



The HEPNESS perspective for active cities development



Project co-funded by the Erasmus+ Programme of the European Union



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THE HEPNESS PERSPECTIVE FOR ACTIVE CITIES DEVELOPMENT

HEPNESS - HEALTH ENVIRONMENT PROMOTION AND ECOSYSTEM SERVICES SUPPORT FOR ACTIVE CITIES DEVELOPMENT

Editors:

Raffaella Lioce, Giovanna Monsutti, Jan van der Borg

Graphics, layout and editing:

Giovanna Monsutti

First edition:

Venice, 2018

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Department of Economics

The most of the papers of the publication are written by non-native speakers

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INTRODUCTION

Raffaella Lioce, Giovanna Monsutti

This publication includes papers describing the main outcomes of the HEPNESS PROJECT, co-funded by the European Union in the framework of the *Erasmus+ Programme, Sport Action*.

The project stimulated the networking between cities that recognize sport as a horizontal integrated urban policy, necessary to place human well-being into the core of cities development plans.

Public authorities play a key role in enabling and encouraging citizens to become more physically active, and healthy: squares, green public spaces, common assets and pedestrian areas and cycle paths and lanes can be re-thought as a part of a distinctive active city program. Natural and cultural ecosystem services can be enhanced by a sport perspective.

Taking into account (i) the Communication for Developing the European Dimension in Sport, which affirms: “sport is a tool for local and regional development, urban regeneration, rural development, employability, job creation and labour market integration”; (ii) the Active City strategy, which asserts: “city settings have an increasingly important role to play in tackling inactivity and fostering sustainable participation in Sport for all and physical activity”; aware that cities have a great role in promoting citizens’ health and community well-being, the HEPNESS project fostered the leadership of municipalities in health promotion and highlighted the need to raise the awareness of outdoors sport and physical activities for well-being.

THE OUTPUTS The main project outputs are:

- a wide literature review on active, sport and healthy cities;
- a conceptual framework to design recreational areas and enhance ecosystem services in the urban environment;
- a methodological tool to plan and monitor HEPNESS cities policies;
- discussion papers about sport in the urban environment;
- a framework of good practices to inspire city leaders in developing actives sport cities.

This publication is structured in two main parts:

1. The first part provides cities leaders and practitioners with the HEPNESS perspective: starting with a literature review, we afford a shared approach to urban common settings and related natural and cultural ecosystem services, we provide an indicator system defined to both strategic planning and monitoring of active cities policies impacts; this first part closes with the Hepness cities challenge: a call for cities to improve citizens well-being in the urban environment.

2. The second part provides a framework of practices, including the HEPNESS pilot actions, to inspire cities practitioners and decision makers to design and develop new sport settings, and programmes in collaboration with sport clubs, cultural associations and citizens. The project acronym which recalls the word *happiness*, actually derives from the union of the following concepts:

HEPA "Health Enhancing Physical Activity", as promoted by the Council Recommendations (25th November 2013) and as recommended by the World Health Organization (WHO)

Natural EcoSystem Service

and it means "Healthy Environment PromotioN and Ecosystem Services Support for Active Cities development".

REFERENCES The scope of the project has been identified taking into account the followings policies and studies:

WHO, "Promoting physical activity and active living in urban environments. The role of Local Governments" (ISBN 92-890-2181-0);
Zagreb Declaration for healthy cities;
HEPA-Handbook, delivered by the network for European knowledge exchange in sports development;
Territorial Agenda 2020; TAFISA, Active city development Strategy;
Results of the project: SportCityNet, Cities for health, E-One;
Designed to move: a guide for city leaders;
The world urban campaign "The city we need";
The RTP1 "Planning Horizons: Promoting Healthy cities";
Several researches related to ecosystem services (where it is demonstrated that natural and cultural ecosystems provide services and supports for active life and healthy community's development);
Studies related to the effects of inactivity on health and economy, and to sport benefits for health.

The project has been developed by a balanced partnership encompassing:

- *Active cities*
Municipality of Vicenza (Italy)
City of Bonn (Germany)
Armagh City, Banbridge & Craigavon Borough Council (United Kingdom)
- *Sport Associations*
Footura - National Movement Union for Development of Sport and Sports Culture (Bulgaria)
USMA - Maria Ausiliatrice Sports Union (Italy)
- *Research centres*
Ca' Foscari University of Venice - Department of Economics (Italy)
Research Centre of the Slovenian Academy of Sciences and Arts,
Anton Melik Geographical Institute (Slovenia)



part 1



A COMPREHENSIVE LITERATURE REVIEW ON HEALTH PROMOTION WITHIN ACTIVE CITIES' ENVIRONMENT

Hristo Dokov, Ivaylo Stamenkov

The wide scope and the interdisciplinary character of HEPNESS, and of the active cities concept itself, suggest engaging in the research process all three main branches of science (social, natural, and formal sciences) with a special emphasis on urban design, spatial planning, geography, economics, social studies, statistics, environmental studies, health studies, etc. Moreover, the adopted holistic approach in developing the project also conceptualizes the need of utilizing multisectoral approaches that take into account the diverse influences and the interactions between sport and physical activity, healthcare, cultural and ecosystem services, infrastructural issues, public-private partnerships and networks, etc. From that point of view HEPNESS is not only complex in nature, but its domain also covers a multitude of theoretical and practical aspects that need to be addressed when constructing and implementing studies or activities dedicated to active cities.

The literature review is designed as both a summary and an explanation of the current state of knowledge regarding active cities concept and its connection with the above-mentioned topics. Thus, the major aims of the literature review are to explain key terms, summarize main discourses, highlight some of the most important results, findings, and conclusions from diverse studies, and identify certain inconsistencies and gaps in the research. Doing this could also be perceived as a crucial step in realizing successfully the HEPNESS project itself as the literature review was meant not only to provide easy access to research on particular topics to HEPNESS scientific partners, but also to be a useful instrument referred to when designing and realizing the innovative pilot actions.

As a first step, a database containing over 100 sources was created, with all HEPNESS partners able to contribute and propose literature to be included. Given the wide topics and the significant research in some spheres, we tried to concentrate predominantly on newer papers selecting high quality studies that are relevant, important, meaningful, and valid. Also, to get a thorough view of the active cities

related topics, we examined not only academic books and journal articles, but also many official documents (strategies, frameworks, guidelines, plans, etc.), as well as some project-based deliverables.

**PHYSICAL
ACTIVITY AND
ACTIVE LIVING**

The importance of physical activity and active living for the modern society is a wide research topic with many studies and documents dedicated explicitly to that issue. There are numerous definitions of what physical activity is, but the most widespread is that of the WHO: “Physical activity is defined as any body movement, produced by skeletal muscles, that requires energy expenditure”. Health-enhancing physical activity (HEPA), on the other hand, is any form of physical activity that benefits health and functional capacity without undue harm or risk, thus, it is tightly connected with sport activity. However, a philosophical difference exists between sport promotion and HEPA promotion in that there is a shift away from sport skills, coaching, and elite performance towards mass participation in everyday lifestyle activities. The physical activity itself can be fulfilling in various forms: walking, running, cycling, and other types of sports, in home, office, or sport halls, but also outdoors.

The most common understanding of active living is a lifestyle that reduces to a minimum the sedentary habits at the expense of increasing physical activity. Sometimes active living is considered an element of physical activity, such as in the model perceiving physical activity as a comprehensive concept that consists of four main components: Active Living (housework, gardening, playing with kids), Active Travel (walking, cycling, jogging), Active Recreation (exercise, dance, walking, cycling, active play) and Active Sport (organized participation, structured competitive activity, unstructured sport events) (Kirklees Council, 2015). However, in most of the literature sources active living is generally understood as a wider concept covering all of the above-mentioned activities.

Sport and active living have gradually turned into a global phenomenon that produces significant direct and indirect impacts on the development of the society. As a tool for health-enhancing physical activity, the sport movement has a greater influence than any other social movement (EC, 2007). It can be a very valuable way of engaging a variety of social groups with a view to transmitting certain values and ideas, developing personal skills, building up steady cooperative communities, and bettering health and well-being. In fact, in some cases sport can make virtually unique contributions, build social capital, and be particularly effective in certain aspects and areas where other schemes have failed (Dokov et al., 2016).

Over the last decades scientific evidences on the health benefits from physical activity have increased substantially. Recent research works have further highlighted physical activity as a fundamental health promoting human behaviour with multiple positive impacts (Valle and Kompier, 2013). Physical activity reduces significantly the risk for certain serious diseases, improves cardio-respiratory and muscular fitness, prevents weight gain and falls, provides better cognitive function (US Dep. of HHS, 2008). Regular physical activity has also a positive effect in terms of stimulating and protecting brain function (Radosavljević et al., 2013). In addition, it is widely accepted as behaviour to reduce all-cause mortality rates and to improve a number of health outcomes (Kesaniemi et al., 2001). In that context, the WHO (2018) has identified physical inactivity as the fourth global risk factor for mortality, with an estimated of more than 3 million deaths worldwide each year.

EFFECTS AND IMPACTS

Participating in sport not only enhances physical health, but also brings positive social and psychological effects, including increased self-esteem, development of life skills, decreased involvement in risky behaviours, etc. Engagement in physical activity prevents stress, anxiety, and depression. In addition to these physiological benefits, participation can also improve cognitive and educational performance and provide valuable development experiences. Research has found that sport can be a means for overcoming discrimination, build social connections, and attract young people to out-of-school educational programs. It can also be quite helpful in dealing with youths-related problems as regards inadequate usage of the spare time, growing aggression, inclination to follow negative social models, etc. The sport sector can play the role of a messenger for many social values and norms. Research also suggests that it might turn into an arena for developing social skills like cooperation, responsibility, empathy, and self-control, as well as promote good citizenship, social success, positive peer relations, leadership skills, and a sense of initiative (Stattin, 2000; Fraser-Thomas et al., 2005; Fraser-Thomas and Côte, 2006; Bailey et al., 2009; Sztankovics, 2013). Surveys by Takács and Kmetty (2014) also provide proofs that young people practising sports are more likely to participate in the work of civil organisations. Moreover, the relationship seems to be stronger than expected as sport proves to be a more important background variable in the models than the access to economic and cultural resources. Recently, there are also a number of papers discussing the positive role of sport and physical activity for the social integration of migrants (O'Driscoll et al., 2014).

The mal-effects caused by the lack of physical activity in the EU are well recorded, as are the significant direct and indirect economic costs associated with the lack of physical activity and related health problems. A rough estimation for 2013 suggests that 54 billion dollars are spent in direct healthcare costs, over half of which are paid by the public sector, while between 1% and 3% of the healthcare costs worldwide is due to physical inactivity (WHO, 2018). The sedentary lifestyle might have even stronger negative impact on the economic development of Europe in view of the fact that most European societies are ageing rapidly. Not surprisingly, physical inactivity has been identified as a leading risk factor for premature mortality and disease exactly in the high-income countries worldwide (UKK Institute, 2000). On the other hand, increased physical activity, being a prerequisite for a healthy lifestyle and a healthy workforce, is supposed to contribute enormously to the achievement of key objectives defined in the Europe 2020 Strategy, notably with regard to growth, productivity, and health. Other positive long-term economic impacts are generally associated with increase in tourism, business, investments, and reducing of absenteeism, staff turnover, individual transportation costs, etc. More active people generally use less individual cars fostering in this way a number of financial, psychological, and environmental benefits. Wide evidences are also provided for the assumption that sport can contribute positively to many aspects of urban regeneration (Coalter et al., 2000). Perceived as a useful mechanism, sport tourism is used as a growth strategy that cities adopt in order to achieve strategic corporate objectives, e.g. urban regeneration (Olukoya, 2012). A particular sub-set of the literature on sport and economic regeneration is about the promotion of urban sport events (Gratton and Henry, 2001). The role of sport in urban economies has been recognised, particularly in the context of deindustrialisation and the growing importance of the service sector. An assessment aspect is included in the document Sport England (2017) where the authors compare HEPA programmes in different countries in terms of impact on economic development and calculate a return of how many Euros sport provides for every 1 Euro invested. Further, Smith (2012) takes an interesting approach by studying how the formation and structure of cities' images as urban tourist destinations may be affected by the adoption of sport reimagining strategies.

Therefore, taking into account statements in diverse sources, we can conclude that physical activity has multiple outcomes and could definitely improve overall quality of life. Based on The Human

BENEFITS Capital Model, a comprehensive set of benefits of physical activity is presented at 6 levels (Bailey et. al., 2015):

- physical (all forms of improvements related to general motor skills, muscular strength, bone health, joint health, immune system function, sleep patterns, etc.);
- emotional (enjoyment, satisfaction, self-esteem, intrinsic motivation for physical activity, mood, etc.);
- social (positive relationships, social status, social inclusion, collaboration, civic participation, gender equality, crime, bridging differences, etc.);
- individual (activity knowledge and skills, non-cognitive skills, goal setting, leadership, responsibility, enthusiasm, self-discipline, etc.);
- intellectual (educational attainment, mental flexibility, memory, academic performance, concentration, attention, etc.);
- financial (income, job success, productivity, job performance, etc.).

Further strengthening the HEPNESS concept are scientific evidences that outdoor activities, in a natural and cultural environment, generally result in stronger impacts and benefits than practices in a built environment or indoor. In more than half of the studies reviewed, participants' mood and attitude are significantly more positive following outdoor compared to indoor activity (Barton and Pretty, 2010). Those participants reported greater revitalization, self-esteem, positive engagement, vitality, energy, pleasure, and delight, as well as lower frustration, worry, confusion, depression, tension, and tiredness.

ACTIVE CITIES PERSPECTIVE Given the current conditions and the development of modern societies, the idea of active living can't be realized to its full potential if it is not supported by the places people live in. That is why the active cities concept implies commitment to certain values and engagement in the process of changing the environment to provide more alternatives for active healthy living. An active city is one that constantly creates and improves opportunities in the built and social environment and expands the resources of the community so that all its citizens can be physically active in everyday life (Edwards and Tsouros, 2008). Cities that make physical activity a priority, convert existing spaces into active spaces, and design environments for people to be active will create a legacy of physical activity (Spoon, 2015). Taking all that into consideration, we need more than ever adequate approaches to stimulate cities understand and use their potential and turn into a major vehicle of enhancing health and well-being of the society.

Building a strategy for fostering active cities, one of the most significant long-term documents in this sphere, “Global Action Plan on Physical Activity 2018-2030” (WHO, 2018), offers 4 strategic objectives (creating Active People, Active Societies, Active Environment, and Active Systems) with a total of 20 multidimensional policy actions. Following the active cities approach, Jan Gehl proposes a framework for connectivity based on: a lively city with a focus on the importance of life in the public spaces, in particular social and cultural opportunity; a safe city with a cohesive structure that offers short distances between destinations and variation of urban functions; a sustainable and healthy city where large part of the population walks (Revitalising city centres, 2016). Thus, cities are under pressure to find new ways to engage more of the citizens and sustain participation while meeting certain environmental requirements, complying with the changing community norms and expectations, and operating generally within the confines of limited budgets (Gál and Kresta, 2014). That suggests finding and utilizing new concepts, methodologies, and instruments to develop innovative, smart, cost-effective, and sustainable solutions.

While health has emerged as an increasingly prominent social challenge, political decision-makers have gradually realized that active cities perspective should find its place in the political agenda. This has become evident in many national physical activity programs as well as in the WHO and EU sport-related policies, guidelines, frameworks, programmes, plans, etc. Given the vast number of those documents, and that the most important are considered inherent part of the HEPNESS framework of practices and cited there, here we don't make a detailed review of them.

The elaboration of a feasible, efficient, and holistic active cities perspective should take into account the interest, the needs, and the visions of all HEPA-related stakeholders and stockholders in order to ensure multiplier effects. The potential stakeholders and stockholders could be a wide range of political, health, sport, commercial, environmental and other organisations. The diversity and the number of organisations attracted could turn into a key factor in terms of implementation, results, impacts, and long-term sustainability. Municipal authorities could naturally play a central role in the process of promoting active cities, ensuring adequate functioning of the whole system and establishing the corresponding network of partners that “creates new working cultures and strengthens the capacity of institutions and city departments to support people-centred services” (WHO, 2013). They could

also provide impetus for grassroots sport clubs, seen as informal educational environments, to change the common passive approach to a more active and aware pattern that is in line with HEPA vision (Dokov et al., 2016). Itkonen and Salmikangas (2015) present a case-study for Finland and provide evidences of how differentiated sport culture, growing social significance of sport, and new forms of activities and products has changed the roles of the different sectors and provoked constant revision of the relationship between the public, private, and civic sectors.

**URBAN
PLANNING
AND ACTIVE
LIVING**

Urban spatial planning could easily be recognized as one of the cornerstones of the active cities concept. Political leaders and urban planners play a pivotal role as planning must provide diverse opportunities for physical activity and adapt a wide range of individual preferences and abilities – adequate, accessible, and safe transport systems, efficient sport-related infrastructure, multifunctional parks, public open spaces, pedestrian zones, recreation areas, squares, playgrounds, etc. Decision-makers and designers should consider how features in all setting can be optimized for physical activity and multiple other benefits (Sallis and Spoon, 2015).

This could be even more challenging taking into account the fact that for the first time in human history more than half of the world population lives in the cities, while the rate of urban population increase is higher than ever. Therefore, the importance of any kind of research on the relationship between urbanization and human health will grow steadily (Leeuw, 2001). Here the topic of urban planning again comes out – a well-planned city can promote better mental and physical wellbeing, quality of life, and opportunities for all (Promoting Healthy Cities, 2014).

Many versatile studies discuss the potential role of urban planning in support of active living, sometimes also offering concrete approaches and tools. Davies (2010) explores favourable impacts of urban policy shifted towards the use of sport as a tool for regenerating declining areas. His visions are based on sporting infrastructure constructed in various British cities with a view to addressing the dual aims of sporting need and urban regeneration. Collarte (2012) studies the “woonerf” concept and concludes that it is extremely valuable in terms of active cities promotion. The concept offers a model to rethink a residential street’s design viewing it as a social space, rather than just a channel for vehicular mobility. Further, Wridt (2010) illustrates the utility of qualitative spatial analysis to understand

relationships between children's perception, the built environment, and social factors that shape children's active transport, leisure, and recreation in their neighbourhood. Having in mind that social equity is related to accessibility, i.e. the possibility of walking or biking from home to a public park, Macedo and Haddad (2016) examine the spatial distribution of urban parks (in Curitiba, Brazil) and how it relates to the socio-economic conditions of surrounding neighbourhoods, conceptualizing in this way the need for a better urban spatial planning. By studying the actual, unstructured use of a park in Buffalo (USA), Baek et al. (2015) explore the role of park design on the intensity of physical activity among youths and state that key features of parks are: complexity in landscape surfaces; proximity to sport facilities and playgrounds; the availability of pedestrian trails; and geometric arrangement of natural and built park amenities. Planning and public health scholars have developed instruments to measure park quality, but most of these tools require costly and time-consuming field surveys and only a handful focus specifically on youth. Rigolon and Németh (2016) rectify these issues by developing the Quality INdex of Parks for Youth (QUINPY), which relies on publicly available geospatial data to measure park quality.

ECOSYSTEM SERVICES Another inseparable part of active cities concept is connected with ecosystem services. The manifold interrelationships between humans and nature are a key topic for several scientific communities, however, in the past few years the concept of ecosystem services has become the most dominant paradigm in this general research field (Bieling, 2014). Ecosystem is “a dynamic complex of plant, animal and microorganism communities, and the non-living environment acting as a functional unit. Ecosystem services, in turn, are the goods and benefits people obtain from ecosystem functions”. At the heart of the ecosystem services approach is the aim of fostering systematic valorisation of nature as a means towards conservation and human well-being. Generally, 3 specific types of direct benefits (both tangible and intangible) are recognized (MA, 2003): provisioning services – products obtained from ecosystems; regulating services – benefits obtained from regulation of ecosystem processes; and cultural services – non-material benefits obtained from ecosystems (e.g. recreation and esthetical values).

In a view of the HEPNESS approach, it is also important to take into consideration that “ecosystem services are crucially dependent on social processes” (Bieling et al., 2014), and “can either encourage the maintenance of valuable landscapes or act as barriers to necessary

innovation and transformation” (Brown, 2015). Considering the roles of cultural and ecosystem services in communities, Brown (2015) distinguished 3 main aspects: provisioning of opportunities for ecotourism and outdoor recreation; driving gardening and harvesting practices; and stimulating the emergence of collective landscape stewardship. As the contact of urban residents with natural or semi-natural ecosystems is often limited, opportunities for everyday outdoor recreation are particularly important. Recreation and tourism represent a major chance and nexus for managing the interaction between ecosystems and people, including the development of a constituency that appreciates and supports protection of ecosystems (Daniel et al., 2012). They provide many important benefits (Breslow et al., 2016), such as physical exercise, aesthetic experiences, intellectual stimulation, inspiration, and other contributions to physical and psychological well-being, contributing to the welfare of communities. Meanwhile, numerous studies have shown that even short exposure to green spaces can have positive effects on human health, thus also contributing to the economic productivity of society (Daniel et al., 2012). Public green spaces are also important venues for promoting outdoor physical activities that improve health. Some authors also point out the very positive role of urban green commons (Colding and Barthel, 2012). Also closely connected with HEPNESS-related issues is a study by Jennings et al. (2016), who examine an emerging frontier in environmental justice – the movement to ensure that urban ecosystem services and health benefits they provide are equitably distributed among all segments of the population. Satz et al. (2013), however, emphasize on the existing gap in measurement of cultural ecosystem services.

Paracchini et al. (2014) aim to provide a framework for addressing outdoor recreation as an example of cultural ecosystem services, while their work is part of a larger effort to set up tools and methods for the spatially explicit evaluation of ecosystem services. Therefore, a model is developed to assess the availability of outdoor recreation potential to citizens. Results show that 38% of the EU territory is characterized by a high outdoor recreation potential, which is easily accessible, and that such areas can host about 35.4% of potential demand for close-to-home trips (<8 km). This proportion increases to 37.6% for long distance travelling (<80 km). The analysis framework can be applied to quantify the availability of outdoor recreation potential as an ecosystem service to EU citizens, to describe through country profiles differences in ecosystem service provision at regional level, and can be used as an input to land use planning processes. A

study by Plieninger et al. (2013) documents that people find various cultural values in their everyday surroundings, not only in landscapes of outstanding biodiversity, heritage, or scenery. Simultaneously, use of cultural services opens up opportunities for more inclusive strategies, commonly labelled as sustainable or cultural landscape approaches. Schaich et al. (2010) states that research in “cultural landscape” and “ecosystem services” should be conducted jointly to enhance the understanding of cultural ecosystem services in social-ecological systems and to develop methods of assessment.

Cultural landscape research may enrich ecosystem services research as it builds on a long tradition of interdisciplinary and transdisciplinary environmental studies. It provides different perspectives on the interactions between man and nature, and deepens the understanding of the role of humans in landscapes and ecosystems.

**EMPIRICAL
RESEARCH
AND SURVEY**

In contrast with the topics discussed above, the literature review suggests that HEPNESS-related empirical research is relatively scarce. In one of the newest studies Breda et al. (2018) design a questionnaire to capture information on 23 physical activity indicators that are in line with the monitoring framework proposed in the EU Recommendation on promoting HEPA (2013). Of the 27 EU countries that responded to the survey, 22 have implemented actions on more than 10 indicators, four countries have implemented more than 20 indicators, and only one country has fully addressed and implemented all of the 23 indicators of the monitoring framework.

