will be a multiple-choice and open-ended questionnaire, prepared by UNITO-CCA, addressed to a set of local stakeholders (both public and private ones) and administered by the local activators. The survey is aimed at collecting data to assess the ongoing impact of the VISs on the local population and to compare the results across city. The data collected will be analyzed through a mix of qualitative and quantitative methods by UNITO-CCA. The results of the analysis of the collected data will be the object of deliverable D7.7 (M36).*
- *The second survey will be a multiple-choice and open-ended questionnaire, prepared by UNITO-CCA, addressed to both local stakeholders and residents and administered by the local activators. The survey is aimed at collecting data to assess the ongoing impact of the VISs on the local population and to compare the results across city. The data collected will be analyzed through a mix of qualitative and quantitative methods by UNITO-CCA. The results of the analysis of the collected data will be the object of deliverable D7.4 (M48).*

The following text replaces paragraph 4.5.1 letter c.

c. STEP 3: ex-post evaluation (Task 7.5 Ex-post IHW impact assessment, M49 – M60)

An ex-post study is run in each city by UNITO-CCA and UREAD.

The ex-post quantitative evaluation includes:

- *data collection through surveys. A general survey on IHW will be administered in each city. At least 200 structured questionnaires will be distributed on line and in person by local community activators, with the involvement of all the city partners. Data on subjective wellbeing (including psychological well-being, mental distress and life satisfaction) are analyzed by project partner UREAD, while data on social, economic, spatial-environmental well-being and healthy lifestyles are analyzed by project partner UNITO-CCA. The distribution of the survey will be supported by the local community activators with the help of local organizations and institutions working in the selected city areas (local observers).*

Control groups are used in the ex-post city surveys to compare the differences over time (pre-post intervention) on the selected H&W aspects between two groups of participants (people living or attending the intervention areas and people not living nor attending such areas)

The ex-post qualitative research includes the following activities carried out by the city partners:

- *focus groups: around 5-10 participants per are selected among those who are expected to live/attend the intervention areas for the whole duration of the project.*
- *content analysis from storytelling (both visual and textual contents) to explore changes on health and well-being of local inhabitants through narrative patterns. Around 5 stories per city are collected by local community activators in the local language and analyzed by the city partners.*

Revised Table 5

Year	2021	2022-2023-2024	2025
Managing partner	Isim, UREAD	UNITO-CCA, UREAD	UNITO-CCA, UREAD
Task	Ex ante evaluation	Ongoing evaluation	Ex post evaluation
Quantitative research	<p>Secondary data analysis</p> <p>General survey on IHW (1 per city)</p>	<p>Short survey to local stakeholders and residents by UNITO-CCA</p> <p>Short surveys to residents by each city partners</p>	<p>General survey on IHW (1 per city)</p>
Qualitative research	<p>Focus groups or interviews by each city partners</p> <p>Storytelling by each city partners</p>	<p>Focus groups or interviews by each city partners</p> <p>Storytelling by each city partners</p>	<p>Focus groups or interviews by each city partners</p> <p>Storytelling by each city partners</p>