One of the most valuable researches at EU level, in terms of providing statistical data, is the Eurobarometer survey (2014), covering almost 28 000 respondents. It found out that the vast majority of Europeans (59%) never exercise or play sport. This survey also uncovered that a substantial proportion of respondents (13%) had not walked for ten minutes at a time in the previous week. Such findings might indicate that the message about the importance of sport and physical activity has not yet got through to significant segments of the EU population. The survey also indicates demographic variations. For instance, women (in particular in the younger age groups) are far less active than their male counterparts, and young women are more likely to feel that local authorities do not do enough for its citizens in relation to offering opportunities for physical activity. The survey’s results show large disparities among EU Member States on many questions. The more physically active countries are overall clustered in the Northern part of the EU, while the less active are mainly the Southern countries. Such findings suggest that there might be scope

for some Member States to learn from good practices established in other countries.

The Global Action Plan on Physical Activity 2018-2030 emphasizes that, worldwide, 1 in 4 adults, and 3 in 4 adolescents (aged 11-17 years), do not currently meet the global recommendations for physical activity set by WHO, with Europe identified as one of the most problematic regions. Generally, as countries develop economically, levels of inactivity increase. In some countries, levels of inactivity can be as high as 70%, due to changing patterns of transportation, increased use of technology and urbanization. In addition to the changing technologies and cultural values, the differences in physical activity are also determined by gender and social status with girls, women, elderly people, those with disabilities and chronic diseases, marginalized and rural population often being the most vulnerable and having fewer opportunities to access safe, affordable, and appropriate programmes and places in which to be physically active. Generally, the lack of leisure-time physical activity tends to be more common in the lower socio-economic groups. Faskunger (2013), on the other hand, scrutinizes specific negative factors that interfere in children's active lifestyles such as dangerous routes to school, densification of neighbourhoods, speeding vehicles, large increases in traffic volumes, lack of maintenance of school yards and community playgrounds, etc.

Several studies have tried to shed further light on to why people do or do not involve in sport and physical activity. Godbey (2009) scrutinizes variables that affect participation in outdoor activities and considers the projected demographic changes that will affect policymaking in this arena. Spinney and Millward (2013) provide an empirical investigation into the durations and distances that respondents are willing to travel in order to engage in various sports and recreation activities. Results (based on a case-study for Halifax, Nova Scotia) indicate that duration-based and distance-based travel sheds are generally in the order of 15-30 minutes and 4-20 km, respectively. On the other hand, Allender et al. (2006) systematically examine published and unpublished qualitative research studies of UK children's and adults' reasons for participation and non-participation in sport and physical activity. They conclude that weight management, social interaction, and enjoyment were common reasons for participation among youths, while older people identified the importance of sport and physical activity in staving off the effects of aging and providing a social support network. Challenges to identity such as having to show others an unfit body,

lacking confidence and competence in core skills or appearing overly masculine, were barriers to participation. Similar are the results in a paper by Beni et al. (2017), who identify five themes as central influences to young people's meaningful experiences in physical education and sport in the UK: *social interaction, fun, challenge, motor competence, and personally relevant learning*.

Dealing with future challenges, Faskunger (2013) focuses on five key perspectives ahead of cities that want to promote active lifestyles: developing better cycling infrastructure between cities (as of today much more is invested in cycling infrastructure within cities than across settlements); improving methodology for urban planning by using GIS tools able to identify and abolish barriers to active living inherent in the structures of the built and natural environments; letting an ecological model guide the urban planning of parks and green structures to optimize their design; putting more focus on active living for children; concentrating more funding in walking and bicycling transportation. According Bill et al. (2015) computer visualisation tools may be an instrument to prompt behaviour change, leading to a shift towards more active modes of travel. Empirically derived travel thresholds can be used by urban planners to improve service-area analyses and help identify areas of the urban landscape where there is a need to enhance opportunities for various sports and recreation activities (Spinney and Millward, 2013).

Further perspectives for promoting of active cities could also be supported by advancement of conceptual and methodological assessment tools aimed to better operationalize cultural and ecosystem services for the needs of landscape management and planning. Mapping and modelling ecosystem services, participatory GIS, biophysical modelling, the integration of ethnographic methods with GIS, visitor simulation models, monetary valuation, systematic field walking, or photo elicitation could be extremely valuable for landscape management and planning (Brown, 2015).

Finally, no matter what kind of strategies, methodologies and tools will be used, every effort to promote active cities should be in line with "place-based approach" principles, taking into account the specifics of the locality. A lot of "what works" learning is highly specific (Sport England, 2017).

CONCLUSIONS To summarize, the brief overview of HEPNESS-related literature suggest that:

- significant research is done in the areas of sport and physical activity benefits, with physical and mental impacts being well-

- explored, individual development fairly well-explored, while evidences on community and economic well-being more patchy;
- there are numerous papers at supranational level (mostly institutional and project-based) tightly connected with health promotion;
 - despite active cities concept being relatively new, it has already become part of scientific and political agendas;
 - only a few papers are based on comparative analyses, while, on the other hand, there are many valuable case-studies, whose conclusions and recommendations, however, could hardly be applied to a wider territorial scope;
 - empirical studies are relatively limited with lack of data (especially at the lower territorial levels) being an important issue;
 - lots of studies confirm the importance of ecosystem services for health, but very few try to integrate this understanding into an active comprehensive city strategy/perspective;
 - a new conceptual framework is needed to connect all HEPNESS-relevant spheres and integrate them into a holistic active cities model.

HEPNESS PERSPECTIVE. A FRAMEWORK TO INTRODUCE CULTURAL ECOSYSTEM SERVICES TO RECREATION PLANNING IN EUROPEAN CITIES. EXPERIENCE FROM LJUBLJANA

Aleš Smrekar, Jernej Tiran, Katarina Polajnar Horvat

KEY WORDS *Urban green space, public space, ecosystem services, cultural ecosystem services, recreation, Ljubljana.*

Most Europeans live in urban areas, which on one hand offer numerous opportunities for achieving well-being, such as great variety of available workplaces, leisure activities, services of general interest and socializing in public places. On the other hand, people living in cities face negative environmental pressures such as pollution, overcrowding and information overload.

Constant exposure to *stimuli* demands a great deal of attention, which can cause mental fatigue. Trying to cope with the challenges of everyday life burdens people's physical and psychological condition and, combined with an increasingly sedentary lifestyle, has negative health consequences. What should be recommended to someone feeling stressed and anxious? Go to sleep? Go shopping? Play video games? Or take a walk or jog in the nearest park? Most people usually opt for the latter option, and not without reason. There is an abundance of evidence showing numerous health, social and psychological benefits of spending time in nature, urban green spaces or even simply outdoors.

The aim of the research was to test and transfer the concept of cultural ecosystem services, upgraded with the concept of restorative environments, to the planning and management of recreation in cities. The concept of cultural ecosystem services has been already introduced and acknowledged in other operational frameworks, such as environmental and conservation policy, while it is pretty unknown in the fields of health-enhancing physical activity, sports and recreation.

A part of the activities were tested in Ljubljana (Slovenia), which is an example of a medium-sized European city with a diverse set of green public spaces in the city itself and its surroundings.

HEPNES
BACKGROUND
URBAN GREEN
SPACES AND THEIR
RESTORATIVE
CHARACTERISTICS

People's relationship with green areas is inseparably linked to the spatial expansion of cities and has been largely reflected through the reaction to the loss of human contact with nature. That is why awareness about the importance of contact with nature seems to be on the rise. Along with their economic function and benefits, such as higher real estate prices (Kong et al. 2007), or environmental benefits, such as an improved air quality or improving resilience to climate change (Gill et al. 2007), the leisure and recreational function of urban green areas are of particular importance. There is an abundance of evidence that green space increases physical activity, reduces sedentary time and therefore improves the psychological well-being and the general health of urban residents (Maas et al. 2006; Richardson et al. 2013; Schipperijn et al. 2013; Wolch et al. 2014). Based on these facts, the public health benefits of urban green spaces are being constantly recognized in WHO reports urging to increase access to public open spaces and green areas with the appropriate recreation facilities for all age groups in order to support active recreation (e.g. Urban green spaces and health 2016). In addition, access to green space is being increasingly recognized as an environmental justice issue (Heynen et al. 2007; Wolch et al. 2014). Walking into nature is almost certainly one of the most widely practiced ways to release stress and fatigue in European societies (Joye and van den Berg 2013).

In comparison to exercise indoors or in a built environment, recreation in an urban green space produces additional benefits, such as enhanced mood or reduced stress, even in the case of accessing nature with limited physical activity through numerous restorative characteristics (van den Bosch and Bird 2018). In that sense, the term restorative or restoration refers to the experience of the psychological and/or physiological recovery process that is triggered by particular environments and environmental configurations, for example restorative environments, to change negative states to positive ones (Joye and van den Berg 2013). Numerous studies have shown that natural environments and urban green spaces tend to be more restorative than built environments (Velarde, Fry and Tveit 2007, Kurt and Hanes 2013; van den Berg, Jorgensen and Wilson 2014; Groenewegen et al. 2012). Exposure to restorative natural environments in urban areas contributes to reducing stress, promotes more positive moods, feelings and well-being, helps prevent disease and may facilitate recovery from illness (Verderber 1986; McAndrew 1993, Laumann, Gärling and Morten Stormark 2001). Among the various known theories explaining restorative environments, the

research has been guided by the modified Attention restoration theory (Kaplan and Kaplan 1989; Kaplan 1995), which asserts that people can concentrate better after spending time in nature or looking at scenes of nature (Kaplan and Kaplan 1989; Laumann et al. 2001) and assumes that environments can counter directed attentional fatigue when the human-environment relationship is characterized by a series of characteristics: fascination, novelty, escape, extension or connectedness and compatibility (Kaplan and Kaplan 1989; Laumann et al. 2001).

*(CULTURAL)
ECOSYSTEM
SERVICES* Human well-being is closely linked to the natural environment (including urban green spaces) and its values. Although this notion is well-established, it remains difficult to assess how the biophysical features of a specific area contribute to the well-being of the people attached to it (Bieling et al. 2014).

Economic literature recognizes two broad kinds of values in natural environments: use values and a non-use value. Use values encompass direct consumptive use values, such as the value of timber, fish or other resources that ecosystems provide, and direct, non-consumptive use values such as those related to recreation and aesthetic appreciation. Indirect use values relate to the services provided by nature, such as air and water purification, erosion prevention and the pollination of crops. A non-use value is the importance attributed to an aspect of the environment in addition to, or irrespective of, its use values. On the other hand, the question of how can we better articulate and understand multiple values of nature has attracted considerable research attention in the social and behavioural sciences as well. Previous investigations have indicated that tangible and, at times, monetized values of nature can maintain traction in political arenas and create meaningful opportunities to examine trade-offs among competing “ecosystem services”, defined as the direct and indirect benefits (e.g., clean air, flood control, timber, recreation) that nature provides to people (Costanza et al. 2007; Daily 1997; de Groot et al. 2002; Millennium ecosystem Assessment 2005).

However, in the past years, and with the Millennium Ecosystem Assessment (Millennium ecosystem Assessment 2005), the concept of ecosystem services has become a well-known paradigm in this research field (Bieling et al. 2014).

According to this framework, which served as a starting point for numerous further developments, ecosystem services are defined as “the benefits people obtain from ecosystems” (Millennium ecosystem Assessment 2005) and are grouped into four types of

direct benefits (Millennium ecosystem Assessment 2005):

- supporting services: make it possible for the ecosystems to provide services, e.g. food supply, flood regulation and water purification;
- provisioning services: products obtained from ecosystems, e.g. food and fibre;
- regulating services: benefits obtained from the regulation of ecosystem processes, e.g. climate regulation and water purification;
- cultural services: “non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experience, including, e.g., knowledge systems, social relations and aesthetic values”.

This research focuses on the non-material benefits related to ecosystems, termed cultural ecosystem services, which are the least understood element of the now widely applied ecosystem services framework. Such services can improve mental health, enhance a subjective sense of culture and place and enrich the objective knowledge of natural and social sciences (Millennium ecosystem Assessment 2005). They reflect people’s connections to identity, heritage values, inspiration, aesthetic values and recreation. They underline, most importantly, that the non-material benefits are actively created by people. This engagement with place involves a broad range of practices and sense experiences (Bieling et al. 2014; Železnikar et al. 2017). The health benefits of these services may be materially less tangible than those captured by conventional health indicators or standard economic valuation measures, but nonetheless, such services are highly valued by people in all societies. Various traditional practices linked to ecosystem services, including seasonal cycles of thanks and celebration, play an important role in developing social capital and enhancing social well-being (Millennium ecosystem Assessment 2005).

However, alongside all these benefits, ecosystems also produce nuisances, which are called ecosystem disservices (Lyytimäki and Faehnle 2009). Ecosystem disservices are defined as “the ecosystem-generated functions, processes and attributes that result in perceived or actual negative impacts on human well-being” (Shackleton et al. 2016). The notion of ecosystem disservices has its main roots in urban ecosystem research (Dobbs et al. 2014; Escobedo et al. 2011; Lyytimäki 2014; Lyytimäki and Faehnle 2009), particularly in work associated with complex human-environment systems that characterise urban areas (von Döhren and Haase 2015). They have been used to evaluate the value of green space for urban residents (Lyytimäki and Faehnle 2009, Lyytimäki et al. 2008), given that urban

green spaces can provide many ecosystem services but also a range of ecosystem disservices.

This research focuses on the psychological impact of ecosystem disservices, which are based on the assumption that urban green spaces may cause negative feelings of anxiety and discomfort, a feeling of insecurity and fear caused by densely grown urban green spaces (Tzoulas et al. 2007; Hofmann et al. 2012).

Recreation is one of the most important cultural services in the European context and is probably the most tangible one (Kenward and Sharp 2008). The majority of people engage in some form of outdoor recreation (Sievanen et al. 2009). Recreational activities, such as walking, jogging or playing outdoor games offer an opportunity for many people to directly experience the benefits of a cultural ecosystem. This applies especially to people living in urban environments, where contact with natural ecosystems is often limited (Daniel et al. 2012). It provides many important benefits, such as physical exercise, aesthetic experiences, intellectual stimulation, inspiration and other contributions to physical and psychological well-being (Chan et al. 2011). Studies (Bowler et al. 2010; Hartig et al. 2003; Karmanov and Hamel 2008) have shown that even short exposure to green spaces can have positive effects on human health and thus also contribute to the economic productivity of society.

**POLICY
FRAMEWORK**

Based on scientific evidence that physical activity can help battle health issues related to a sedentary lifestyle, overweight and obesity and its additional positive effects on mental health, the promotion of recreation and sports is also concretized in many documents and guidelines, such as *Guidelines for Health-Enhancing Physical Activity Promotion Programmes* (ENP HEPA 2000) or *Promoting sport and enhancing health in European Union countries: a policy content analysis to support action* (WHO 2011).

Performing physical activity outdoors and especially in a natural environment is particularly rewarding, resulting in, for example, lower somatic anxiety (Lawton et al. 2017). However, actions to boost physical activity outdoors require a comprehensive understanding of such benefits, cross-sectoral cooperation and a shift of academic findings to the policy field. The concept of ecosystem services can be helpful in this respect, as it can help us understand the complexity and benefits of natural and urban green environments, which are not limited to provisioning, supporting and regulating services, such as food provision, nutrient recycling or water purification, but also

include cultural services, like providing the non-material benefits that people obtain from ecosystems (Millennium Ecosystem Assessment 2005). The concept of cultural ecosystem services has already shifted from the academia to the mainstream of the conservation and environmental policy, while its integration into the health-enhancing physical activity (HEPA) policy framework is still unknown.

The analysis of the international guidelines and policies from sports and the HEPA field, systematically gathered and studied in the HEPNESS project, showed that only 3 out of 10 analysed documents emphasise the importance of outdoor recreation and state concrete guidelines. Such a poor result was expected to an extent, since the additional benefits of recreation outdoors and in natural environments for the health and well-being of the inhabitants have only recently been recognized by the academia and are only now starting to be transferred to the policy field.

These additional benefits were firstly jointly recognized by the WHO Regional Office for Europe and by the EU and its “Sport & Health” Working Group. In the first of two WHO publications (2008a), physical activity and active living in urban environments are promoted by presenting the scientific evidence in the social and urban domains of public health and related services. The role of local governments is pointed out in that it can create an inclusive, age-friendly environment for active living. It is expected that these solid facts can support, accelerate and legitimize policy changes and action. In the second publication (2008b), which is designed as a physical activity planning guide, planners and authorities are encouraged to implement action strategies in leisure and sport settings, including providing support sport and outdoor recreation organizations and investing in active leisure public facilities with paying attention to special population groups (e.g. children). Action strategies in urban design should conserve and develop green spaces and provide interesting, accessible, safe and well-maintained facilities.

The role of promoting outdoor recreation for enhancing health and an active lifestyle is probably the most comprehensively addressed by *EU Physical Activity Guidelines* (2008), a compiled set of recommended policy actions in support of health-enhancing physical activity. The guidelines are intended to primarily serve policy makers in the Member States as inspiration for formulating and adopting action-oriented national guidelines. The document recognizes sport activities in one’s leisure time as important for health, physical and mental well-being, especially for children. It stresses certain self-

organised physical activities, such as walking, jogging or rowing, which can take place not only in an urban environment, but also in a natural environment outside of town, where it can become more rewarding. The importance of policies concerning environmental preservation and management is emphasized, as well as support given by national or local governments to sustain the development and diffusion of such activities. This is explicitly formulated in Guideline 31, stating that:

“Public authorities should pursue not only the protection of the natural environment *per se* but also its potential to provide attractive outdoor spaces for physical activity. Effective conflict management should be put in place to balance the needs of different users, particularly motorised versus non-motorised visitors”.

An active lifestyle can also be promoted through urban planning and urban design. There are some documents and planning guides at the local/city level. One of them is the award-winning Active Design Guidelines for New York City (2010), based on the latest academic research and best practices in the field. It provides architects and urban designers with a manual of strategies for creating healthier buildings, streets and urban spaces. The guidelines follow the “active design” planning approach, which encourages more active lifestyles by creating streets and buildings that support and promote the physical health and well-being of the residents.

The urban planning approach is also being applied in initiatives and projects. One such example is the VITAL CITIES project, operating within the URBACT Networks programme, financed by the EU. It focuses on how to (re)design not only urban green areas, but all public spaces using the power and common language of sport for the promotion of a healthy lifestyle with a special focus on deprived residential areas. This endeavour stems from the belief that instead of bringing inactive citizens to sports facilities, public spaces should be turned into a low threshold facility inviting all citizens to engage in physical activities. This approach resulted in many actions and initiatives, such as installing a health path, reclaiming sports areas, or organising free sessions in parks and green areas (Health in Public Spaces ... 2017). There are also many good practices across Europe where recreation is being promoted and performed in outdoor public spaces and urban green spaces in particular. One such example are government-funded outdoor gyms all over the world, providing free of charge training facilities for fitness in parks or beaches (Hansen and Beha 2017), or the Active parks initiative in Birmingham,

resulting in numerous organized free outdoor activities in 80 parks and green spaces. The concept of cultural ecosystem services has not been integrated into the policy framework in the fields of HEPA and recreation yet. The concept has not even been recognized as important or potentially applicable, despite its potential to enhance the benefits of performing recreation and providing guidelines to direct it into spaces with the most additional services, values and benefits.

**EVALUATION
OF CULTURAL
ECOSYSTEM
SERVICES IN
PRACTICE.
THE EXPERIENCE
OF LJUBLJANA
SELECTION
OF CULTURAL
ECOSYSTEM
(DIS)SERVICES**

In our research, we chose cultural ecosystem services (Millennium ecosystem Assessment 2005) as specified below. We also included an additional category of shopping and hospitality services in this list as a kind of counterweight. This is because shopping and hospitality services can also be regarded as a form of recreation, but one that does not take place in natural environments (walking from shop to shop). We also included selected ecosystem disservices (Von Döhren and Hasse 2015).

The list of cultural ecosystem services and disservices:

- recreation and sport,
- education,
- aesthetics,
- relaxing,
- natural heritage,
- cultural heritage,
- sense of place,
- drawing inspiration,
- spirituality,
- shopping and hospitality services,
-
- dissatisfaction,
- fear,
- noise.

**INVENTORY,
TYPIFICATION
AND MAPPING
OF RECREATION
SPACES**

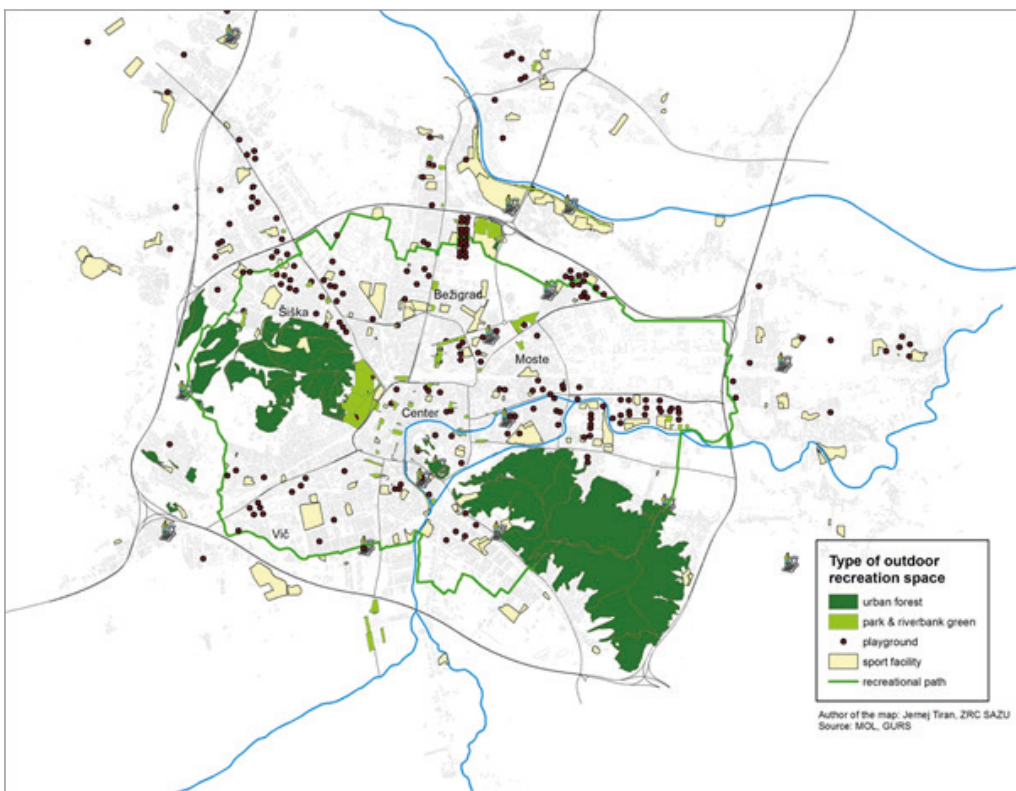
Due to the diversity of human needs, lifestyles and leisure habits in particular, people take recreation in various areas, which differ in terms of facilities, possibilities for activities and other characteristics, such as the amount of greenery. These spaces are not limited to those with an explicit recreational function, such as sports fields, playgrounds or urban green spaces, but also include places where people gather and spend their leisure time in a broader sense (e.g. socializing in bars, shopping). Based on the available public data,

our expert view and urban green space typologies (e.g. Cvejić et al. 2015), we compiled an inventory, typology and mapping of recreation spaces in the City of Ljubljana. These spaces are also believed to have a certain cultural ecosystemic value.

The typology consists of nine types of recreation spaces:

- large urban park,
- small urban park,
- neighbourhood green space,
- urban forest,
- riverbank green,
- sport facility,
- playground,
- shopping mall,
- old town.

Map 1: THE INVENTORY OF OUTDOOR RECREATION SPACES IN THE CITY OF LJUBLJANA



**LEISURE
HOT SPOTS
SELECTION**

In the next step, we selected 1–2 spaces of recreation from each type that represent a “hot spots” where people spend most of their free time. It is important to select spaces that are representative and frequently visited in order to achieve a decent response rate when surveying the users and get good results of the experts’ evaluation in the later stage. In case of a relative unfamiliarity with the case study area, it is suggested that the selection of recreation spaces is made in collaboration with city quarter representatives (e.g. through semi-structured interviews), who deal with the quality of residential environment on a daily basis. If the case study city is very large, it is reasonable to use one of the existing urban administrative structures with a division of the city into quarters or boroughs and possibly performing the study only in selected areas.

Map 2: THE CASE STUDY AREAS SELECTION FOR SURVEYING – THE CASE OF LJUBLJANA (1. large urban park; 2. small urban park; 3. neighbourhood green space; 4. urban forest; 5. riverbank green; 6. sport facility; 7. playground; 8. shopping mall; 9. old town)



**SURVEY
METHODOLOGY**

The method of direct surveying provides answers to numerous questions about how the local inhabitants evaluate the selected types of freely accessible public outdoor areas and how much they use these areas. It is also the only possible method, because this kind of data cannot be collected in any other way.

We start with each predetermined unit by finding the widest possible spectre of visitors at multiple microlocations and ask them to participate. Each survey respondent answers questions only for the specific unit where they happen to be at the time and which represents the selected type of the freely accessible outdoor public area. In short, the survey is based on extensive field work.

The sample size was 900 people and the prerequisite to take the field survey was for the respondent to have been living in Ljubljana for at least the past year (Survey on the value ... 2018).

	TYPE	LOCATION / NUMBER OF COMPLETED SURVEYS
1	large urban park	Tivoli (100)
2	small urban park	Park Zvezda (33), Park Argentina (33), Park Toscanini (34)
3	neighbourhood green space	The Šišenska soseka 6 neighbourhood (50), Nove Fužine (50)
4	urban forest	Rožnik (100)
5	riverbank green	Ljubljana River (50), Koseze Pond (50)
6	sport facility	Kodeljevo (50), Svoboda (50)
7	playground	Park Šmartinska (50), Kodeljevo (50)
8	shopping mall	BTC (50), Rudnik Shopping Mall (50)
9	old town	Around Town Hall (100)

The questionnaire is divided into several sections. In the first section, we asked the survey respondents how they value selected cultural ecosystem services and disservices (see chapter 4.1). The last group of questions in the first section relates to a modified questionnaire based on the Perceived Restorative Scale (Hartig et al. 1997) and the Restorative Component Scale (2001), which measures five restorative characteristics characterized (escape, fascination, coherence, compatibility, novelty). The participants indicated all three groups of the first section of questions on a 6-point Likert Scale.

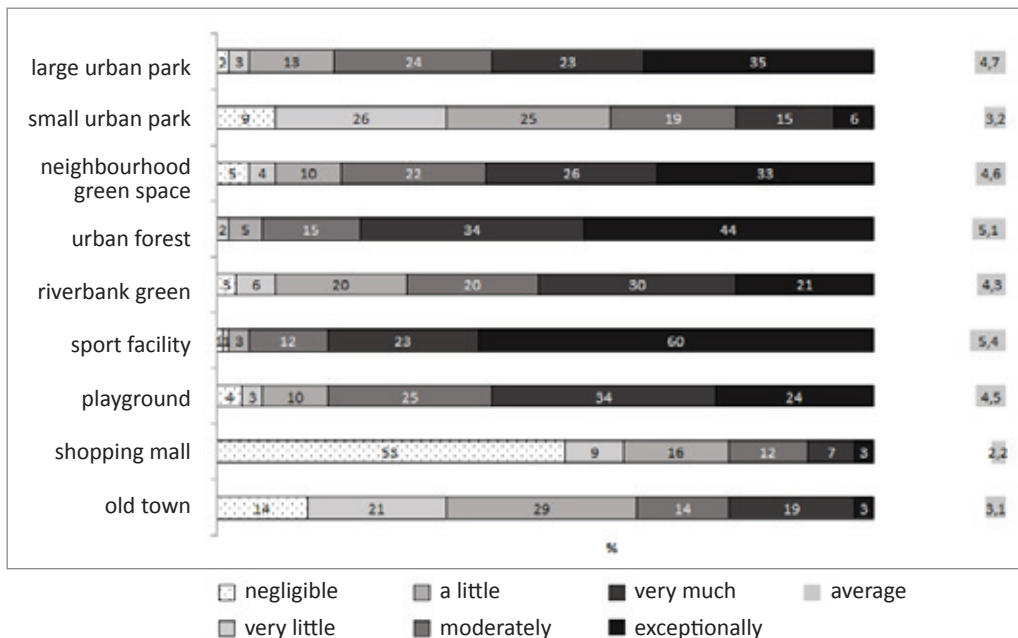
In the second section, we try to gauge what the participants do in these areas, how much time they spend in these areas, how much time they need to access these areas with their preferred mode of

transport and in what kind of social group they like to visit these places.

In the third and final section, we are interested in some basic socio-demographic data.

SURVEY RESULTS Recreation and sports are the most common cultural ecosystem services that can be observed on different uses of space in Ljubljana. **CULTURAL ECOSYSTEM (DIS)SERVICES** Unsurprisingly, people generally practice sports in sports facilities (5.4); consequently, as many as 60% of the survey respondents rate them as extremely valuable. As expected, urban forests (5.1) and large urban parks (4.7) are the second most popular categories. Shopping malls (2.2) and the old town (3.1) are deemed the least attractive from this point of view; however, 3% of the respondents still believe each of last two types are extremely valuable areas for recreation and sports. Perhaps the most surprising is the fact that people do not regard small urban parks as more valuable spaces suitable for recreation and sport (3.2). Riverbank greens seem to be the most valuable to the middle generation (4.3).

Figure 1: ESTIMATION OF THE VALUE OF RECREATION AND SPORTS IN DIFFERENT TYPES OF PUBLIC SPACES AMONG THE RESIDENTS OF LJUBLJANA



The inhabitants of Ljubljana regard sport facilities (4.7) as the best for **educational purposes**, with 43% rating them as extremely valuable, along with children's playgrounds (4.2). In contrast, they attribute a surprisingly low educational value to the large urban park (3.7), urban forests (3.6), small urban parks (2.9) and the understandably lowest value to shopping malls (1.9), which over half (55%) rate as negligible in that regard. It is not surprising that the educational value of nature has diminished in more natural landscapes, since the social value of nature has become generally significantly lower than its environmental and economic value at the global level as well (Van Riper and Kyle 2014). Young people (3.3) and the elderly (3.4) assign it a significantly lower educational value than the middle, active generation (3.9), many of whom likely also assume parental and educational roles. Similarly, survey respondents with an elementary school education (3.0) rated its value significantly lower than those with a tertiary education (3.6 and 3.7).

The inhabitants are **aesthetically** most drawn to the old town (5.0) with its rich cultural heritage. This is, surprisingly, followed by the admittedly very well-kept playgrounds (4.9) and the well-managed urban park and riverbank greens (4.9). The urban forest (4.0) received an unexpectedly lower rating, with as many as 13% of the respondents deeming it a trivial or unimportant space. This doesn't match with the findings of Bieling et al. (2014) that more natural areas are more attractive than anthropogenously transformed ones. It seems the more "untamed" nature is not attractive to urban residents, which is probably due to their increasing alienation. The least aesthetically pleasing to the survey respondents were shopping malls (3.2); however, 7% still rated them as extremely valuable. Finally, the higher the inhabitants' education level was, the higher they rated the areas' aesthetic value (from 4.0 to 4.5).

Inhabitants find it easiest to **relax** in the urban forest, the large urban park, the riverbank greens and the sport facilities (all 5.3); 51% rated the latter as extremely valuable. The inhabitants are least able to relax in shopping malls (3.3), even though 28% of them still attribute extreme or great value to this space.

In terms of **natural heritage**, the inhabitants place the large urban park (4.6) at the top, followed closely by riverbank greens (4.5); it is surprising that the urban forest (4.4) was not more highly ranked or the equally ranked sport facilities (4.4) with its highest, 32% share of "extremely valuable" ratings. The results correspond to a study by Plieninger et al. (2015), which found that the inhabitants have progressively less contact with natural areas and are therefore more comfortable in more urbanized nature. Shopping malls (1.8) are

deemed by far the least valuable by the inhabitants. People with a higher education (from 3.6 to 4.1) place more importance on natural heritage.

In terms of the **cultural heritage**, the inhabitants of Ljubljana place the most value on the old town (5.2) with as many as 87% of respondents deeming it very or extremely valuable and followed by the large urban park (4.3). Once again, the inhabitants rated the shopping mall (2.0) as the least valuable, with 53% even going so far as to deem it insignificant. Only those with an elementary school education place less importance on cultural heritage (3.4); people with the other three education levels rate it about the same (from 3.9 to 4.1).

So, which types of outdoor public areas are valued by the inhabitants of Ljubljana as **evoking the most emotion**? The differences are relatively small. The highest rated are riverbank greens (4.5); however, it is interesting that only 10% rated them as extremely valuable and 46% rated them as a very valuable area. As many as 27% rate neighbourhood green space as extremely valuable, although the average score was lower, 4.3. Once again, shopping malls received the lowest rating with a considerably lower score (2.6).

The inhabitants draw the most **inspiration** from sport facilities (4.3) and only a bit less from riverbank greens, neighbourhood green spaces and playgrounds (all 4.2). Interestingly enough, the urban forest (4.1) and large urban park (4.0) were rated lower on the scale. The least inspiration is to be found in shopping malls (2.9). Those with an elementary school education gather the least benefits from outdoor recreational areas (3.7), while those with a higher education value them much more and also in a more unified trend (from 4.0 to 4.1).

Spiritually, the inhabitants are most attracted to riverbank greens (4.1); however, only 7% of the survey respondents rated them as “extremely” valuable, which places them in sixth place out of nine in that category. They are followed by small urban parks and playgrounds (each 3.8), with shopping malls, unsurprisingly, receiving the lowest score (1.8).

In terms of **shopping and hospitality services**, the residents gave the highest score to shopping malls (4.8) and a significantly lower score to the old town (3.9). Urban forests (1.7), small (2.0) and large urban parks (2.2) received the lowest scores in this category. Respondents with a vocational education scored by far the highest here (3.7), while those with other education levels ranked significantly lower (from 2.7 to 3.0).

Figure 2: ESTIMATION OF THE VALUE OF INSPIRATION IN DIFFERENT TYPES OF PUBLIC SPACES AMONG THE RESIDENTS OF LJUBLJANA

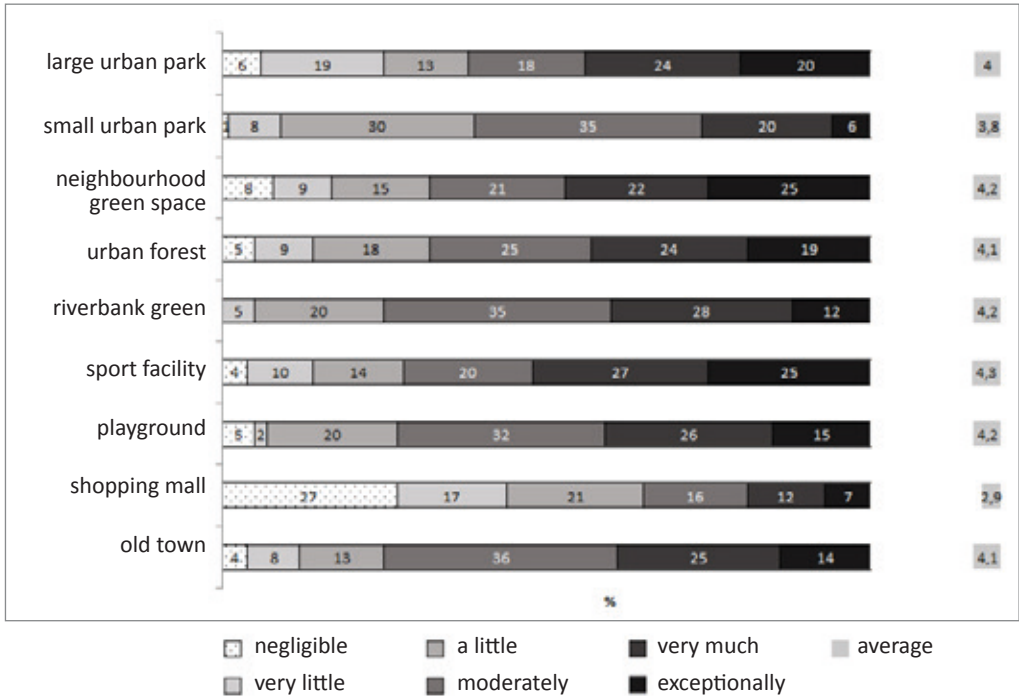
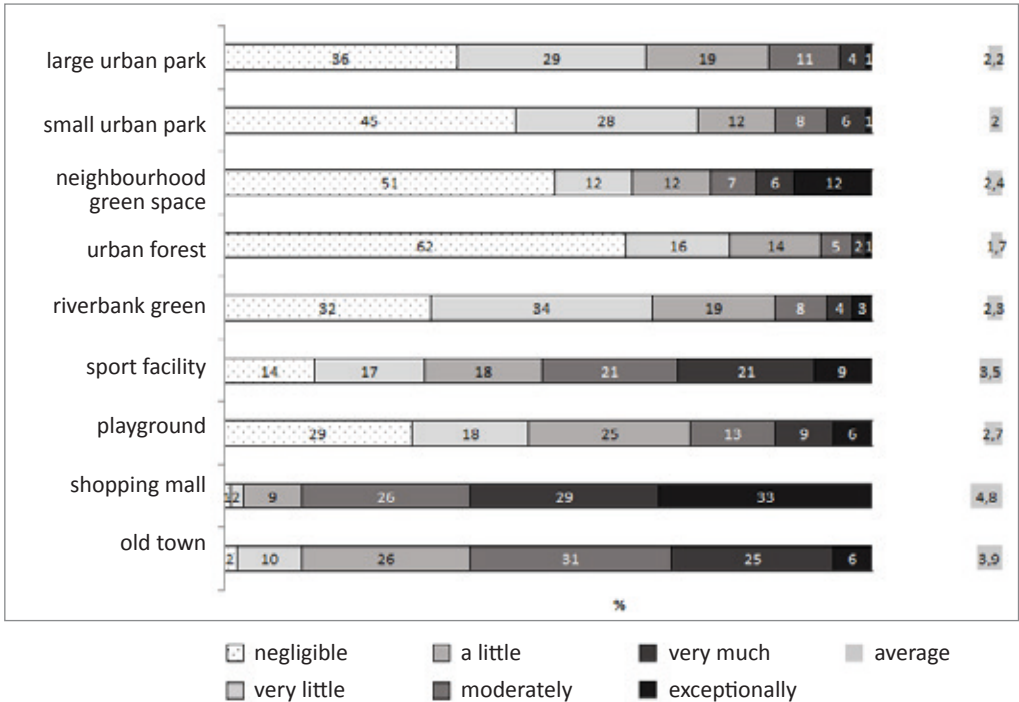


Figure 3: ESTIMATION OF THE VALUE OF SHOPPING AND HOSPITALITY SERVICES IN DIFFERENT TYPES OF PUBLIC SPACES AMONG THE RESIDENTS OF LJUBLJANA



The residents generally do not sense much **dissatisfaction** in any of the selected outdoor areas; the worst rated in this category was the large urban park (1.3), with as many as 73% rating dissatisfaction as negligible, while neighbourhood green spaces received the highest score (1.9). The sense of **fear** received similar marks ranging from 1.2 (old town, shopping malls and small urban parks) to 1.5 (urban forests), confirming the image of Ljubljana as a safe city. **Noise**, however, is a bit more problematic. Surprisingly, the least amount of noise pollution was rated for neighbourhood green spaces (1.6) and, more logically, in urban forests (1.8), while the highest level of noise disturbance was attributed to shopping malls (2.4); even there, 36% of the respondents ranked the noise level as negligible.

RESTORATION The results show that people feel the most intense **feeling of escape** in the urban forest (4.7), which is not surprising, since they answered similarly regarding relaxation. Of particular interest is the fact that the second highest area for such a feeling of escape were sport facilities (4.6). One of the reasons for this is the increasingly prevalent emphasis on recreation and sports activities. Recreation as a means for spending leisure time outdoors has seen a surge in recent years (McCullough et al. 2018). The third most popular space where people have a sense of escape are neighbourhood green spaces (4.4). In contrast, the survey respondents stated they feel the least sense of escape in shopping malls (3.0). They felt the most intense **sense of fascination** in the old town (4.5), which can be explained in the case of Ljubljana with its thoroughly renovated city centre and its rich cultural heritage and the riverbank greens (4.3). They get the least sense of fascination in small urban parks (3.6) and neighbourhood green spaces (3.8), which is most likely a consequence of being in constant daily contact with these two types. The feeling of **coherence** is also the most strongly felt in the old town (4.5), in sport facilities (4.5) and playgrounds (4.4). On the other hand, the least sense of coherence is felt in small urban parks (3.7) and in urban forests (3.8), which is interesting especially for the latter, as it might be, again, a consequence of people's alienation from nature. The most intense **feeling of compatibility** was noted for sport facilities (4.9) and large urban parks (4.8) and the least intense for shopping malls (3.6) and small urban parks (4.0). The survey respondents get the greatest **sense of novelty** in the old town (4.6) and the urban forest (4.4), which are two completely different environments, and the slightest sense of novelty in neighbourhood green spaces (3.6) and small urban parks (3.8).

RECREATIONAL
CHARACTERISTICS

The residents most often visit neighbourhood green areas, with as many as 46% daily and 38% visiting them a few times a week, followed by sport facilities (37% daily and 38% a few times a week). Close-to-home recreation is also significantly more common also in Helsinki (Neuvonen et al. 2007). The rarest visitation frequency occurs in shopping malls (6% once a year or less and 31% a few times a year) and the urban forest (4% once a year or less and 23% a few times a year).

As far as outdoor areas within a ten-minute walk, the top rated areas are again neighbourhood green spaces (81%), followed by urban forests (57%) and outdoor sport facilities (56%). This shows that urban forests are predominantly frequented by the local residents, while others appear to have neglected to recognise its greater ecosystem value. On the other hand, the most frequented areas of over 20 minutes distance are shopping malls (61%) and the old town (39%), which means the inhabitants are prepared to **travel that distance** to satisfy their needs.

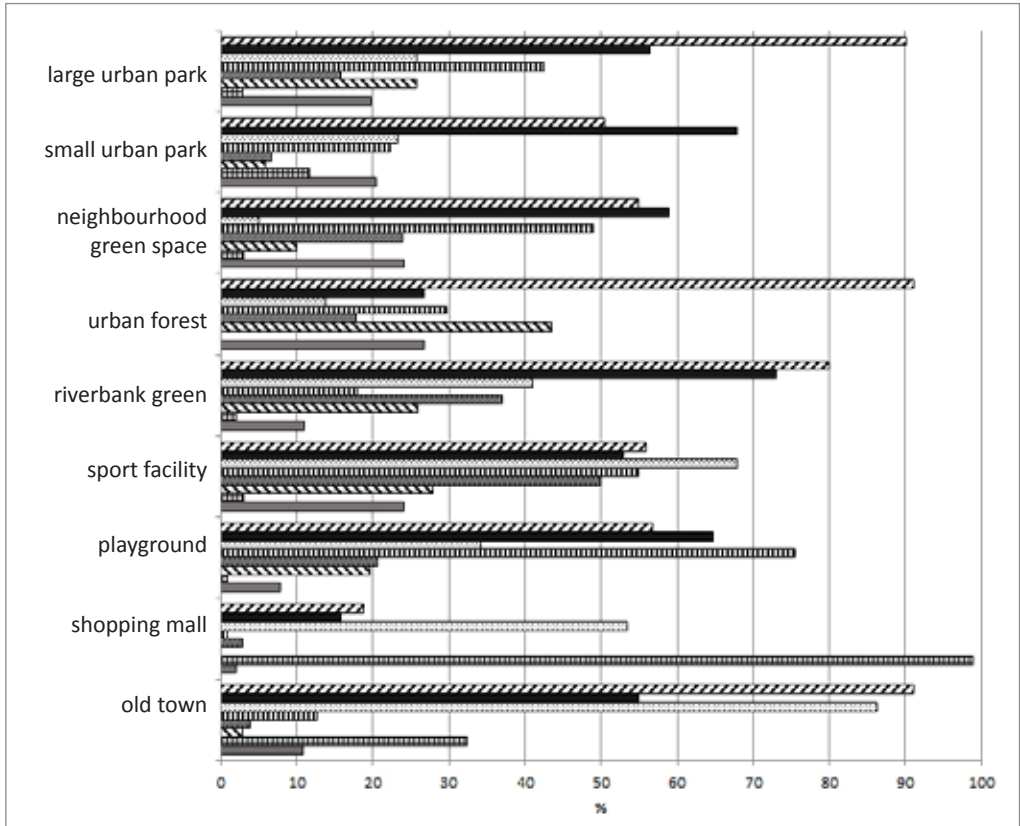
In terms of visit duration, the inhabitants spend the longest in the urban forest (87% over 41 minutes) and in shopping malls (86% over 41 minutes). It is not surprising that people spend the most time visiting the forest, because it significantly contributes to the quality of life in urban areas (Carrus et al. 2014). In contrast to this, inhabitants tend to spend the least amount of time in small urban parks (70% 40 minutes and less) that happen to be on their way or are in the immediate vicinity of their residences.









The residents of Ljubljana **most often** spend their time by walking in selected public areas (65%) which is generally the most common form of recreation (Oven et al. 2004).). Over ninety percent of these go to the old town (91%) and the urban forest (91%). They are the least likely to spend their time in small urban parks (51%) and by far the least in shopping malls (19%). Over half (53%) rest on benches, the ground..., mostly along the riverbank greens area (73%) and in small urban parks (68%) and the least in urban forests (27%) and shopping malls (16%). The residents resoundingly confirmed enjoying sitting in bars and restaurants (39%), most often in the old town (86%) and, interestingly, in sport facilities (68%). In the latter space, a sporting activity is often concluded with a drink at a nearby bar.

A more untamed nature or urban forests in our case offer greater recreational capacities than less natural areas (Paracchini et al. 2014). 18% of the inhabitants who jog most often do so in urban forests (44%), while significantly fewer of them jog in sport facilities (28%). 16% walk their dogs, also most often in urban forests (27%) and sport facilities (24%). Another fifth of the inhabitants practice

other sports. Shopping malls offer a stark contrast, with a whopping 99% shopping there. 32% also do some of their shopping in the old town.

Figure 4: TYPE OF ACTIVITIES IN DIFFERENT TYPES OF PUBLIC SPACES AMONG THE RESIDENTS OF LJUBLJANA



-  I walk
-  I sit on a bench, on the ground, I wonder around
-  I sit in a restaurant
-  I play with children / I take care of children
-  I do another sport
-  I run
-  I shop
-  I walk the dog

The inhabitants most often choose to go to shopping malls (88%), small urban parks (76%), urban forests (73%) and riverbank greens (72%) alone or in a couple. On the other hand, they most often gather in larger groups (3 or more) in sport facilities (60%) and playgrounds (56%). This difference is most likely connected to the type of activities in each area.

FOCUS GROUP WITH EXPERTS To perform a final and complete evaluation, it is the best to organize a focus group with invited experts from the field (e.g. geographers, urban planners, landscape architects). They should conduct their own evaluation of the cultural ecosystem services of recreation space types. The results will be more consistent and accurate if the evaluation is performed on recreation hot-spots cases, so it is even more important to find the most representative areas in the 4th step. The evaluation could be done with the analytic hierarchy process (AHP), an effective tool for dealing with complex decision-making by reducing it to a series of pairwise comparisons and then synthesizing the results. AHP incorporates a useful technique for checking the consistency of the decision-maker's evaluations, thus reducing the bias in the decision-making process (Saaty et al. 2013). The results of the process – rankings of each cultural ecosystem service by recreation areas – can then be compared to the survey results to confront the view of the experts and users, with a possible follow-up AHP to get the final scores.

CONCLUSION Understanding cultural ecosystem services provided by public spaces and recreational areas in particular is relatively new. The aim of the HEPNESS PERSPECTIVE framework was to provide guidelines for future recreation planning with an emphasis on outdoor public spaces through testing and transferring the concept of cultural ecosystem services onto the planning and management of recreation in cities. The research was partly implemented in the case study of Ljubljana. Our research included a literature review, studying the policy framework and elaborating the 5-step methodological guideline, which was also partly implemented in practice with a field survey. The results of the survey show that generally, the differences between various types of recreation spaces are lower than one might expect with regard to the perceived values of their cultural ecosystem services and restorative characteristics. Sport facilities achieved the highest overall score, performing above average in most services. It seems that they have been well-designed in Ljubljana, not only from the landscape planning point of view, but also as multifunctional

places. Large urban parks and riverbank greens were also evaluated above average in most of the categories. The urban population seems to prefer well-maintained, organized and tidy places, although these places are only an artificial representation of nature. The presence of water seems to have an additional positive influence on the people's evaluation.

Urban forests rank the highest in recreation and sports, which points to people preferring to recreate in natural environments. On the other hand, urban forests somehow did not perform as well in other types of services. The results are somewhat surprising, as urban forests are a type of area that is the most similar to a natural environment. This fact also contrasts with findings from the literature, which deems the urban forest as the type with the highest number of ecosystem services. The level of coherence in urban forests is the lowest of all the areas. On the other hand, people feel the most intense feeling of escape in urban forests, which is in line with their high recreational value. They also perform well in terms of compatibility.

Shopping malls are rated very high for shopping and hospitality services, which is an expected finding. However, they perform quite poorly in other aspects, which strongly reduces the potential of shopping as a recreational activity, although it does require people to walk, sometimes considerable distances. On the other hand, promoting recreation in old towns seem to make sense. Although the perception of the recreational value of an old town is quite low, such places offer other benefits and restorative characteristics, especially if they are designed for people, not for motorized transport.

The policy framework analysis shows that the concept of (cultural) ecosystem services has not yet been introduced, let alone integrated in the operational policy framework in the field of promoting health-enhancing physical activity and sport. However, the concept seems useful and applicable outside environmental and conservational policies, as it is also helpful for assessing the values of different types of recreational areas and for understanding their manifold characteristics and benefits. Such a task would require promoting the concept outside academia, as well as conservation and environmental policies, enforced cross-sectoral collaboration and additional research of the cultural ecosystem services of recreational areas. This should include a comparison between indoor and outdoor spaces and an evaluation of the different types of recreation, including informal ones, such as shopping.

Additionally, promoting recreation should be enhanced, especially since the health benefits of physical activity, let alone outdoor recreation, have not yet been explicitly addressed by the Urban

Agenda for the EU. We hope the findings presented in this publication will contribute towards the understanding and recognizing the CES concept as useful for stimulating an active and healthy lifestyle and fostering recreation in green spaces and natural environments.

ACKNOWLEDGEMENT *This study was partially supported by the Republic of Slovenia, Ministry of Education, Science and Sports, Slovenian Research Agency as a part of the Research programme Geography of Slovenia (P6-0101).*

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**APPENDIX:
SURVEY ON
THE VALUE
OF EXTERNAL
PUBLIC SPACES**

1. Estimate how much is ... valuable to you from the following aspects: (1-negligible, 2-very little, 3-a little, 4-moderately, 5-very much, 6-exceptionally) (circle accordingly)

1	Recreation and sport	1	2	3	4	5	6	
2	Education	1	2	3	4	5	6	
3	Aesthetics	1	2	3	4	5	6	
4	Relaxation	1	2	3	4	5	6	
5	Natural heritage	1	2	3	4	5	6	
6	Cultural heritage	1	2	3	4	5	6	
7	Sense of place	1	2	3	4	5	6	
8	Stimulating inspiration	1	2	3	4	5	6	
9	Spirituality	1	2	3	4	5	6	
10	Shopping and hospitality services	1	2	3	4	5	6	

2. To what extent do you agree with the following? (1-completely disagree, 2-disagree, 3-partially disagree, 4-partially agree, 5-agree, 6-completely agree) (circle accordingly)*

1	I can forget about my daily obligations in ...	1	2	3	4	5	6	
2	I have a feeling of escaping from everything in ...	1	2	3	4	5	6	
3	I can relax and get rid of negative thoughts in ...	1	2	3	4	5	6	
4	I can see many beautiful and interesting things in ...	1	2	3	4	5	6	
5	... sparks my curiosity about many things	1	2	3	4	5	6	
6	I can explore and study things in ...	1	2	3	4	5	6	
7	I can easily see how things are organized in ...	1	2	3	4	5	6	
8	Everything I see in ... matches with this place	1	2	3	4	5	6	
9	... is well-kept	1	2	3	4	5	6	
10	What I can see and do in ... meets my expectations	1	2	3	4	5	6	
11	I can do the things I love in ...	1	2	3	4	5	6	
12	I have a feeling I belong here	1	2	3	4	5	6	
13	... is quite different from my everyday environment	1	2	3	4	5	6	
14	I do things in ... that are different from my everyday activities	1	2	3	4	5	6	
15	I find ... unique	1	2	3	4	5	6	

*Q 1, 2, 3: escape; Q 4, 5, 6: fascination; Q 7, 8, 9: coherence; Q 10, 11, 12: compatibility; Q 13, 14, 15: novelty

3. How much do you have a feeling of ... in ...? (1-negligible, 2-very small, 3-small, 4-large, 5-very large, 6-exceptional) (circle accordingly)

1	unpleasantness	1	2	3	4	5	6	
2	fear	1	2	3	4	5	6	
3	noisiness	1	2	3	4	5	6	

4. How often do you visit ...? (circle accordingly)

1	every day
2	several times per week
3	several times per month
4	several times per year
5	once per year or more seldom

5. How long do you usually stay in / at ...? (circle accordingly)

1	20 minutes or less
2	21 to 40 minutes
3	41 to 60 minutes
4	more than 60 minutes

6. What do you do in / on ...? (circle accordingly, multiple replies possible)

1	I walk
2	I run
3	I walk the dog
4	I do another sport – which: ...
5	I sit on a bench, on the ground, I wander around ...
6	I shop
7	I sit in a restaurant
8	I play with children / take care of children

7. In what group formation do you most often visit ...? (circle accordingly)

1	alone
2	a couple
3	group of 3 to 5
4	group of more than 5

8. How many minutes of normal access (walk / drive) is ... from your residence?
(circle accordingly)

1	5 minutes and less
2	from 6 to 10 minutes
3	from 11 to 20 minutes
4	more than 20 minutes

9. Gender: (circle accordingly)

1	Male
2	Female

10. Age: (circle accordingly)

1	15 to 24
2	25 to 44
3	45 to 64
4	65 and over

11. The highest completed level of education: (circle accordingly)

1	elementary school
2	vocational school (2 - and 3 - year programs)
3	high school (4 - and 5 - year programs)
4	higher education, university

12. Residential district: ...

EVALUATING THE SOCIO-ECONOMIC EFFECTS OF ACTIVE SPORT CITIES POLICIES: A REFERENCE FRAMEWORK

Camilla Ferri, Dario Bertocchi, Jan van der Borg, Raffaella Lioce

Human welfare is not simply definable as the absence of disease or disability, but as a state of complete physical, mental and social well-being (WHO, 1948).

A sustainable city is that in which its population enjoys a high quality of life and does not pass on its problems on the future generations. one of the main objectives of its urban policies is the improvement of its citizens' well-being (WHO, 1999).

Starting from these two concepts, since as far back as 1999, the WHO has been stating the key role of urban planning in the improvement of human well-being and quality of life, calling for a new cross-cutting approach which would be able to combine interests of an environmental, health-related, economic and social nature, by enabling the active participation of local communities in the policy-making process.

Such a holistic approach is reflected in the multi-functionality of green urban spaces and in their specific ability to provide various ecosystem services, which in turn can have repercussions on individual health, the environment but also the whole of society and the territorial economy.

The most important requirement of the city planning, which has at its center humans through movement – one of humanity's basic traits – and the natural environment – the main context – is the understanding of local reality and the impact of potential choices not only at an environmental level, but also at a social and economic one, a sphere which has yet been very little explored by both the scientific community and the decision-makers themselves.

Of the many factors contributing to a citizen's health and well-being, physical activity plays a fundamental role, particularly in the prevention and the decrease of Non-communicable diseases, (such as cardio-vascular diseases, cancer, diabetes and chronic respiratory problems) which today are one of the main death causes on a global scale (WHO, 2008).

Moreover, physical activity, one of the most basic human functions, has also a beneficial effect on mental health, reducing stress and its collateral effects, anxiety and depression, as well as delaying the effects of Alzheimer's disease and other forms of dementia.

Despite these proven positive outcomes, the global population is more and more inactive. One of the main causes of this growing difficulty in maintaining high levels of physical activity are systematic and environmental conditions which make the individuals' daily life more and more sedentary. Examples of these are: considerable distances between the home and the workplace, shops or recreational areas, which have encouraged a rise in using a car for transportation rather than a bicycle or going by foot; unsafe conditions on the road; the decrease of time dedicated to physical activity in school and to "active play" in children's and teenagers' free time in favour of less active forms of recreation; low-quality neighborhoods.

However, a sedentary lifestyle is harmful not only to the individuals' health, but also to society at large: high healthcare costs, very often untenable, the loss of economic productivity, to which one must add the environmental costs of pollution of car-centered cities.

On the contrary, numerous studies show that if a city's population engages in physical activity this has a beneficial effect not only on the single individual's health, but also on society and the local economy, as well as the environment: "economic performance, safety, health, the environment, community cohesion - all of this improves when people move." (designedtomove.org, 2015).

It is estimated that the average life expectancy in Europe would rise by 0,63 years if we could put an end to physical inactivity (Lee et al, 2012). Going by foot or using a bicycle more would mean a decrease in green-house gas emissions, environmental and acoustic pollution and also traffic decongestion. Moreover, an increase in physical activity would trigger an increase in economic opportunities in various areas, such as industry, transport, healthcare services, sports and tourism (WHO, 2012). An active city is safer, more productive and cohesive from a social-integration point of view; this makes it more attractive for both new residents and tourists.

Designedtomove.org and Baley et al. (2012) recap all these issues following an accurate research consisting of more than 500 studies, in a model The Human Capital Model (HCM) which classifies the positive effects of physical activity in six types of capital:

1. *Physical Capital*: direct beneficial effects on the physical health and a positive influence on the adopting of healthy habits;
2. *Emotional Capital*: psychological and mental benefits associated to physical activity;
3. *Individual Capital*: specific character traits – ex. Abilities, core values – which can develop in a person thanks to active participation in physical games, sports and other forms of physical activity;
4. *Social Capital*: benefits which emerge when ties between people, groups, organizations and civil society are strengthened through the taking part in group activities such as games, sports and others involving physical activity;
5. *Intellectual Capital*: the cognitive and educational gains that are increasingly linked to participation in physical activity;
6. *Financial capital*: gains in terms of earning power, job performance, productivity and job attainment, alongside reduced costs of health care and absenteeism/presenteeism (i.e., lower productivity among those who are “present”) linked to physical activity and sport.

The concept of Human Capital to describe the benefits of physical activity comes from the theory, shared by many economists, that it is at the heart of economic growth and a marker of a healthy economy. The use of the word “human” is meant to underline the idea that these benefits are personal assets, that is a series of resources which contribute to an individual’s well-being. However, the role of physical activity in the acceleration of the omni-comprehensive development of the various dimensions of Human Capital has often been underestimated. The benefits of movement, in fact, are not independent or unconnected to one another, but rather they profit from one another and their value is most evident only if considered in a holistic perspective (Baley et al, 2013).

ACTIVE CITIES The supporting environment and the context in which physical activity takes place are key factors in the reaching of the benefits listed above. These are particularly visible in the so-called active cities, that is cities planned in order to merge physical activity with people’s daily life, and in doing so fulfilling one of the priorities of the “Strategy for physical activity - WHO, 2016-2025”.

It must follow that cities which are planned to facilitate physical activity are competitive cities: they have high levels of economic growth, low healthcare costs, a low crime rate and less pollution

designedtomove.org, 2012). All of this contributes to the well-being of their citizens: not only from a physical point of view, but every other point of view as well. Despite this, for years sports have been disconnected to urban planning: a wasted opportunity to create spaces for the exercising of sports and daily movement. In the past, because of urbanization and the conglomeration of cities, many sports centres have been moved outside the city center. Moreover, the quality of these facilities was often very low and it did not attract people: many cities built anonymous-looking sports centres, unconnected to the district in which they were situated and the public space, or too isolated. Only within the last decades has the relationship between physical activity and the city changed. Sports have become less team-centered and more individualistic, therefore there has been a rise in the building of fitness centers in city centers or public spaces, instead of sports centers in the outskirts. In some cases, the city itself has become the arena for sorting events or unorganized sporting activities (jogging, cycling, parkour).

Despite the growing importance of sports in the urban space, the planning of physical activities is nevertheless often separated from other programs. On the contrary, projects related to sports can have a relevant role in connecting other types of urban interests, as well as people, groups and organizations. In fact, sports can be considered a “citizens’ meeting-point”.

In accordance with this view, land planning has to recognize the contribution of physical activity to a high quality of life and promote inclusive planning-ventures (Casas Valle, 2013), which could involve not only parks and public areas, but also schools, transportation, workplaces and the whole urban landscape.

Focusing investments in such activities has been proved to provide a solid gain as well as the many beneficial side-effects already listed above (designedtomove.org, 2012).

Within the idea of active-cities planning, urban green spaces provide not only the background but also the necessary pre-existing condition for the increase in safe and healthy physical activity, be it strictly sports-related or just daily sustainable mobility within the city. Green infrastructure is a web of natural and semi-natural areas and green spaces in urban, rural, terrestrial, maritime and coastal areas, with both natural and artificial characteristics (Naumann et al., 2011).

One of its most important traits is its multi-functionality, that is the possibility of being used for many different purposes (environmental, but also social and economic ones), to which various benefits, for both its users and the wider context in which it is situated, can be

connected, whereas grey infrastructures tend to have only one possible use. Numerous researches have shown the significant contribution of the natural environment to human health and well-being, thanks to the many ecosystem benefits it produces. The report on the multi-functionality of green areas of the Science for Environment Policy (2012) emphasizes the connection between green infrastructures, the ecosystem and health, and lists a long series of benefits which can be provided by green areas: not only from a physical point of view, but also a psychological-emotional and socio-economic one, both on an individual and a community scale. Some of these are:

- public parks, trails, game-quarters, cycling areas and jogging tracks encourage physical activity in the open air (both in sports terms and in simple daily movement terms) and promote the spreading of a condition of good physical health;
- public parks, cities and green squares increase social interaction and cohesion, a sense of belonging to a community and a respect for the environment;
- green areas greatly contribute to the cultural and historical environment, bestowing an identity to the landscape and scenery in urban and peri-urban areas in which people live and work;
- green spaces in a residential community attract tourism and investments, as well as improving employment rates, wages, working conditions, access to public services and the very quality of the houses and residential districts themselves;
- in some cases, the development and use of green areas contributes to the rehabilitation process of otherwise degraded areas.

Despite all this, only recently have green areas been introduced as a tool in the policies of the European Council. The scarcity of researches focusing on their multi-functionality proves the necessity of producing new studies on their competitive global advantages on an economic, environmental and social scale.

Planning based on an omni-comprehensive approach oriented towards an integrated development is able to simultaneously consider the benefits deriving from the various dimensions of sustainability (social, environmental and economic). This idea goes hand in hand with the specific multi-functionality trait of green spaces and their capacity to provide various ecosystem services: an ecosystem approach has the potential to improve the integration of the natural environment through the debating of horizontal and intra-sectorial issues (EC, 2013). If it is true that urban planning can and must serve

as a first form of prevention and contribution to human health and well-being (Duhl & Sanchez, 2008), a comprehensive approach to the planning of active and healthy cities looks to physical activity not just as sports but also as an active lifestyle on a daily basis, accessible to all citizens, centering itself around men, their health and the health of the whole community (WHO, 2008). The focal points of this kind of planning are the built environment and the social one. A built environment includes the frameworks used in a certain area, the transport system, the urban design, the green spaces, and the spaces created by men (schools, houses, workplaces, recreational areas). The social environment has an impact on participation in physical activity and is tied to all the socio-economic benefits that the community receives from movement. It must follow that a strategy for planning an active urban lifestyle addresses all social groups, with a special attention reserved to children, young people, the elderly, residents in low social-economic status districts, workers, people with disabilities, ethnic minorities, as well a wide variety of urban settings such as schools, the workplace, residential districts, recreational and sports facilities (WHO, 2008). This means that in active city sustainability is also accessibility.

As mentioned before, merging physical activity with daily urban life constitutes an investment in terms of the quality of life of the individuals, but also, on a national scale, in terms of social well-being, public health and economic growth.

Amidst the fundamental precepts for this kind of planning as listed by designedtomove.org, what stands out is the necessity of:

- planning a city with the intent of making people more active, that is putting people at the centre of its design;
- planning physical activity within the built environment (from transport to green spaces);
- making “active”, that is, maximizing, resources already available, both physical, such as various spaces (salvaging abandoned ones, increasing the hours dedicated to their use, areas for mixed usage) and human (people or groups which promote movement).

The challenge of creating a human-centered city is based on the possibility of joining sports and space, as part of a multifunctional city. The merging of physical activity, design and policy is successful if it determines a rising of benefits both for the quality of areas and the city as a whole (Casas Valle, 2013 and WHO, 2008).

A crucial factor for the planning of an active, green and healthy landscape is the definition of the leadership role which is in the hands of the public authority.

However, this does not mean that the local public authority should be the only one responsible for such a process.

As stated before, many areas of the city benefit from higher levels of physical activity, hence giving support to the achievement of this goal must be a priority for all public sectors (not only health and education). Indeed, if it is true that the exercising of a strong leadership by the health department is crucial on a national scale, it is also true that promoting physical activity is a complicated matter: on the one hand, it is an issue which pertains to other departments as well, such as education, sports and culture; on the other hand, it is a question greatly influenced by decisions made in different departments such as transport, urban planning and finance (WHO, 2008).

The various departments must identify their common goals and align their own resources – if they want to reach the socio-economic benefits deriving from an increase in the urban population’s physical activity (Designedtomove.org, 2012).

In some cases it would be advisable that a coalition of various social groups should have a leadership or coordination role. In any case, the involvement and participation of the community is essential to success (WHO, 2008).

A relevant obstacle to change towards the design of an active city consists in the fact that many decision-makers do not consider physical activity as important enough to change policies and make investments. Despite being aware of the important role of physical activity in people’s health, in the lowering of healthcare costs and in creating benefits for the community, health is often missing from their agenda. Apart for few cases, there are not, at the present moment, any frameworks in order to measure at a 360 degree angle the return value of a healthier lifestyle on an urban scale, which would in turn make it possible to compare one city with another, thereby convincing (or, at least, giving support to) the decision-makers to invest in the different types of interventions listed above.

Such a supporting tool is particularly important when considering that a single decision may influence many aspects of life in a city. In fact, decisions made in the department of transport, urban planning, parks, leisure, education, often are the ones which determine if the environment will facilitate or impede physical activity. On the contrary, creating “active-friendly” spaces can be the solution to many different problems on an urban scale: environmental, social and economic (Sallis et al, 2015). Therefore, it is of great importance to create indicators be able to measure the impacts of active cities, as well as to invest in partnerships and inter-disciplinary studies which could provide scientific evidence of the holistic benefits of physical activities, with the purpose of pushing authorities to continuous

improvement (designedtomove.org, 2012). The WHO (2008) as well recommends the monitoring and evaluation of policies which promote physical activity through the use of performance indicators. In view of the need to create tools to support decision-makers in urban planning as related to physical activity and the necessity of

Table 1: THE HEPNESS MODEL

CITY SPHERE	INDICATORS	SUB-INDICATORS (CITY ASPECTS/DYNAMICS)
SOCIAL	Citizen well-being	Environmental well-being: a) air quality Environmental well-being: b) quality of acoustic environment Environmental well-being: c) public green/pedestrian/cyclist areas availability Local transport and mobility Health and population
	Civic engagement	Public awareness on physical activity Citizens' participation
	City Awards	
	Safety (crime, pedestrian, cyclist)	Crime, violence or vandalism Road safety
	Sport attitude	People involvement in sport Indoor sport facilities availability Outdoor sport facilities availability
	Sport education opportunities	
ECONOMIC	Health care costs	
	Job growth	
	Economic well-being	
	Economics of the sport sector	
	City proactiveness towards sports and physical activity	
	Attractiveness and reputation	Attractiveness towards new residents Tourist attractiveness Events
	Sport and tourism	
DIGITAL	Sharing economy	
	Smart and city digital attitude	City monitoring Electric mobility Internet in the city Digital presence of the city and tourism App store for citizens
	Citizen digital engagement	

monitoring the effects of policies, plans and programs based on the development of active, green and healthy cities, the focal point of the present paper is to explain the building of a methodological framework able to measure the socio-economic benefits of urban landscapes planned from a human-centered perspective, whose objective is to promote the well-being of a community through physical movement.

Through the evaluation of socio-economic benefits tied to physical activity this HEPNESS framework aims to be a supporting tool to the local authorities involved in the project regarding the monitoring of enacted green policies, in order to gather updates and achieve never-ending improvement in the management of urban spaces able to integrate physical activity in the daily life of citizens. Moreover, this tool can be used as a model for other urban realities wanting to develop strategies, policies and programs in this perspective.

**SOCIAL AND
ECONOMIC
BENEFITS**

Taking into account that the scientific community has often been focused on the analysis of the impact physical activity has on individual health (both physical and mental) or on the environmental impact of the use of green spaces, the focus of this framework consists in two main types of benefits, which are, at the present moment, being explored less, and which better embody the holistic approach to urban planning for physical and green activity: the social and economic benefits. After a research whose goal was to identify a greater number of different categories, they have been grouped together within the model in spheres of the same name.

Given this preface, the *social sphere* analyzes the benefits which not only the individual but the whole community might gain by having more physical activity in his/its daily life. The environmental and individual aspects of the issue have not been overlooked, but they have been included within the social sphere with another perspective, namely the well-being of citizens (synthetizing them in the sub-criteria “environmental well-being” and “population and health”).

Within this criteria are also included those issues tied to the availability of green areas, bicycle and pedestrian areas, to mobility (users of public transport instead of cars, number of bicycles, car or bike sharing, low-impact buses...), to whether or not treaties such the Covenant of Mayors, the Aalborg Paper have been signed or if there have been prizes or awards such as Green European Capital, European sports City, European Sports Capital.

The “population and health” criteria allows one to have a general

view of the demographic trend of the city, divided by sex and age, and it also helps to compare data such as the aging of the population, birth rate, and life expectancy. The social sphere also contemplates questions of public security (the crime rate and safety of the streets, the latter by calculating the number of accidents fatal to pedestrians or people using a car or bicycle) and measures the population's inclination towards sports, that is its involvement in them (at both an amateur and professional level), as well as whether outdoor or indoor spaces are available for these and whether there are schools, universities or academies dedicated to sports. Lastly, this sphere attempts to measure the quantity of events, projects and initiatives organized to promote physical activity to the population, via the marker "community involvement".

In the ***economic sphere*** we find employment issues (number of jobs and of people working), public healthcare expenses, as well as attractiveness and reputation, measured by the number of tourists, new residents, and major events. Economic well-being is measured in terms of the GDP *pro capite*, the total employment rate, unemployment amongst the young and medium wages. Taking into account the economy of sport sector, this model also counts the number of work and business opportunities tied to this field available in a city, as well as the monthly expenses due to physical activity for an average family. Finally, this sphere also looks at the investments (in green areas, educational programmes, events, sustainable mobility, sports facilities...) the public sector has made, thus proving its willingness towards the spreading of sports and more physical activity amongst its citizens.

To the social and economic spheres a ***digital sphere*** has been added, which aims to study the connections between active cities and digital smartness. It is easy to see that the goals of a human-centered city coincide with those of a smart one.

A smart city is that in which technology is integral to a strategic approach towards sustainability, citizenship's well citizens being and economic development (Steria, 2011).

A smart city is therefore one that, with a strategic vision and in an organic way, employs ICT tools as an innovative support to the management department and the dispensation of public services, also thanks to the help of public-private partnerships so as to improve the quality of life. In particular, some of the "smart" concepts of an active land are:

- sentient cities, that is those cities which create the infrastructural conditions in which to deliver and manage data on their functioning

in spheres such as mobility, energy resources and environmental quality. Thanks to new urban tools citizens go from being users or recipients of these services to active subjects involved in the monitoring of the city. Video surveillance, traffic monitoring and smart lightening are friendly infrastructures for those practicing a sport;

- wiki-cities and smart community; the digital facilitates the citizens' involvement through the use of the web, with the goal of becoming active participants in decisions concerning the city. Some of the most helpful tools in this are social networks, through which people who want to share practicing a sport can congregate;
- sharing economy; the possibility of exchanging, sharing, trading, selling or renting goods and services on a large scale thanks to ICT platforms such as, for example, green and active modes of transportation (ex. car sharing, bicycle sharing ...)

After having defined these three spheres, what followed was the creating of criteria, that is macro-themes used to describe in detail the social, economic and digital aspects of the issue, which might be revealing of benefits deriving from the spreading of physical activity amongst the population or of particular traits of human-centered cities.

These criteria are sort of index used to summarize some sub-criteria, which divide the issue described by the criteria into sub-issues, which are evaluated in quantity terms by data (here called "measures"), revealing specific realities. In most cases these "measures" are related to the number of inhabitants in a particular area. This choice (rather than using another one, for example the surface of the area) reflects the human-centered approach of the model. The sub-criteria and measures have been identified and grouped together after an examination and benchmarking operation through documents pertaining to the following categories:

- the city being listed for prizes such as "European Green City", "European Green Leaf Award", "European Capital of Sport";
- indexes such as the index of quality of life, index of the practicing of sports, Smart city index.

The success of planning of a human-centered landscape based on an active lifestyle of its population is based on its capacity to integrate within its strategies, programs and plans the active participation of the community and the building of partnerships, so that the process of decision-making is not unilateral but shared between the public, private and third sector (WHO, 2008).

It follows that, as well as measuring the socio-economic benefits for cities, it is also necessary to integrate this knowledge with a study on how decision-making is influenced by the three big sectors of city life: the public, private and third sector (e.g. volunteering groups, Social cooperatives, Social-Promotion associations and “pro-social” foundations, that is “non-profit”).

To achieve this, another model has been accompanied to the framework explained above. Its objective is to pinpoint the level of influence each of these sectors has on the decisions concerning the social, economic and digital aspects as described by the sub-criteria. Evaluation takes place on a scale from 0 to 5, where:

- **0** represents a neutral action, that is the complete impossibility of the sector to influence the decisions in that particular aspect;
- **1** represents an indirect action, that is a situation in which this sector has a minimal possibility of influencing that aspect;
- **2** represents a situation in which the sector partly influences the decisions, but is not the main decision-maker;
- **3** represents a joint action, in which the sector shares its decision-making capacity equally with another sector (or other two);
- **4** represents a situation where the sector in question has a major decision-making capacity on a particular aspect, but is not the only decision-maker involved;
- **5** represents a direct action in which the sector is the only entity with decision-making power over a particular aspect.

To correctly use the chart it should be filled out by a number of different experts in different spheres concerning green urban planning, physical activity and sports, pertaining the three sectors (public, private and third). The results of this procedure should therefore be impartial and should make it possible to understand how the decision-making influence is distributed between the three sectors, as well as the degree in which the decision-making process is shared, both on a sphere scale and on a single-criteria scale. Therefore, the chart pinpoints in which areas of city life is more or less difficult to have dialogue between the different sectors (and consequently in which areas to promote round-table discussions, best-practice exchanges...) and the key decision-makers of certain areas, which might need stronger support (for example, from the methodological point of view) in formulating their strategy.

In a historical moment distinguished by its rising levels of sedentary life, human-centered urban and landscape planning, which put at their center people’s well-being by using natural and cultural resources as tools to encourage physical activity, becomes essential,

not only for the individual's health, but also for the environmental, social and economic sustainability of the urban community at large. Innovation dictated by digital technologies completes the picture via the idea of an active and green smart city which, because of movement, is healthy, cohesive and more productive. The different sectors of public authority, hand in hand with the private sector and civil society itself, must realize the socio-economic benefits deriving from the assimilation of physical activity in daily life and therefore make decisions so as to achieve one solution to multiple problems. The framework presented in this paper, due to its holistic approach, would like to be a supporting tool for policy-makers in taking inter-sectorial decisions. By intersecting the results of the implementation of such a model and of the chart of influence in decision-making, it is possible to get helpful guidelines for the strategic development of an active city, by identifying not only which areas need improvement, but also which sector could take part in or influence the decision-making process for their development. Because many socio-economic effects of such planning can not be immediately visible, this framework can also be applied during monitoring and for adjustments in the long run, as a part of a wider policy cycle in which any decision is evaluated through a deep analysis of the contextual situation.

Further research is needed concerning the actual viability of this model through the combining and studying on data so as to be able to show, through the outlined markers, a comprehensive evaluation of the performance of a city in the promotion and integration of physical activity at an urban level. In particular, it is worth emphasizing the ties between the "measures" and their degree of influence on the defining of the final marker, which could be hypothesized through an AHP model.

A great gap to fill is the difficulty in finding the necessary data at a local-authority level. To correctly apply the model it would be advisable to gather a wide selection of data, as well as a considerable number of cities to analyze (case studies), so that a comparative analysis via the creation of different kind of index will be possible.

Lastly, a future challenge for research in this field will be to integrate within this model a wider evaluation of the benefits for, but also deriving from, the community. Indeed, citizens are a critical mass which itself contributes, directly or indirectly, to the spreading of the benefits of physical activity to each other and to the future generations, which will have to work more and more on an integrated and human-centered planning so as to reach accessible well-being and, therefore, long-term urban sustainability.

Table 2: HEPNESS MODEL FOR THE ANALYSIS CITY SECTOR INFLUENCE ON DECISION MAKING

CITY SPHERES	INDICATORS	SUB-INDICATORS (City Aspects/Dynamics)	CITY SECTORS' POWER BALANCE IN DECISION MAKING		
			public sector	private sector	third sector
SOCIAL		The following city dynamics/aspects can be influenced and impacted at different levels by the decisions of the three sectors of the city: which sector(s) has/have influence on through its/their decisions?			
		Environmental well-being: a) air quality			
		Environmental well-being: b) quality of a acoustic environment			
		Environmental well-being: c) public green/pedestrian/cyclist areas availability			
		Citizen well-being	Local Transport and Mobility		
			Integrated environmental management (on the signature of treaties for environmental protection or similar)		
			Health (on determining satisfaction on personal health and health system)		
			Public awareness on physical activity (on the organization and spreading of awareness raising activities, advertising, media, campaigns - if existing)		
		Civic engagement	Citizens' participation (on the organization of public consultations, forums, working groups - if existing)		
		City Awards	On the application and the obtaining of awards (as European Green Capital, European Sport City/Capital...)		
		Safety (crime, pedestrian, cyclist)	Crime, violence or vandalism (on their control)		
			Road safety (on its control)		
		Sport attitude	People involvement in sport (at amateur or professional level, in clubs and associations)		
			Indoor sport facilities availability		
		Outdoor sport facilities availability			
	Sport education opportunities	On the presence of opportunities in sport education			

ECONOMIC	Health care costs	On health care system			
	Job growth	On the number of job in the city			
	Economic well-being	On people income & (un)employment			
	Economics of the sport sector	On presence of jobs and business related to sport sector			
	City proactiveness towards sport & physical activity	On investments and policies pro sport and physical activity			
	Attractiveness & reputation	Attractiveness towards new residents			
		Tourist attractiveness			
		On events organization and success			
	sport & tourism	On sport tourism development in the city			
	sharing economy	On the presence of sharing economy services			
DIGITAL	smart & digital city attitude	On the presence of city monitoring systems			
		On the presence of Electric mobility			
		Internet in the city (on the presence of Broadband and public wifi)			
	Digital presence of the city & tourism (on tourist information availability & promotion online, on Social Media)				
	App store for citizens (on the presence of apps for city services and sport)				
	Citizen digital engagement	On the presence of community platforms for info sharing / sport related (e.g. Facebook groups)			

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THE HEPNESS CITIES CHALLENGE

Raffaella Lioce

An HEPNESS City is an active, healthy and happy place to live.

A city is complex ecosystem, where several and diverse factors interact and determine impacts on citizens' health and wellbeing. Cities represent a social, cultural and ecological rich restorative context where world's population lives and works.

The ecosystem approach to cities is the core of the Hepness perspective purposed to connect people and nature within the built environment, and to offer citizens a chance to be more active and healthy in terms of both physical and mental well-being. HEPNESS promotes and offers policy makers, planners and managers a human centred standpoint to rethink the cities design, the management of both common settings and open air places for a much more flourishing and prospering community.

The HEPNESS Cities Challenge (HCC) calls cities to action for becoming a healthier liveable place for all.

Aware that making a systemic change to the design of the urban environment will not happen overnight, HCC promotes a roadmap that would move this process up starting from a smart and inclusive management of cities' commons and open air places. The shared perspective supports the definition of new visionary solutions for all cities that would improve their environment to encourage the development of healthy, productive and resilient community.

A change in the cities of the future can be achieved by spreading a cross-sectoral collaboration amid diverse organizations that should start to think outside the box and re-think their role in the urban ecosystem. This change can be the result of new visions becoming reality step by step, but most of all believing that by integrating existing solutions and revising the governance model, cities can improve quality of citizens' life.

WHAT IS THE HEPNESS CITIES CHALLENGE?

The HCC represents a sort of voluntary framework that calls cities to action. It calls to change perspective and adopt a human centred attitude in decision making process.

The challenges for contemporary cities are continuously growing and becoming more and more complex. Due to a shifting socio-

economic contexts together with new environmental scenarios. The urban built environment plays a determinant role in citizens and community well-being. It must be understood not purely as the result of urbanization, but the place where people live and develop cultural and socio-economic relations.

Sport, Healthy, Green and Cultural Cities or Capitals have been in the past addressed through one single standpoint, often because an actual integration is still argued and complicate. The HCC promotes such interrelation and a new holistic approach to *URBS*, *CIVITAS* and *POLIS*, which are not separate spheres of a city, but part of an urban ecosystem where diverse dimensions compete and cooperate to make cities resilient and sustainable.

Cities are not addressed simply as a built environment, but as complex organism and a system of relations that create a wider sense of community. Citizens demands quality of life, and the challenge is to set the scene for an actual well-being of people. A shifting of urban paradigm is necessary as never in the past. Being green is not enough, cities' performance levels claim for restorative and regenerative holistic approach to both design and management. It is not a merely question to build urban spaces, but to build a healthy community. The ambition of HEPNESS is to stimulate cities to address diverse urban policies thinking that we (humans) have been made to move.

HEPNESS invites diverse organizations and experts to collaborate and exchange competences and practices concerning the enhancement of natural and cultural ecosystem services in the urban environment for the health of citizens, the health of economies and of the environment.

The HCC is an attempt to raise the awareness of the value and importance for health of a real active lifestyle in cities. It is a roadmap defined to extend the ideals of a sport active city in a more comprehensive dimension addressing several contemporary and future challenges.

The HCC promotes unconventional measures for urban sustainability, stimulates the adoption of transformative design tools for the built environment regeneration and a pursues management schemes to bridge the gaps amid real and ideal healthy city.

Imagining a city that is inclusive, sustainable, culturally rich, attractive, resilient, ecologically restorative and healthy, the HEPNESS philosophy advocates an innovative symbiotic relationship between people and all aspects of the built environment.

Becoming an HEPNESS city requires new planning and novel governance models for the empowerment of both city leaders and citizens.

An HEPNESS City is designed to move, managed for a more active lifestyle of citizens and developed to become much more resilient, attractive and competitive.

The HCC is not a standard or a methodology, but it is actually a call for action!

**WHY IS THE
HCC RELEVANT
FOR CITIES TO
ADDRESS THIS
CHALLENGE?**

As acknowledged by the Habitat III New Urban Agenda, public spaces play a crucial role in urban economy and socio-cultural innovation. The way citizens produce, consume, commute and interact within the urban environment impacts on their health and quality of life. Public places need to be designed and, most of all, managed with a human-centred approach enabling the development of a productive and healthy community.

WHO developed the “Global Recommendations on Physical Activity for Health” with the overall aim of providing national and regional level policy makers with guidance on the dose-response relationship between the frequency, duration, intensity, type and total amount of physical activity needed for the prevention of NCDs¹.

The guidelines included in the “Global Recommendations on Physical Activity for Health” are “relevant to all healthy adults aged 18-64 years, unless specific medical conditions indicate to the contrary, irrespective of gender, race, ethnicity or income level. They also apply to individuals in this age range with chronic non-communicable conditions not related to mobility such as hypertension or diabetes. These recommendations can be applied to adults with disabilities. However they may need to be adjusted for each individual based on their exercise capacity and specific health needs. Pregnant, postpartum women and persons with cardiac events may need to take extra precautions and seek medical advice before striving to achieve the recommended levels of physical activity for this age group.

Strong evidence demonstrates that compared to less active adult men and women, individuals who are more active:

- have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon and breast cancer, and depression;

1. https://www.who.int/dietphysicalactivity/factsheet_recommendations/en/ Global recommendations on physical activity for health

- are likely to have less risk of a hip or vertebral fracture;
- exhibit a higher level of cardiorespiratory and muscular tones;
- and are more likely to achieve weight maintenance, have a healthier body mass and composition.”

Inactive people should start with small amounts of physical activity and gradually increase duration, frequency and intensity over time. Inactive adults and those with disease limitations will have added health benefits when they become more active.²

Notwithstanding researches demonstrate the importance of Physical Activity for health, people in cities are less active than ever before. Considering that the built environment influences how people move and get around, and urban design is essential to encourage physical activity, CITIES should reconsider strategies integrating sport in diverse urban policies, being aware that, for example, encouraging walking and cycling contributes also to cleaner air and reducing greenhouse gas emissions.

WHO Recommendations:

In adults aged 18-64, physical activity includes leisure time physical activity, transportation (e.g. walking or cycling), occupational (i.e. work), household chores, play, games, sports or planned exercise, in the context of daily, family, and community activities. The recommendations in order to improve cardiorespiratory and muscular fitness, bone health, reduce the risk of NCDs and depression are:

- 1. Adults aged 18-64 should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate - and vigorous-intensity activity.*
- 2. Aerobic activity should be performed in bouts of at least 10 minutes duration.*
- 3. For additional health benefits, adults should increase their moderate-intensity aerobic physical activity to 300 minutes per week, or engage in 150 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate - and vigorous-intensity activity.*
- 4. Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week.*

© World Health Organization 2011

2. © World Health Organization 2011 - <https://www.who.int/dietphysicalactivity/physical-activity-recommendations-18-64years.pdf?ua=1> For further information see: <http://www.who.int/dietphysicalactivity/pa/en/index.html> or contact WHO on dietandhealth@who.int

The HCC promotes health sport cities, by enhancing cultural and natural ecosystems services for the promotion of active lifestyle in the urban environment.

The HCC provides practitioners and stakeholders with a framework of practices, based on the connection between green and cultural commons, and on the enhancement of urban ecosystem for human health. It fosters and encourages new PPPP (Public Private People Partnership) and advances an interdisciplinary holistic approach towards green infrastructures and cultural places.

The HCC can be understood as a voluntary roadmap capable to foster natural and cultural ecosystems services in the urban environment for human health and well-being. Based on a shared perspective to urban lifestyle, urban design and commons management the HCC is coherent with the “Guideline to improving to Infrastructures for Leisure-Time Physical Activity” pursued by HEPA recommendations. HCC adopted a monitoring indicators system, that has been defined starting from the “Proposed indicators to evaluate HEPA levels and HEPA policies in the EU”, taking into account the EU Physical Activity Guidelines, and the literature review³.

Furthermore, as specifically emphasised by the global movement European Healthy Cities Network launched by the WHO, by the guideline “A healthy city is an active city”⁴, by the Zagreb Declaration for healthy cities and by the publication “Promoting physical activity and active living in urban environments”, it is important fostering the “role of local governments in achieving goals of sustainability” and quality of life⁵. If we aim at developing health-sport cities, by enhancing cities resources, we have to work in the following directions:

- improve the awareness of decision makers about HEPA to foster the adoption of health-oriented development policies,
- provide to the city practitioners, stakeholders and sport interested parties methodologies and practical tools to increase their capacities in developing health and physical activity programs in the urban environment;
- inspiring numerous cities to enhance sport and Physical Activity in the city;

3. Previous chapter of this publication

4. WHO Regional Office for Europe, P. Edwards, A.D. Tsouros “A healthy city is an active city”, 2008, ISBN 978 92 890 4291 8

5. WHO, “Promoting physical activity and active living in urban environments. The role of Local Governments”, ISBN 92-890-2181-0

- fostering continuous improvement of the HEPNESS perspective and roadmap.

Researches show that we are beginning to appreciate the variety and complexity of human health benefits that stem from experiencing nature and culture. Exercise outdoors in a green and cultural context improves mood and self-esteem and is much more restorative than exercising indoor.

In more than half of the studies reviewed, participants' mood and attitude were significantly more positive following outdoor compared to indoor activity. Participants reported greater revitalization, self-esteem, positive engagement, vitality, energy, pleasure, and delight, as well as lower frustration, worry, confusion, depression, tension, and tiredness.

Cardiovascular disease is one of the leading causes of death worldwide. Sedentary, inactive lifestyles are a major contributor to the rise in cardiovascular disease – stress, pollution, poor diet, and lack of physical activity mark the lives of an increasingly large number of people around the world.

Non-communicable diseases (NCDs), such as obesity, are now the leading causes of death globally. Numerous studies show the relation between the living environment and the community health conditions. Actually Cities play a pivotal role reversing those trend. These assumptions describe the project background and the reasons for it.

The “Zagreb Declaration on Healthy Cities” encourages cities to experiment new ideas and concepts for active communities' development. The WHO European Healthy Cities Network, defines the VI phase (2014-2018) goals and requirements, pointing out that Cities are encouraged to strengthen leadership and participatory governance for health, by exploring new and innovative applications of shared and participatory governance.

Creating “activity-friendly environments” is recommended to promote physical activity, but potential co-benefits of such environments have not been well described. A review of scientific literature has been conducted by the Active Living Research Team, who explored a wide range of literature to understand the co-benefits of activity-friendly environments on physical health, mental health, social benefits, safety/injury prevention, environmental sustainability, and economics.

In the past, Physical activity has been planned out of people's lives,

but efforts are underway worldwide to re-integrate physical activity into daily lives. Promoting outdoors physical activity can afford various additional positive effects on local communities. Besides the improvement of health and the reduction of not communicable diseases costs, positive impacts can be found on the environment and the economy: tourism for example. Actually, the combination of physical activity and tourism is not new, but it is not yet fully exploited.

The HCC highlights many dynamic factors and their complex interactions, affecting and/or exploiting ecosystem quality and human health in cities. It forms the basis for further interdisciplinary projects development and for the mainstream of health, active, sport cities, as the city of the future.

**THE ECOSYSTEM
DIMENSION
OF SPORT
IN THE CITIES**

As stated in the publication “A healthy city is active city” edited by the WHO “The links between urban planning and health are many and varied. Environmental, social and economic conditions in cities can have both positive and negative influences on human health and centre. Urban planning and related professions play an important role in shaping those conditions”⁶.

It is evident the importance of public authorities: new shared local governance is necessary to enabling and encouraging population to become more physically active. Squares, green commons and cultural sites can be considered as parts of a unique active city program.

The networking between local municipalities, sport associations and research institutes has to be encouraged, in order to innovate cities approach to active lifestyle, health promotion and ecosystem services improvement; as well as an indepth understanding of the value of natural and cultural ecosystem services in the urban communities has to be developed, this is necessary to achieve the HEPNESS Perspective in cities.

The holistic approach advances cities design to make people active, healthy, productive and happy.

Sport is a tool to face urban challenge, because it is inclusion, education, economy, community, culture, and more over.

Actually active cities approach can be renewed adopting an ecosystemic dimension. Ecosystem is “a dynamic complex of plant, animal and microorganism communities and the non living environment

6. WHO Regional Office for Europe “A healthy city is active city”, 2008 - ISBN 978-92 890-4291-8

acting as a functional unit. Ecosystem services, in turn, are the goods and benefits people obtain from ecosystem functions". Among these benefits health is the most important. Actually "The benefits and the values associated with ecosystems, cultural and environmental settings are considered just as fundamental to the relationship between human well-being and ecosystems as provisioning, regulating and supporting services, and it is widely agreed that they must be better accounted for in future decision making" (M. Dudley, P. Coates). Environmental setting or natural-cultural space provide various benefits, both tangible and intangible. Among those benefits, the project focuses on the ones deriving from the possibilities offered to people to be active and healthy, on the improvement of resilient communities and supportive environments. Lots of studies confirms the importance of ecosystem services for health, but very few are the attempts done to integrate this understanding into an active comprehensive city strategy. Here there is spaces for the innovation and the creativity pursued by the HEPNESS project.

In such a complex context, HEPNESS promotes the development of health sport cities, by enhancing cultural and natural assets and ecosystems services for the promotion of active lifestyle, with the final goal to inspiring numerous cities to accept the hepness challenge to promoting the sustainable use of recreational ecosystem services for a more active lifestyle. The actual understanding of the potentials and the benefits deriving from the active use of cultural and natural ecosystems for the development of healthy communities allows city managers and policy makers to experiencing innovative schemes to include sport and physical activity into urban management dimension. The key role of public authorities and local government becomes relevant for enabling and encouraging population to become more physically active. Squares, green commons and cultural sites can be considered as parts of a unique active city program.

In hepness cities:

- Physical Activity is integrated in urban development policies, such as: mobility, public spaces, security, accessibility, pedestrian and commercial areas, parks, recreational areas and green infrastructures;
- Physical Activity is promoted throughout the whole urban environment;
- Sport is an economic asset and a tool for urban regeneration;
- Sport is strategic for developing inclusive and resilient communities;
- Cultural assets and natural ecosystems services are enhanced for the quality of citizens' life.

The urban sport ecosystem can be shortly represented in the chart hereafter, where sport dimensions (citizenships' sport, grassroots sport, professional sport clubs) are analysed within different spheres of the urban environment: the built environment (*Urbs*), the social context (*Civitas*) and the political dimension(*Polis*).

	CITIZENSHIPS' SPORT	GRASSROOTS	PROFESSIONAL
URBS	Parks, river banks, cycling lanes, streets, urban commons, urban forests, green areas,	Gymnasiums, football courts, tennis courts, swimming pools, volleyball fields, basketball courts football stadium, skating stadium, jockey field, rugby field, baseball field ...	
CIVITAS	Free association of citizens, single citizen, sport-friendships	Sport Events for all	Competitive Sport events
POLEIS	Maintenance of commons, mobility policies, pedestrian areas, public space management	Education, Inclusion	Economic development, territorial marketing
SMART CITIES	APP to monitor performance, to trace running paths, to share places; Chat to contact the group and organize the Physical Activity; App to organize a grassroots match; Big Data to improve city management and design		Booking

Europe is a highly urbanised continent. Cities with few parks, limited pedestrian space and few cultural places are likely to see higher rates of cardiovascular disease among residents, whereas cities adopting a people-centered design approach can go a long way to create

healthier citizens and more dynamic cities. The consequent loss and degradation of urban and peri-urban green spaces could adversely affect ecosystems as well as human health and well-being.

Cultural and natural ecosystems are accessible for all socio-economic groups: everybody can benefit from them.

But, do people really know those opportunities? have public authorities developed the supporting tools to ensure the healthy and sustainable use of those resources? *How much is it important integrating health and sustainable development considerations in how we plan, design, maintain, improve, manage and promote our cities and related resources?*⁷

Cities play an important role in the quality of citizens health and lifestyle:

Active cities are healthy cities;

Active cities are much more attractive for living and for visiting;

Active cities offers citizens and tourists several recreational places to be active and happy;

Active cities are vibrant places able to ensure the economic sustainable development.

The holistic perception of multifaceted benefits deriving from the promotion of outdoor physical activities for all and the sustainable exploitation of natural and cultural ecosystems determines Innovation, which is not necessary found only in the simple idea to promote outdoors activities in natural and cultural contexts, but in the integrated and strategic approach, that enables people to be more active, to increase city attractiveness, to generate healthier communities. Healthy cultural trekking, nature trails and other active nature adventures can be promoted not only for tourism interest, but for citizens' health first. What is required; is: to add health promotion to tourism information; to map opportunities and create such renewed offer; to design services for promotion and awareness. It is a creative process where cities enhance resources, before building new infrastructures. It is a process that requires partnership and agreements between cities and sport associations (runners, trekking, cycling, canoeing,) between cities and tourism organizations (DMO, operators) and between cities and health organizations.

7. World Health Organization, Zagreb Declaration for healthy cities. Health and health equity in all local policies, 2009

The WHO encourages cities to establish “partnerships that create new working cultures and strengthen the capacity of institutions and city departments to support people-centred services”.

The HEPNESS vision of a city is participatory, is based on physical activity free access, and it is health oriented.

The idea to combine active cities perspective with cultural and natural assets enhancement generates new active tourism proposition, able to improve the socio-economic environment, to provide benefits to citizens and tourists and to enhance landscape values and preserve nature.

**A ROADMAP
TOWARDS
HEPNESS CITY** The HCC promotes the leadership of municipalities, to promote health and to raise the awareness on added value of outdoors sport and physical activities.

HEPNESS demonstrates that the goal of increasing participation in physical activity must focus on a range of settings and resources, including green commons, streets, parks, cultural sites, historic centres, squares, public gardens, rivers, lakes, sea... In this scenario, looking at cities, as an integrated and complex ecosystem, focusing on natural and cultural assets. HEPNESS assumes an innovative holistic perspective able to provide several responses to current social, economic, health and environmental challenges; “whilst organised sport continues to play an important role in increasing activity levels, it is one of a number of *activity options* which people can consider, with other activities including walking, cycling, dance, play etc.”, that can make the differences between an active and productive communities and an unhealthy one.

Through an interdisciplinary and transnational approach towards green infrastructure and cultural places, the project promotes ecosystems for human health and well-being. Before delivering the framework of practices, the project partners define the HEPNESS perspective. This conceptual outline represents the context into which the EU added value can be advanced. Indeed the perspective, that cannot be designed without the joint collaborative work of the partnership, is meant to be exported and replicated in several EU cities.

The HEPNESS Perspective is a methodological tool that can contribute to the creation of the Guideline to improving to Infrastructures for Leisure-Time Physical Activity” (proposed by HEPA recommendation). The HEPNESS conceptual perspective is designed thanks the

contribution of the scientific partners (ZRC SAZU and UNIVE) and with the cooperation of both cities and sport organizations. It highlights many dynamic factors, and their complex interactions, affecting ecosystem health and human health in cities, that can be exploited and promoted sustainably. This perspective forms the basis for further interdisciplinary projects development and for mainstream health, active, sport cities as the city of the future.

In 2013 the EU Commission stated that “satisfaction with cleanliness, green spaces, and public spaces such as markets, squares and pedestrian zones as well as the feeling of safety both in the cities and in the respondent neighbourhoods the features that show the highest correlations with the overall satisfaction of living in a city”. Researches show that creating the conditions for people to be sufficiently active would not just save tens of thousands of premature deaths a year, but would also improve competitiveness and bring economic success. There is a growing awareness that a health-enhancing environment is a natural condition for economic performance. But the HEPNESS perspective is something more than making cities more competitive. It is making city more sustainable and inclusive. It is about the quality of life.

For cities, adopting the HEPNESS voluntary roadmap means increasing the level of attractiveness, productivity, property values, health and wellbeing, economic competitiveness, sustainability and inclusive dimensions.

For citizens, living in city able to enhance natural and cultural ecosystem with an active dimension, means access to health and sport environments, means motivation to be active and to improve their lifestyle.

For sport organizations, suggests the possibility to enlarge their boundaries and explore “green commons” and “cultural places” to promote sport activities, reaching also people that does not attend a sport clubs.

The HEPNESS Cities Challenge provides a range of ideas, information and tools for developing a comprehensive plan for creating a healthy, active city by enhancing physical activity in the urban environment. By developing, improving and supporting opportunities in the built and social environments, city leaders and their partners can enable all citizens to be physically active in day-to-day life.

The HCC is an open frame that can be implemented step by step through the following ROADMAP.

MAPPING

- I. map urban assets currently used for physical activity and assess the level of use by active citizens
- II. map underused places with a huge potential to become place for physical activity in the city and understanding the reasons they are not used by citizens
- III. map social environment

NETWORKING

- IV. establish a task force including policy makers, urban designers, grassroots sport clubs, health experts and other relevant stakeholders

VISION and PLANNING

- V. identify vision and strategic dimensions to shape and manage the built and social environment to promote opportunities for active living
- VI. share vision with interested parties
- VII. renew cities planning tools and elaborate a strategic plan for public space management, including temporary uses for sport and physical activity

MANAGING and MONITORING

- VIII. build a new participated and open governance structure
- IX. Evaluate and monitor outcomes and improve the plan

RECOMMENDATIONS The HEPNESS Cities Challenge invites cities to:

1. Integrate sport in built environment:

- Stimulating the adoption of a human centred design approach in order to integrate physical activity into urban policies and plans and promoting innovative design solutions of public spaces;
- Promoting the shifting of transportation models towards more sustainable, smart and active ones;
- Mapping urban spaces and exploring how they can be promoted for outdoor physical activity;
- Promoting sport as a tool for regeneration of abandoned and deprived urban sites;
- Developing a strategic maintenance plan for the upkeep of sport facilities;
- Promoting smart, accessible and sustainable sport infrastructure and 3.0 sport facilities for the multifunctional experiences of both participants and audiences;
- Encouraging Sport everywhere and for the enhancement of the urban green and cultural spaces.

2. Integrate sport in the socio-economic environment:

- Facilitating the TASK FORCE (PPPP) involving sport clubs, schools and civic society organizations to agree new HEPNESS Programs and exploit the interrelation between sport facilities and green spaces surrounding communities for social integration;
- Bringing more creativity in transforming our physical landscape into repopulating our mental landscape;
- Promoting Sport for all events and activities and fostering the collaboration with the agencies, sport clubs and associations promoting health, accessibility and inclusion;
- Encouraging collaboration among schools and sport clubs in developing skills, educational programs and learning patterns for actual transversal competence development;
- Boosting integration of a sport dimension into workplaces for the health of workers and the resultant good of the economy;
- Advancing collaboration among associations, sport clubs and municipalities to promote sport for all and sport as a means for integration, by developing regular awareness events and specific sport programs;
- Organizing and promoting sport events capable of attracting and involving greater numbers of participants;
- Promoting sport opportunities and the cultural offering for tourism development in cities.

3. Integrate sport in the digital environment:

- Developing sport and health activities apps for smartphones, exploiting the potentialities of persuasive technology to promote human's wellness and eco-urban mobility;
- Using of social platforms to promote sport activism, active, healthy activities and raising awareness and knowledge of its importance;
- Improving the project websites by developing the library and the framework of practices;
- Developing a smart participated observatory to monitor the level of participation in sport and physical activity by citizens, to map sport clubs' needs, places and facilities in order to provide a place based knowledge framework to be considered as an aid to making decisions.

4. Integrate sport in the digital environment:

- Promote sport initiatives through digital tools;
- Monitor sport activities by analysing big and thin data.

5. Integrate sport in the transnational context:

- Networking to exchange practices;
- Developing a community of practices;
- Promoting the HEPNESS cities challenge among civic and city leaders;
- Developing new European co-funded projects to support the development of the HEPNESS CITIES network.



part II



FRAMEWORK OF GOOD PRACTICES

Ivaylo Stamenkov, Hristo Dokov

The framework of active sport cities' practices is an integral part of HEPNESS underlying its major concept and scope, and summarizing the work done in collecting and studying diverse applied models, while also trying to find bridges between theory and practice, design innovative algorithm linking the varied HEPNESS-related fields, and define key recommendations for decision-makers.

The document has been developed as a result of the two-year cooperation between the seven HEPNESS partners who not only brought experience from Italy, Germany, Northern Ireland, Slovenia, and Bulgaria, but also engaged themselves to study together the broader picture in the EU and beyond. Moreover, sharing innovative ideas, good practices, and successful models was a focal point in most of the HEPNESS consortium meetings and intra-partner communication. Therefore, all the partners have contributed to the elaboration of the framework of practices, providing different points of view and capitalizing several experiences and knowledge under the coordination of the Footura team.

The framework is aimed to provide a blueprint for creating active cities, support stakeholders and interested parties in the process, and improve their capacities to promote health benefits of physical activities and the positive effects of an integrated perspective between ecosystem services and healthy lifestyles. Being a non-legally-binding document by its very nature, the framework provides decision-makers with guidance for developing and coordinating policies, strategies, plans, programmes, and diverse initiatives in pursuit of a highly effective system of sport, active lifestyles, and active cities. The document is designed to help policy-makers create or improve existing conditions for physical activity and active living in their respective locations by utilizing integral conceptual models and approaches. Therefore, the framework can be perceived as an innovative tool oriented to people, places, and organizations, and coherent with the HEPA guidelines, which aims to contribute to the achievement of some increasingly important areas that are closely connected with the active cities concept, such as sport, health, social inclusion, education, community development, etc. Moreover, the HEPNESS framework of practices integrates and further develops a

holistic perception of the multifaceted benefits deriving from the promotion of outdoor physical activities for all and the sustainable exploitation of natural and cultural ecosystems.

The framework is based on both top-down and bottom-up approaches, with predominant emphasis put on the latter as the basic units are considered able to reach targets and promote health benefits and active lifestyle, while cooperating in European partnerships to share strategic concepts for health promotion and disseminate progressive models. Furthermore, the holistic and integrated approach, adopted by the document, stimulates building new dynamic laboratory networks, where academic know-how and scientific skills meet practices and experiences in order to support the development of health and sport cities. Thus, the framework aims to link theory, experience, and practice (policy).

**WHAT IS THE
FRAMEWORK
FOR?**

Given all that, the HEPNESS framework of practices could be used:

- to bring together current research, available knowledge, and good practices, and, based on that, draw some important recommendations;
- to collect, scrutinize, and export practices, and promote active lifestyle benefits for citizens;
- to enable cities to articulate a clear active and sport programmes enhancing both physical activities and ecosystems services;
- to provide flexibility for local policy-makers to integrate their knowledge and skills within a more active city context;
- to bring the HEPNESS concept, ideas, and goals into practice offering sustainable solutions at different territorial levels (local, regional, national, supranational).

The implementation of the recommendations on active and healthy lifestyles included in the framework can contribute to achieving a number of the UN-set Sustainable Development Goals with a time span until 2030. Direct or indirect links can be sought with: goal 3 (good health and well-being); goals 4.1 and 4.2 (quality education); goal 5.1 (gender equality); goal 8 (decent work and economic growth); goal 9.1 (industry, innovation, and infrastructure); goals 10.2 and 10.3 (reduced inequalities); goals 11.2, 11.3, 11.6 and 11.7 (sustainable cities and communities); and goals 13.1 and 13.2 (climate action).

In a view of its objectives to turn into a practical tool, answer specific public needs, and bring synergistic effects, the HEPNESS framework is designed to be fully in line with the relevant EU and WHO policies

and thematic documents, as well as with the outputs produced by some important networks, pioneering initiatives, and innovative projects at EU level. Here, some of the key papers and deliverables are outlined as they have shaped to a large extent the concept of the HEPNESS framework and can be also treated as an inseparable part of it.

REFERENCE PAPERS By Article 6 and Article 165 of the Treaty on the Functioning of the European Union, the EU has been assigned the competence, according to which sport is an area where actions at EU level should support, coordinate, and supplement the actions of Member States. Given that important role, the EU institutions have published some key documents, which have brought sport and health firmly into the EU agenda: The Green Paper on Promoting healthy diets and physical activity: a European dimension for the prevention of overweight, obesity and chronic diseases (2005); The White Paper on Sport (2007); The Leipzig Charter on Sustainable European Cities (2007); The EU Physical Activity Guidelines – Recommended Policy Actions in Support of Health-Enhancing Physical Activity (2008); The European platform against poverty and social exclusion (2010); The European Commission’s Communication on Sport (2011); The EU Work Plan for Sport 2011-2014; The Council Recommendation on Promoting Health-Enhancing Physical Activity Across Sectors (2013); The Special Eurobarometer on Sport and Physical Activity (2014); and The EU Work Plan for Sport 2014-2017.

On the other hand, some of the most influential recent publications of the WHO Regional office for Europe that were considered in preparing the framework are: Global Strategy on Diet, Physical Activity and Health (2004); Promoting Physical Activity and Active Living in Urban Environments. The role of local governments (2006); Steps to Health: a European Framework to Promote Physical activity for Health (2007); A healthy city is an active city. A physical active guide (2008); Promoting sport and enhancing health in European Union countries: a policy content analysis to support action (2011); Health 2020: The European policy for health and well-being (2012); and Physical activity strategy for the WHO European Region 2016-2025.

Furthermore, the framework takes into consideration ideas, experiences, and results derived from some relevant networks and cooperation projects, such as: European Healthy Cities Network; The European network for the promotion of health-enhancing physical activity (HEPA); Improving Infrastructures for Leisure-time Physical

Activity in the Local-Arena; SPaCE – Supporting Policy and Action for Active Environments; VITAL CITIES; Placemaking4Cities; Building Healthy Communities; URBAMECO; and TOGETHER for Territories of Co-responsibility.

Other documents and publications that are not only directly related to HEPNESS, but can also be treated as a vital part of any framework aimed to promote health and active living are: different WHO documents and publications dedicated to sport and active living (e.g. Global action plan on physical activity 2018-2030; Women, Aging and Health: A Framework for Action; Active Aging: A Policy Framework; Global strategy and action plan on ageing and health); Zagreb Declaration for healthy cities; HEPA-Handbook, delivered by the network for European knowledge exchange in sports development; Territorial Agenda 2020; Active city development strategy (TAFISA); Cities for health; Designed to move: a guide for city leaders; The world urban campaign “The city we need”; The RTPi “Planning Horizons: Promoting Healthy cities”; “The Joint Action Plan for health promotion at sport clubs” (a deliverable from a previous EU project where Footura and USMA were involved); as well as many scientific research papers mentioned in the HEPNESS literature review section.

**COLLECTION
AND ANALYSIS
OF GOOD
PRACTICES**

After taking into consideration the above mentioned versatile literature, the next crucial step in preparing the framework, and also one of the tasks for the implementation of HEPNESS itself, was connected with collection and analysis of good practices – not only from the project’s partner countries, but also across Europe.

For this purpose, a special template was created including basic information for each activity (see *Appendix 1*):

- official name;
- when and where realized;
- the territorial scope (from local to supranational);
- the organizer and its type (EU institutions, national ministries and state agencies, municipalities/cities, NGOs, private firms/clubs or multi-partner project/activity);
- the exact type of activity (classified in 10 groups) with a brief description of the good practice.

In the end, 52 good practices related to the HEPNESS concept and objectives were collected, summarized in a database, and analysed in details. Most of them were from the project’s partner countries, but there were also examples taken from Spain, Portugal, Croatia, the Czech Republic, Norway, and Hungary. To provide up-to-date picture

and scrutinize the newest applied models, concepts, practices, etc., most of the selected activities have been realized in the recent years or are still ongoing. Given the place-based approach sought by this framework, the majority of the good practices included have a more limited spatial scope being applied generally at local or regional level, despite some of them having further effects and even being later transmitted at national or supranational level. This is the reason why most of the good practices are with municipality as leading organization, while national public authorities, NGOs, and private companies/clubs have often been vital part of the partnership in those programmes/initiatives.

Considering the type of activities, out of the 10 pre-set categories in the template, the largest number of the collected good practices concern programmes promoting activity, followed by physical actives in natural and cultural ecosystems, special events/days, regular outdoor trainings, building of health promoting infrastructure, while significantly less activities cover dissemination of awareness tools and materials, HEPA in labour policies and practices, health promotion in tourism, as well as rehabilitation of old industrial zones.

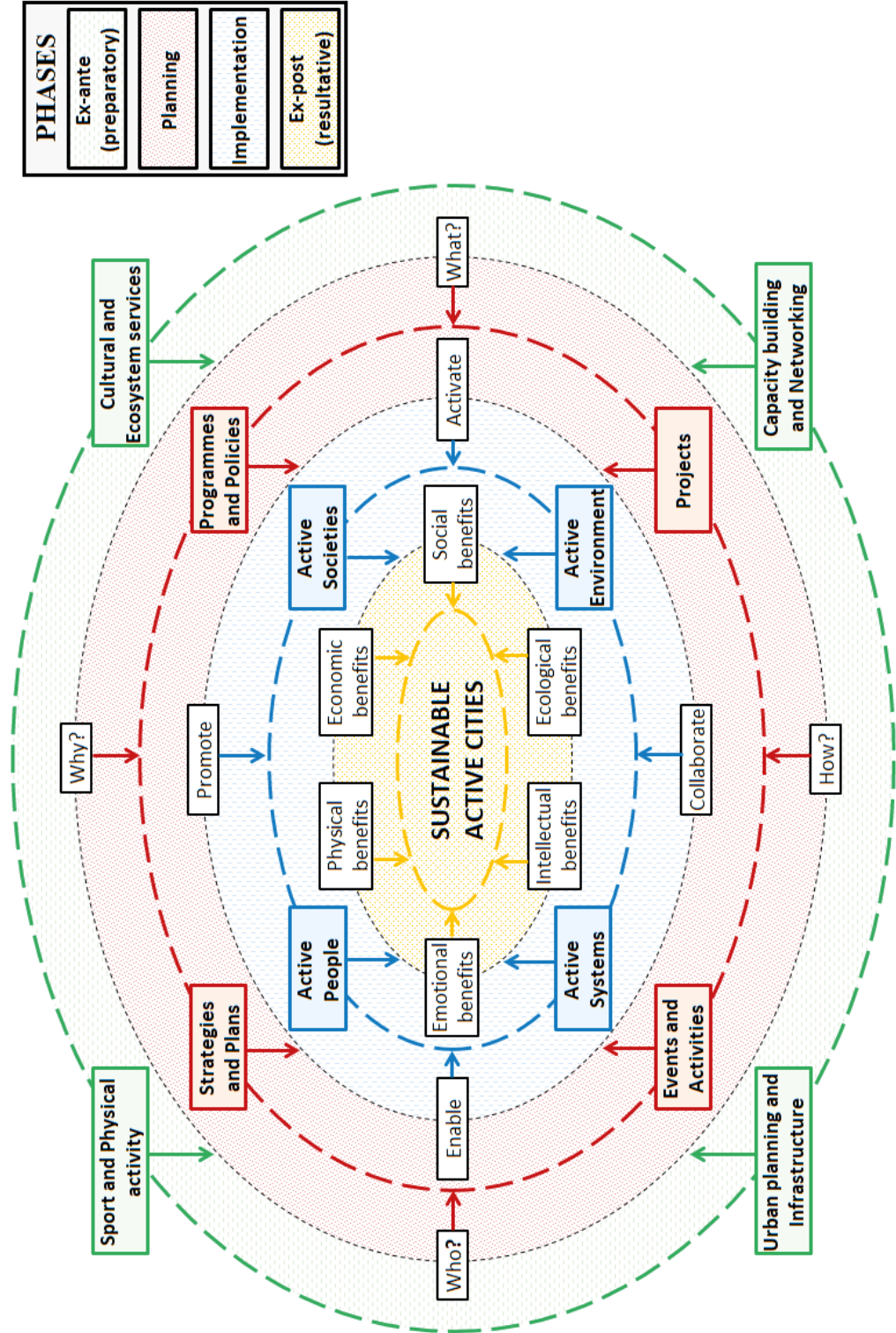
The study of those diverse in nature, scope, and territorial context good practices, and of the different methodological approaches, tools, and mechanisms used in the process of their implementation, made it possible not only to uncover some unused potentials, but also to recognize some of the threats that represent the major stumbling-blocks in front of promoting active cities. In order to increase the applicability and the practical value of the HEPNESS framework, the identified present and potential positive and negative aspects are summarized in the form of a SWOT analysis (see **Table 1**). This analysis can be useful for any city/organization that aims to raise awareness of active living benefits and to improve health and well-being of the citizens.

Further, based on the SWOT analysis and HEPNESS scientific research, the framework of practices provides a very applicable model/algorithm designed to help decision-makers find a common approach to develop, in a structured and coordinated way, active resilient cities. In a schematic view this algorithm can be depicted as a quasi-hierarchical structure having four basic levels, with certain “transmission mechanisms” between them aimed to guide the processes and ensure the successful transfer of concepts, goals, and results between the levels (see **Figure 1**). Thus, the adopted deductive approach and logic form a conceptual model connected with: definition of key spheres linked to active cities concept;

Table 1: SWOT ANALYSIS CONSIDERING PROMOTION OF ACTIVE CITIES

S	W	O	T
Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> • availability of physical activity infrastructure • often not expensive restructuring of the existing urban environment to meet active cities' needs • already gained experience at EU level • increased capabilities for exploration, mapping, programming, and promotion • better connectivity options • constant improvements with regard to accessibility, pedestrian and cycling infrastructure • improved awareness/ sensibility of communities about active lifestyle • differentiated policies in regard to "at risk" population inclined to sedentary lifestyle 	<ul style="list-style-type: none"> • not well promoted and exploited physical activity infrastructure, especially for incidental activity • lack of financial, funding, volunteers, and workforce resources • lack of an adequate communication between citizens and local authorities • insufficient networking between the different stakeholders and stockholders • lack of people-centred perspective in the urban planning • high level of individual car usage • insufficient disability access to services and facilities 	<ul style="list-style-type: none"> • using innovative creative models for finding solutions to well-being issues • finding clear connection between the competitiveness of the city and active living and well-being • fostering different types of benefits: health, social, economic, etc. • new urban infrastructure oriented towards physical activity • activities increasing attractiveness for locals and visitors • development of walkability opportunities • access to multi-functional public open space and infrastructure • participation of politicians and celebrities in campaigns for a more active way of living • exploiting synergies with other public or private initiatives 	<ul style="list-style-type: none"> • insufficient understanding from the political decision-maker and planners • insufficient presence of healthy lifestyle in strategic and planning documents • various benefits of active lifestyles often underestimated • low interest and participation • difficulties in fostering active workplaces and employees • issues with road and public open spaces safety • the development of technology and its link with the sedentary lifestyle

Figure 1: CONCEPTUAL MODEL FOR DESIGNING/PROMOTING ACTIVE CITIES



identification of problems/needs; creation of an entire vision; design of relevant strategies/activities in certain planning horizons; practical application of all planned initiatives; measuring impacts/benefits.

THE CONCEPTUAL MODEL

From that point of view, four different phases could be conditionally recognized: *ex-ante* (preparatory), *planning*, *implementation*, and *ex-post* (resultative).

The HEPNESS literature review and scientific research, as well as the study of concrete practices and operating frameworks, suggest that the specific spheres generally playing a key role in creating sustainable active cities are: sport and physical activity; cultural and ecosystem services; urban planning and infrastructure; and capacity building and networking.

In line with that conclusion, a major focus should be put on:

- promoting the importance of physical activity and raising public awareness and motivation;
- providing better conditions for more active lifestyle for all ages, abilities, and cultures;
- decreasing the number of physically inactive people; exploiting the opportunities provided by social-ecological systems;
- developing infrastructure facilities that make physical activity easy and accessible;
- applying well-planned and cost-effective investments;
- increasing the knowledge and capacity of people involved in the planning process;
- creating wide networks to generate synergies and added value.

To make the connection between these points of interest and the planning phase itself, answers to a few very important questions (Government of Western Australia, 2017) should be provided: **Why?** – the exact reasoning behind the initiatives taking into account the specific economic, environmental, social, health, etc. needs of the community and problems to be dealt with; **What?** – setting a clear vision, key priorities, strategies, goals, etc., i.e. envisaging of what an active city would look like; **How?** – methodology and tools to be used in achieving the desired results; **Who?** – stakeholders and stockholders that will be involved in the process. Answering these vital questions could be strongly supported by having and processing the right empirical data, by understanding of certain motivation patterns and behavioural models, by adopting lessons learned from different case-studies and experiences. Besides context and needs analysis, crucial role in the transition between the *ex-ante*

(preparatory) and the planning phases might also play SWOT analysis and cost-benefit analysis.

Once the foundations are laid, the next logical step in the planning phase is to find the right means to foster the processes taking into consideration the specific needs, visions, priorities, goals, etc. This could be done in various forms, such as: strategies and plans; programmes and policies; projects; events and activities.

The active cities concept suggests that these initiatives would benefit from following some key principles in this planning stage (Government of Western Australia, 2012): acknowledge a variety of existing strategies and plans; be responsive to national agendas around physical activity and health; be fully aware with the diverse approaches and tools to promote physical activity and sport; be evidence-based when possible; be integral to the work of other sectors, e.g. planning, transport, health, education, tourism and recreation; integrate very well public, private, and voluntary sectors and civil society; include in its conceptual framework adequate ways to guide and support all parties involved in the implementation process; provide an overall direction for increasing physical activity, secure and align stakeholder's commitment; be structured, flexible enough, well-timed, and feasible in future practice.

The initial stage in the implementation process is aimed to steer the application and bring theory to practice by providing a wide conceptual prism based on 4 essential initiatives – promote, activate, collaborate, and enable. Those approaches present the step-change needed to create the opportunities that maximize the impact of existing work (Westminster City Council, 2017), and to generate multiplier effects and potentials for changing the status-quo.

PROMOTE – promoting the importance of active lifestyles and active cities; enhancing attractiveness of physical activity by making people (both local citizens and tourists) aware of its multiple benefits; applying integrated approach to reach and inform as many people as possible: through various public authorities, sports, scientific, and other types of organizations, non-governmental organizations, the health sector, the leisure industry, media coverage, etc.

ACTIVATE – stimulating increased participation in physical activity by offering more progressive lifestyle alternatives for everyone; engaging new (previously disadvantaged) people/communities by focusing on specific topics (racism, discrimination, harassment, etc.) or target groups (disabled people, disengaged youth, elderly people, migrants, etc.); applying improved methodology for “active

urban planning” by using GIS models to avoid “segregation” in the accessibility of individual urban areas to the infrastructure necessary for active lifestyle; setting up an awareness and engagement mechanism for the largest possible number of people to become active and staying active.

COLLABORATE – working together with partners, stakeholders, and stockholders on the base of partnership agreements implying common principles, ideas, and goals; adopting participatory and collective approaches to involve (if appropriate) national and local governments, NGOs, the private sector, health care professionals, planners and urban designers, academia and tertiary education, advertising and media, volunteers and the workforce in the healthier lifestyle industry, etc.; ensuring well-functioning coordination between people, organizations, and authorities.

ENABLE – fostering a creative process where cities enhance resources before building new infrastructures; utilizing different approaches, models, and principles for informing, motivating, and changing people’s behaviour to be more active and local authorities ready for such challenges; making clear connection of active lifestyle with all planning, design, and infrastructure decisions while taking into account the importance of scientific research for the practice; adopting ecological models to guide the urban planning of parks and green structures and optimize their design and functions by taking into account aesthetics, safety, maintenance, rules, accessibility, etc.; developing tailor-made initiatives with a place-based approach that accounts for the specific characteristics and needs of the locality.

The **PACE** (*Promote, Activate, Collaborate, Enable*) method itself can be perceived as the needed instrument to ensure direct connection with the 4 strategic elements, recognized by WHO (2018) as the ones that “capture the whole-of-system approach required to create a society that intrinsically values and prioritizes policy investments in physical activity as a regular part of everyday life”, namely – creating *Active People, Active Societies, Active Environment, and Active Systems*.

ACTIVE PEOPLE – citizens of all ages and abilities are engaged in regular physical activities as individuals, families, and communities, with people having access to opportunities and programs across multiple settings, while sport and physical activity has become a vital part of their daily routine life.

ACTIVE SOCIETIES – characterized with a paradigm shift in the whole society with enhancing understanding of and appreciation for the multiple benefits of regular physical activity.

ACTIVE ENVIRONMENT – featuring more active places/spaces with built sustainable environments that promote and safeguard the rights of all people to have equitable access to safe places and spaces, in their cities and communities, in which to engage in regular physical activities.

ACTIVE SYSTEMS – recognized by strengthened leadership, governance, multisectoral partnerships, workforce capabilities, as well as advocacy and information systems across sectors able to achieve excellence in resource mobilization and implementation of coordinated international, national and subnational actions to further increase physical activity and reduce sedentary behaviour.

In the HEPNESS concept Active People, Active Societies, Active Environment, and Active Systems are not considered an “end product” or a “final purpose”, but are perceived as a fertile medium able to stimulate new processes and further induce positive changes. Then, the generated benefits play a key linking role for the transition to an active city that is fully in line with urban sustainable development ideal. These benefits can have a diverse nature – physical, economic, social, ecological, intellectual, emotional, etc. Measuring and evaluating the effects/impacts at this ex-post (resultative) phase could not only contribute to the active living agenda, but also provide impetus for the cities to stay on the right course – being concerned about the health and well-being of its entire population, constantly seeking to provide a built and social environment for active living, laying down this mission in urban planning, strategic documents, and political initiatives.

CONCLUSIONS The HEPNESS framework of active cities’ practices is based on the perception that innovation is not necessary found only in the simple idea to promote outdoor activities in natural and cultural contexts, but is also contained in the proposed strategic model/algorithm that implies integral, multisectoral, collective, and coordinated approaches to achieve all the positive benefits that make up the basis of a sustainable active city. Moreover, the idea to combine active cities perspective with cultural and natural assets enhancement generates new potentials able to improve the socio-economic environment, to provide benefits for citizens and tourists, and to enhance landscape values and preserve nature. Therefore, the practical application of the framework could support enhanced public and social motivation, strengthened political efforts and commitment to collaborations and partnerships to advance new synergies, integration of scientific achievements into practice and,

last but not least, mainstreaming the whole concept of “Healthy Environment Promotion aNd Ecosystem Services Support for ACTIVE CITIES development” (HEPNESS). Thus, the framework generates new leadership for the promotion of healthy sport cities and reinforces the capacity of decision-makers to set priorities, define people-centred policies, develop appropriate interventions, and be well-prepared to deal with the future challenges.

Appendix 1: BASIC INFORMATION FOR EACH ACTIVITY

ID	NAME	PERIOD	COUNTRY	PLACE	TERRITORIAL LEVEL	ORGANIZER	TYPE OF ORG.	TYPE OF ACT. (I)	TYPE OF ACT. (II)	TYPE OF ACT. (III)
GP1	Active Vallecas	2013 ongoing	Spain	Entrevías, Madrid	Local	City Council and Health Min. of the Comm. of Madrid	Municipalities/Cities	Programmes promoting activity	HEPA in labour polic. & practic.	
GP2	International Building Exhibition Emscher Park	1989-1999	Germany	Ruhr district	Regional	State Gov. of North Rhine-Westphalia	National ministries and state agencies	Phys. activ. in nat. & cult. ecosyst.	Building HP infrastr. cult. ecosyst.	Rehabil. of old industr. zones
GP3	PUMP - For a Million Steps	2008 ongoing	Spain	Andalusia	Regional	Andalusian Regional Ministry of Health	National ministries and state agencies	Programmes promoting activity	Phys. activ. in nat. & cult. ecosyst.	
GP4	The Lombardy Workplace Health Promotion Network	2011 ongoing	Italy	Lombardy	Regional	Lombardy Region public authorities	National ministries and state agencies	Programmes promoting activity	HEPA in labour polic. & practic.	
GP5	The walking school bus	2003 ongoing	Italy	Rome	Local	The City Council of Rome	Municipalities/Cities	Programmes promoting activity		
GP6	Up-to-date health - Running and Walking Centre in Tondela	2013 ongoing	Portugal	Tondela	Local	Municipality of Tondela	Municipalities/Cities	Programmes promoting activity	Regular outdoor trainings	
GP7	Well London Programme	2007 ongoing	England	London	Local	Greater London Authority and the BLW Fund	Multi-partner project/activity	Programmes promoting activity		

GP8	Fieldlab Sport Innovation & Stimulation (ProFit)	2009-2015	Netherlands, Belgium, England	Eindhoven, Delft, Kortrijk, and Sheffield	Local	Sports and Technology Foundation	Multi-partner project/activity	Programmes promoting activity	Building HP infrastruct.	Other
GP9	Tourism valorisation of the St. Anthony Channel in Šibenik	2012-2014	Croatia	Šibenik-Knin County	Regional	Public Inst. for the Management of the Prot. Natural Value	National ministries and state agencies	Phys. activit. in nat. & cult. ecosyst.	Building HP infrastruct.	Health promotion in tourism
GP10	Woonerf	ongoing	Netherlands	Netherlands	National	Separate city authorities	Municipalities/Cities	Building HP infrastruct.	Other	
GP11	6 minutes for health path	2013 ongoing	Czech Rep.	Usti nad Labem	Local	The city in cooperation with health ins. comp.	Municipalities/Cities	Programmes promoting activity	HEPA in labour polic. & practic.	Dissemin. of awareness tools & mat.
GP12	Active parks initiative in Birmingham	2014 ongoing	England	Birmingham	Local	The City Council in partnership with various organiz.	Multi-partner project/activity	Programmes promoting activity	Regular outdoor trainings	Phys. activit. in nat. & cult. ecosyst.
GP13	BikeLJ bicycle-sharing system	2011 ongoing	Slovenia	Ljubljana	Local	City of Ljubljana with Europlakat comp.	Municipalities/Cities	Building HP infrastruct.	Health promotion in tourism	
GP14	Guided group running exercises in Slovenian cities	2015 ongoing	Slovenia	various Slovenian cities	National	Vzajemna Mutual Health Insurance Company	National ministries and state agencies	Programmes promoting activity	Regular outdoor trainings	Phys. activit. in nat. & cult. ecosyst.
GP15	Ice-skating park Horten	2016 ongoing	Norway	Horten	Local	The municipality of Horten	Municipalities/Cities	Programmes promoting activity	Regular outdoor trainings	Health promotion in tourism

GP16	March along the Barbed Wire	1957 ongoing	Slovenia	Ljubljana	Regional	City of Ljubljana and sponsors	Municipalities/ Cities	Special events/days	Phys. activit. in nat. & cult. ecosyst.	
GP17	Neighborhood community festival in Budapest	2014 ongoing	Hungary	Budapest	Local	Sport and Culture District Div. with a local civic organiz.	Municipalities/ Cities	Programmes promoting activity	Special events/days	Dissemin. of awareness tools & mat.
GP18	Outdoor sports infrastructure in Ljubljana	1945 ongoing	Slovenia	Ljubljana	Local	Javni zavod Šport Ljubljana	Municipalities/ Cities	Regular outdoor trainings	Phys. activit. in nat. & cult. ecosyst.	Building HP infrastruct.
GP19	Skate park Izgrev	2015	Bulgaria	Burgas	Local	Burgas Municipal Council + informal group	Municipalities/ Cities	Regular outdoor trainings	Building HP infrastruct.	Rehabil. of old industr. zones
GP20	The Ljubljana Marathon	1996 ongoing	Slovenia	Ljubljana	Supranational	City of Ljubljana and sponsors	Municipalities/ Cities	Special events/days	Phys. activit. in nat. & cult. ecosyst.	
GP21	All Stars Disability Summer Scheme	2006 ongoing	Northern Ireland	Gilford	Local	Armagh City, Banbr. and Craigavon Borough Council	Municipalities/ Cities	Programmes promoting activity		
GP22	Sport In The Community – Midnight Street Soccer	2006 ongoing	Northern Ireland	Portadown, Craigavon, and Lurgan	Regional	Armagh City, Banbr. and Craigavon Borough Council	Municipalities/ Cities	Programmes promoting activity	Special events/days	Regular outdoor trainings
GP23	Sport In The Community – Multi-Use Games Area Project	2010 ongoing	Northern Ireland	Portadown, Craigavon, and Lurgan	Regional	Armagh City, Banbr. and Craigavon Borough Council	Municipalities/ Cities	Programmes promoting activity	Special events/days	Regular outdoor trainings

GP24	Community Champions League Tournament	2015-2017	Northern Ireland	Portadown	Regional	Armagh City, Banbr. and Craigavon Borough Council	Municipalities/ Cities	Programmes promoting activity	Other	
GP25	EVERY BODY ACTIVE 2020	2016 ongoing	Northern Ireland	Northern Ireland	National	Angharad Bunt/ Conor Cunnning	Multi-partner project/activity	Programmes promoting activity		
GP26	Active Clubs	2014-2019	Northern Ireland	Northern Ireland	National	Sport Northern Ireland funded programme	Multi-partner project/activity	Programmes promoting activity	Special events/days	Regular outdoor trainings
GP27	Sport NI EBA 2020 Strand One	2016 ongoing	Northern Ireland	Armagh City Banbridge & Craigavon	Regional	Local authorities (Councils)	Multi-partner project/activity	Programmes promoting activity	Special events/days	
GP28	A Bicycle-Rollerblading Line	2012	Bulgaria	Kyustendil	Local	Municipality of Kyustendil	Municipalities/ Cities	Phys. activ. in nat. & cult. ecosyst.	Building HP infrastruct.	
GP29	From train station to sports park	1997 ongoing	Germany	Halle	Local	The Municipality of Halle	Municipalities/ Cities	Building HP infrastruct.	Rehabil. of old industr. Zones	
GP30	Mellowpark	2001 ongoing	Germany	Berlin	Local	The Municipality of Berlin	Municipalities/ Cities	Special events/days	Regular outdoor trainings	Rehabil. of old industr. Zones
GP31	Post-airport usage of Tempelhof	2008 ongoing	Germany	Berlin	Local	The Municipality of Berlin	Municipalities/ Cities	Regular outdoor trainings	Phys. activ. in nat. & cult. ecosyst.	

GP32	Green cross-border area – investment in nature	2013-2015	Bulgaria	Kyustendil	Local	Municipality of Kyustendil	Municipalities/Cities	Phys. activit. in nat. & cult. ecosyst.	Building HP infrastruct.	
GP33	Walking and browsing different sport options	ongoing	Italy	Vicenza	Local	Municipality of Vicenza	Municipalities/Cities	Programmes promoting activity		
GP34	With the heart, for the heart	ongoing	Italy	Vicenza	Local	P.A. Croce Verde Vicenza onlus	NGO	Special events/days	HEPA in labour polic. & practic.	Dissemin. of awareness tools & mat.
GP35	Vicenza, Walks with emotion	2015-ongoing	Italy	Vicenza	Local	Associazione culturale L'Ideazione	Private firms/clubs	Phys. activit. in nat. & cult. ecosyst.	Health promotion in tourism	Dissemin. of awareness tools & mat.
GP36	Summer at Parco Querini	2007-ongoing	Italy	Vicenza	Local	Municipality of Vicenza	Municipalities/Cities	Regular outdoor trainings	Phys. activit. in nat. & cult. ecosyst.	
GP37	Make an impression – Vicenza network for physical activities	ongoing	Italy	Vicenza and Treviso	Local	ULSS 8 Vicenza	Municipalities/Cities	Programmes promoting activity	HEPA in labour polic. & practic.	Dissemin. of awareness tools & mat.
GP38	The Living energy	2017	Italy	Vicenza	Local	AIM Energy	Private firms/clubs	Programmes promoting activity	Special events/days	HEPA in labour polic. & practic.

GP39	Progetto OMNIBUS	2016 ongoing	Italy	Vicenza	Local	Arti della Rappres. & Organizzazione MasterAtletica	Multi-partner project/activity	Programmes promoting activity	Special events/days	Phys. activit. in nat. & cult. ecosyst.
GP40	Bread, butter and marmalade... the energy on the move	2017	Italy	Vicenza	Local	Municipality of Vicenza	Municipalities/Cities	Special events/days	Phys. activit. in nat. & cult. ecosyst.	HEPA in labour polic. & practic.
GP41	Sport, art and tourism ... an important challenge	2017	Italy	Vicenza	Local	Municipality of Vicenza	Municipalities/Cities	Programmes promoting activity	Special events/days	Other
GP42	Going further... project "together"	ongoing	Italy	Vicenza	Local	Rangers Rugby Vicenza	Private firms/clubs	Programmes promoting activity	Dissemin. of awareness tools & mat.	Other
GP43	Civil Protection, Physical Education, Sport	ongoing	Italy	Vicenza	Local	Rangers Rugby Vicenza	Private firms/clubs	Programmes promoting activity	Regular outdoor trainings	Dissemin. of awareness tools & mat.
GP44	Padova Running	2010 ongoing	Italy	Padova	Local	Padova City Council and Police Force	Municipalities/Cities	Special events/days	Regular outdoor trainings	Building HP infrastruct.
GP45	Nordic walking in the Euganean Hills	2015	Italy	Euganean Hills	Local	Consorzio Terme Euganee	Multi-partner project/activity	Special events/days	Phys. activit. in nat. & cult. ecosyst.	Health promotion in tourism
GP46	The Bicycle Festival – Cycling: Energy for life	2015	Italy	Padova	Local	Padova City Council	Municipalities/Cities	Programmes promoting activity	Special events/days	

GP47	The Treviso to Ostiglia Cycleway	2012 ongoing	Italy	Treviso to Ostiglia	Regional	Ostiglia Ciclabile Committee	Multi-partner project/activity	Phys. activit. in nat. & cult. ecosyst.	Building HP infrastruct.	Rehabil. of old industr. Zones
GP48	Yoga in Thermal water	2016 ongoing	Italy	Abano Terme	Local	Tuatara Yoga	Private firms/clubs	Programmes promoting activity	Phys. activit. in nat. & cult. ecosyst.	Health promotion in tourism
GP49	ABC Road Races & Fun Runs	2017	Northern Ireland	Armagh City Banbridge & Craigavon	Local	Armagh City, Banbr. and Craigavon + Local Clubs	Municipalities/Cities	Programmes promoting activity	Phys. activit. in nat. & cult. ecosyst.	
GP50	Get Out Get Active	2016 ongoing	Northern Ireland	Armagh City Banbridge & Craigavon	Local	Live Active NI	NGO	Programmes promoting activity	Special events/days	Phys. activit. in nat. & cult. ecosyst.
GP51	Girls Active Northern Ireland	2016 ongoing	Northern Ireland	Armagh City Banbridge & Craigavon	Regional	Girls Active (a Youth Sport Trust) + Armagh City, Banbr. and Craigavon	Multi-partner project/activity	Programmes promoting activity	Special events/days	Other
GP52	Skatepark Bonn	2017 ongoing	Germany	Bonn	Local	Civil society. Subculture Initiative and the city admin. of Bonn	Multi-partner project/activity	Programmes promoting activity	Regular outdoor trainings	Other



PILOT ACTIONS IN SOFIA, VARNA AND KARLOVO, BULGARIA

Emiliyan Metodiev, Hristo Dokov, Ivaylo Stamenkov

The participation in a large-scale and wide-scope project, within a consortium of different types of organizations dedicated to the common goal of promoting active living and active cities, provided Footura with a unique opportunity to further develop, extend, and realize its immanent ideas and activities. Following the models and logic laid down in the HEPNESS framework of practices, and after adapting them to Footura's specific resources, capacities, and scopes of action, we have created an initial plan covering the initiatives to be developed for the duration of the project. Later, that conceptual framework was fine-tuned during the discussions within the local taskforce group where decisions about specific mechanisms and approaches to be used were also taken. This initial phase of the project was also used to develop a sort of an action plan to guide us through the realization of our HEPNESS-based activities in qualitative and feasible way and in accordance with the objectives, methodology, deadlines, activities, and budget set out in the project.

DESIGN AND METHODOLOGY

The design and implementation of the activities was connected with elaborating a methodological holistic perspective and finding creative models of how to transmit the theoretical framework into practice in order to ensure coherence with HEPNESS concept, taking also into account the results from our needs and context analysis and the availability of our resources. Here a special emphasis was put on developing cost-effective initiatives that rely strongly on integral approach, building effective partnerships, and clever choice of localities that could generate themselves added value impacts. The adopted inclusive models were aimed not only to make the best use of the available resources, but also to widen the scope of our activities and form a network of dedicated partners working together with common HEPNESS-based missions, visions, and goals. Furthermore, our methodological perspective suggested a search for a sustainable model, with integrated long-term goals, where organized events/activities would replicate or even form a sequence of new initiatives in the future generating sound multiplication

effects in this way. From that point of view, our activities in urban environment were also directed at developing various practical tools for future use (such as map of sport in Sofia, urban routes for active lifestyle, etc.).

The implementation of the pilot actions followed the main HEPNESS tools, emphasizing promotion, innovation, and connectivity with primary focus on enhancing movement and sport in different types of open-air urban environments – streets, sidewalks, squares, parks, alleys, etc. Our methodology also included various sport models with a special focus on: combining sports activities with culture, art and traditions, charity, non-formal education, fair play, etc. To implement our pilot activities, we also took into account diverse aspects of the contemporary society in Bulgaria: cultural and family ties, gender equality, ethnicity and religion, integration of migrant groups, etc. Moreover, the social role of sport was immanent part of all our activities as we considered it an important part of Footura’s mission to fight social imbalance, which are so typical in the Bulgarian context. As young people are most vulnerable to social imbalances, they are also most vulnerable to positive social activities and models. Thus, by changing their perceptions through utilizing sustainable models of socially oriented sport, we aim to also change our common future.

Our main concept was built around realizing (and partnering in) a number of sport events in different urban environments. The bulk of the events was in Sofia, but we were also involved in promotion and implementation of two pilot actions outside the capital – in Varna (the third largest city in Bulgaria), as well as in the small town of Karlovo (near the second largest city – Plovdiv). The implementing of our pilot actions in Sofia was supported not only by our long-standing experience in organizing different activities in the city, but also by the special openness and attractiveness of Sofia and the near mountain to year-round sports activities related to the statute of the city as the “European capital of sport 2018”.

Our desire to conduct pilot actions outside Sofia was more or less also connected with the European statute awarded to Varna (“European Youth Capital 2017”) and Plovdiv (“European Capital of Culture for 2019”). Thus, we aim not only to present our HEPNESS activities to a wider national and international audience, but also to direct them more towards themes like youth and culture, linking those topics with the perception of sport and active cities and the potential synergies and added values.

THE TARGET GROUP

The organized events were aimed at the general public, with a special focus on children and youths up to 29 years old. We also tried to adjust event programs so they can give a positive opportunity to everyone, including people with low mobility, elderly people, socially excluded people, and other risk groups in terms of inactive lifestyles. All the events were open for all interested citizens who had opportunities to engage as participants, volunteers, or simply as spectators. Through our events and their subsequent “reflection”, we also aimed to reach “secondary” target groups – people from the social and geographic circles of the participants, who, being touched by the impacts of the events and their positive messages, could become motivated to share and engage further in physical activities.

In addition to the above-mentioned target groups, the implementation of our pilot actions is also targeted at various organizations and institutions.

We recognized as key partners municipal public authorities, NGOs, professional associations, sport clubs, and others. In this regard particularly important are organizations representing and/or dealing with risk groups. During realizing our HEPNESS initiatives we also used the opportunities to cooperate with other clubs and organizations, as well as with the Sofia Municipality aiming to contribute to the development of the Bulgarian capital as a city of sport and active lifestyle.

All that provided us with the chance to exchange experiences, engage in many organized events for children and adolescents, participate in discussions concerning the development of the city and the Vitosha mountain region (with regard to winter sports), and spread further the HEPNESS ideas.

ORGANIZATION OF PILOT ACTION EVENTS

The nature of our pilot activities was directly related to the goal set in the HEPNESS project – to improve understanding and awareness of the benefits of more active lifestyles for citizens, communities, institutions, and decision-makers. We found this very important especially given that in the recent years the Bulgarian society is at the bottom of the European charts in a number of indicators: weekly/daily sport activities, sedentary lifestyle, overweight, cardiovascular problems, smoking, harmful foods, etc.

Given our capacity to organize open sports events of all kinds and, above all, to promote the values of sport, active lifestyle, and sport for social inclusion, we relied on our experience to design integral model for the preparation, realization and coverage of our pilot action events. The main guiding goals that were set from the very

beginning were connected with:

- attracting adequate partners, supportive organizations and companies, volunteers, and other interested parties;
- utilizing inclusive approach to activate different social, age, ethnic, etc. groups;
- developing an attractive and varied program – not just sport initiatives, but also other kinds of cultural, art, charitable, and social activities, accompanied by informational campaigns;
- providing appropriate and non-intrusive media coverage, which aims to increase the awareness in specific regions and among certain target groups, especially young people.

ACTIVITIES A short description of the implemented activities explains further our ideas, tools, locations, and target groups:

Mapping of sports organizations, clubs, and sport facilities – the main aim was to integrate the existing data and collect all the useful information in one easy to use webpage, and then start a project for designing the respective mobile application. Thus, we created good conditions for easy orientation in over 1000 sport entities represented on the map, including basic data with regard to types of sport offered, working time, address of the facility, contact person, etc. By mapping sport in Sofia, we raised the awareness of the citizens about diverse sport opportunities (making them “visible” and easy to access), motivated people to visit sport clubs and organizations, and encouraged clubs and organizations get more involved in the process of health promotion and stay in touch within partnership networks to solve problems and exploit opportunities. Since its start in March 2018 the “Map of sport” page in Footura’s website reached over 6000 users.

Baba Marta was in a hurry – organized as a grassroots event it combined one of the largest traditional cultural holidays in Bulgaria (1st of March – Baba Marta Day) with sport and active lifestyle by providing opportunities for children, youths, and refugees to participate in different running disciplines in Sofia. After the awarding ceremony the participants were further engaged in fun games and activities, as well as in a special program with Bulgarian, Kurdish, Arabic, and Afghan songs and dances, prepared by the participating children and teenagers (many of them living in the asylum reception centres in Sofia). Over 100 people participated in this event that was unique in its kind for Sofia.

Strength, speed, and good hearts – the participants ran 1, 2.5 or 5 km and/or lifted weights in open urban spaces in Varna with both

challenges attracting significant interest. There were no restrictions for the participants in terms of gender, age, or social status. The event aimed to promote the values of sport and active lifestyle, motivating citizens to be more active and use opportunities provided by the surrounding urban environment. Another goal of the event was connected with fundraising for organizing different hard-to-reach sports activities for children – zip/trolley downhill, horseback riding, trekking, canoeing, etc. To motivate more people take part in this event, a draw for special prizes provided by the organizers (free training cards, free participation in similar events, etc.) was held. Over 200 people participated in the “Strength, speed, and good hearts” initiative.

100 faces of sport – these activities supported the “Sofia – European Capital of Sport 2018” initiative and were part of its official calendar of events. The name of the activity itself was wordplay with the Bulgarian words for “100 faces” (сто лица) and “capital” (столица) pronounced in a similar way. Those activities, carried throughout the summer season, provided free access to facilities for three types of sports (football, tennis, and table tennis) to pupils, students, youths from groups at risk of social exclusion, etc. Over 250 people participated, teaming and socializing while practicing actively a favourite sport. Also, a youth seminar on the relationship between sport and society was organized with main topics being social sport and interdisciplinary “faces” of sport. The seminar was aimed at people with interest in sport, active and healthy lifestyle, social activities and initiatives, and urban design as instruments for providing a better quality of life.

Karlovo spring – the events was planned and realised together with the local authorities and the local triathlon sport club. It was aimed at the general public, focusing predominantly on the age group 4-16 years old. It was attended by more than 90 participants – they were running and riding a bicycle in open urban spaces (in some of the central streets of Karlovo), trying to reach the finish line first (in their age group) and thus win many of the incentive awards.

RESULTS AND ACHIEVEMENTS

The described HEPNESS activities, combined with other initiatives of Footura immanent to its sporting profile and background, helped enormously to the progress of our work in the last 2 years and as a result we have achieved several important things:

- developing own framework and action plan as part of the theoretical and preparatory work in order to adapt in the best possible way the HEPNESS approach to our specific initiatives;

- widening the scope of our activities and promoting various types of sports that can be easily integrated in urban environment;
- applying good practices models in several localities and under different conditions;
- reaching new target groups and enhancing awareness of the diverse physical activity benefits;
- supporting sports and active lifestyle by providing a virtual map with all registered sports clubs, foundations, and organizations, a map of the cycling routes and their connection with the tourist routes in the nearby Vitosha mountain, walking routes in the parks and their connectivity;
- promoting successfully HEPNESS mission by receiving significant coverage of our activities when joining the official calendar of “Sofia – European Capital of Sport 2018”;
- creating stable horizontal and vertical links in a widening network comprised of municipalities and institutions, the “Sofia – European Capital of Sport 2018” foundation, a number of organizations and people working with youths, and other stakeholders and stockholders.

The above mentioned results from our activities relate to the observed direct impact on participants and spectators, as well as to potential indirect benefits for the citizens that could be generated over time. One of the most feasible direct results of our pilot actions is connected with the health benefits, especially considering youths (our main target group). Any physical activity in open space, with suitable intensity, has positive effects, while the regular practice of outdoor sport activities also builds up many valuable habits, and the earlier one adopts them, the more likely he/she gains significant benefits. Therefore, the expected impacts from our pilot actions concern improving health, well-being, and quality of life for people from various social groups.

The orientation of our pilot actions towards different groups and strata of the population can be positive in time in terms of providing accessibility for all to sport and active lifestyles.

At present, in Bulgaria, the share of active participants in amateur sport is relatively small, especially within some at-risk groups such as people with disabilities or chronic health problems, minorities, migrants, people with low income and/or low education. In this respect, we consider that sport can also have educational discourse while dealing with important social phenomena like discrimination, intolerance, criminality, racism, aggression, harassment, and in a

wider context – fighting against smoking, alcoholism, drugs, and unhealthy nutrition.

Furthermore, we expect that by organizing our HEPNESS-based initiatives on a regular base, we can achieve significant results in some places and help strengthen the connection of the individuals with the community in which he/she lives. These people do not suffer from isolation and antisocial behaviour and are more involved in building social and communication networks and in volunteering. The type, content and geo-social context of our pilot actions show Footura’s general vision and ambition – using the favourable conditions provided by the HEPNESS project and the “Sofia – European Capital of Sport” initiative, we aim to build over our achievements and mainstream HEPNESS-based principles and activities in the future.

**STRATEGIES
FOR MAINSTREAM**

To ensure that the effects of our HEPNESS activities have a long-term character, we made sure to design all our activities linked to active lifestyles, active cities and communities to be feasible, practicable, socially inclusive, and easy to replicate and mainstream. Moreover, the achieved short-term positive results could become the basis for long-term policy decisions/actions at local and even national level. That is why our future strategy to mainstream HEPNESS vision is connected with developing the network of built partnerships during our pilot activities and widening it to engage other stakeholders – political authorities, non-governmental organizations, associations and clubs, etc.

The collective implementation of the objectives laid down in the HEPNESS concept may be a viable way to solve the significant problem of physical inactivity in Bulgaria and the resulting negative effects. Ultimately, each of the abovementioned actors must be involved in addressing these issues and stimulate the needed changes in thinking and behaviour at individual, family, community, and public level. This could be done through a wide-range interinstitutional programme involving the public, civil, and private sectors.

One of the first steps, which was an important part of Footura’s HEPNESS activities, is familiarizing the public authorities with the relevance of active living to areas such as planning, legislation, development, education, finance, etc. and therefore making them aware of the importance of well-thought-out and realistic investments in developing strategic documents, active living friendly infrastructure and environment, etc.

CONCLUSIONS To summarize, based on our HEPNESS experience and the pilot actions organized as part of the project, and complying with the traditional work and engagements of Footura in the field of sport and active living, our future efforts will be directed primarily at:

- drawing up of an action plan for post-HEPNESS dissemination and mainstream of active cities vision and concept, promotion of physical activity, urban sustainable development models, etc.;
- raising further public awareness, understanding, and attention to the benefits of active lifestyles and creating motivation for the widest possible range of people to get involved;
- a repetition of successfully applied models and good practices in an attempt to strengthen them and transfer the activities to other settlements (make future releases of the same events in the same locations, organize the same events in other locations, create similar urban sport activities with social and competitive orientation and wider participation by providing even more space and even more sports to practice);
- widening the HEPNESS network and institutional support in order to generate new models and concepts, adopt a common approach, and ensure long-term impact of all our activities to promote active cities and active lifestyle.



PILOT ACTIONS IN LJUBLJANA, SLOVENIA

OUT OF DOORS, OUT OF MIND: WEB APPLICATIONS OF FREE PUBLIC OUTDOOR RECREATIONAL AREAS IN LJUBLJANA

Jernej Tiran, Rok Ciglič, Aleš Smrekar

The main purpose of ZRC SAZU's pilot action was to create a web presentation of the free publicly accessible outdoor recreational areas in the City of Ljubljana. Some data on sports and recreational facilities and areas in the city does exist and some is publicly available, for example, on the official municipal web application, but it is incomplete and/or dispersed over several sources. Meetings with the relevant departments at the City of Ljubljana, which owns and manages these areas, therefore resulted in a reciprocal wish and need to create a comprehensive, straightforward and user-friendly web application.

Presenting information in map form, especially as an interactive web application, is a very powerful way of disseminating knowledge and decision-making. It features basic data about the location of a certain type of phenomenon (in our case recreation and sport facilities) and gives an overview of where certain points of interest are located and specifies their properties. Web map applications are an especially powerful category of web applications, because they include maps and enable users to move freely across selected regions and discover them. Some web map applications also offer different options for adding or removing specific layers in order to present specific content (e.g. layers with streets or points of interest).

In our project, we produced a set of two web applications **Out of doors, out of mind** (*Sprosti se na prostem!* in Slovene), a useful tool that serves as an informative platform with basic information about recreational possibilities in the City of Ljubljana. In accordance with the project purpose, as well as the scientific findings about the additional benefits and importance of recreation outdoors, especially in urban green spaces, we limited ourselves to public, outdoor, freely accessible areas, including various types of green urban spaces. The name of the applications was intentionally chosen, as it promotes outdoor physical activity through wordplay: the Slovene words "sprosti" and "prostem" are actually very similar in meaning, they rhyme and imply that spending time outdoors is an important part of recreation and relaxation.

In order to prepare such a web application, the project work process was divided into two main stages of development:

- data collection and editing, and the construction of the database;
- the construction of the web application and the data import into the web application.

METHODOLOGY
*DATA COLLECTION
AND THE
CONSTRUCTION
OF THE DATABASE*

In our case, most of the spatial data about the recreational areas and other relevant basic facilities was provided by the local authority (the City of Ljubljana) and its respective departments based on the signed bilateral collaboration agreement. The gathered data was available as different data layers. They were represented as points (e.g. location of a playground), lines (e.g. trails), and polygons (e.g. sports park). All these layers store information for each specific unit (e.g. playground) about its exact location and unique ID code. For the complete list of the data layers, see **Table 1**.

For some of the units, additional descriptive information (such as the name, categorization, etc.) was provided in a tabular form. We can merge such information with each unit according to the unit's unique ID. However, most of the layers did not have any detailed descriptions, so we manually entered the missing data, such as the basic properties, accessibility, suitability for certain group of users (e.g. kids, runners, bicyclists) and links to the detailed description (URL). The information was collected during the field and office work. Photographs were also taken at the site of each unit and added to the database. The final structure of the descriptive data includes several variables (columns); see **Table 2** for the complete list.

All the data layers were prepared with the ESRI ArcGIS Desktop and Microsoft Office Excel software. The final spatial data layers were prepared in a shape file format (.shp) and also feature the class format (located in a geodatabase). The final tabular data was prepared in the Excel format (.xlsx) and also as a table in a geodatabase.

*THE
CONSTRUCTION
OF THE WEB
APPLICATIONS
AND THE DATA
IMPORT*

Tabular data with the descriptions of each recreational unit was attached to the spatial data layers and exported as a new feature class. One point feature class with basic facilities (public toilet, bike-sharing station, drinking fountain) and three feature classes with recreational units were provided. The recreational units' data was grouped into points, lines and polygons. These files (feature classes) were then uploaded to the ESRI ArcGIS Online platform, which offers different options for data storage, manipulation and presentation.

The uploaded feature classes files became layers that can be added

Table 1: COMPLETE LIST OF DATASETS

Data layer	Type of data
Urban forests	Polygon
Parks	Polygon
Dog parks	Point
Playgrounds	Point
Playgrounds	Polygon
Sports facilities	Polygon
Elementary school playgrounds	Point
Walking trails	Line
Trim trails	Line
Outdoor sports facilities	Point
Water sports locations	Point
Cross-country skiing trails	Line
Cycling trails	Line
Drinking fountain	Point
Public toilets	Point
Bike-sharing station	Point

Table 2: A LIST OF VARIABLES (COLUMNS)

Variable	Description of the variable
ID code	Unique ID of the recreational unit
Ime (Unit name)	Name of the recreational unit
Opis (Description)	Short description of the recreational unit (up to 300 characters)
Hoja (Walking)	Suitability of the recreational unit for walking (marked as yes or no)
Tek (Running)	Suitability of the recreational unit for running (marked as yes or no)
Telovadba (Exercise)	Suitability of the recreational unit for exercising/street fitness (marked as yes or no)
Kolesarjenje (Bicycling)	Suitability of the recreational unit for bicycling (marked as yes or no)
Otroška igra (kids' play)	Suitability of the recreational unit for kids' play (marked as yes or no)
Igre z žogo (Ball games)	Suitability of the recreational unit for ball games (marked as yes or no)
Drugo (Other activities)	Suitability of the recreational unit for other activities (up to 100 characters)
Link	URL link to detailed description of the recreational unit
Dostopnost (Accessibility)	Accessibility of the recreational unit (providing opening hours and specific restrictions)
Photo link	URL location of the recreational unit's image
Avtor fotografije (Photographer)	Name of the photographer

to different web maps (e.g. for each recreational activity). Each web map can use a different set of feature layers, specific filters, symbology, pop-up window settings, etc. Web maps store and present different combinations of layers and can be incorporated into different web applications.

We created two web applications:

- *Out of doors, out of mind* story map application,
- *Out of doors, out of mind* – free public outdoor recreational areas web map application.

Each web application can be structured differently and can use different sets of widgets (e.g. measurement tool, printing tool).

The story map application offered by ESRI ArcGIS Online is a type of web application that offers different contents. Usually, it is structured as a presentation with numerous slides. Some of these slides can provide text and figures only, while others can present a web map or even another (embedded) web application.

A web map application is a type of web application that is focused on a straightforward overview of a certain region with spatial data. It is not structured as a presentation (with slides or pages) that the reader would follow, but it rather provides a web map with more advanced widgets for manipulating data presentation (e.g. turning layers on and off, filtering data, searching for the closest points).

RESULTS

STORY MAP APPLICATION

The story map applications can be prepared in several ways using different templates. Usually, they are structured so that they present certain contents as a classical presentation that is enriched with some images and simple predefined maps. In our case, 13 slides (pages) were included in the 'Out of doors, out of mind' story map application, which presents the contents in a visually attractive way through a story. The presentation includes additional information about a wide range of recreational and sports possibilities in Ljubljana, combined with scientific findings on the social, psychophysical and health benefits of spending one's free time being active outdoors, especially in the nature and urban green spaces. Besides the introductory slide, there are:

- four slides with images, texts and links (urban forests, parks, sport infrastructure, playgrounds);
- seven slides with simple maps, texts and links (areas for walking, running, outdoor fitness, cycling, children's play, ball games, other activities);

- one slide showing a map with all the recreational facilities combined. The last slide presents the map application, which can also be opened as a stand-alone application.

WEB MAP APPLICATION

The web map application of free public outdoor recreational areas offers a web map with all the recreation facilities available in the City of Ljubljana. The user can use several widgets, such as the legend, list of layers, filters (for activities), a selection of base maps and the search tool. All these widgets provide the opportunity to construct the most user-friendly map possible. For example, one can turn on only specific layers and change the base map. By clicking a certain recreational facility, a pop-up window appears and provides information about the name, short description, possible activities, photo and a link to further information.

Both web applications are freely available at these URLs:

- *Out of doors, out of mind* story map application: <https://rekreacija-lj.zrc-sazu.si>
- *Out of doors, out of mind*: web map application of free public outdoor recreational areas: <https://rekreacija-lj-zemljevid.zrc-sazu.si>

Since both web applications are provided in a responsive design, users can also view them on mobile phones and tablets.

TARGET GROUPS OF USERS

The pilot action is primarily intended for:

- citizens and visitors who want a comprehensive information hub in one place about recreational options;
- municipal authorities, which have gained a comprehensive information hub on the spatial dispersion of recreational areas across the city.

The web map application can also be useful to researchers and spatial planners for further research and the foundation for shaping policies and strategies.

EXPECTED IMPACTS AND BENEFITS

In the short-term, the web map application will mostly benefit city officials and spatial planners. The map clearly illustrates, for example, areas with underdeveloped options for public outdoor recreation that require improvement. In addition, various municipal services will be able to integrate the web map and data into their own maps and

databases. In the medium and long-term, the web map is projected to encourage citizens and visitors to spend time doing sport activities outdoors more frequently. It can also serve as a tool for researchers and be used as the foundation for further research.

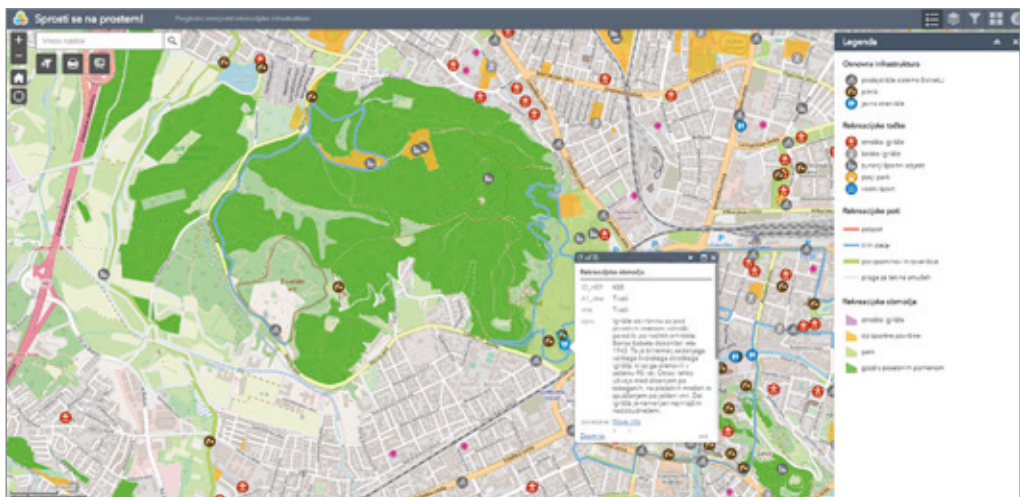
STRATEGY TO MAINSTREAM THE PILOT ACTION The promotion of the web map application was also a part of the pilot action, because it was executed using story mapping, which presents the map as a story in a visually attractive way. Information on the creation of the web map application was spread through various communication channels (websites, blogs, social networks) of the authors and the municipality. A public presentation of both applications was organized in December 2018. The newly created database is projected to be integrated into the existing municipal web map, so it can be updated and evolved by municipal services even after the project has been concluded.

ACKNOWLEDGEMENT *This study was partially supported by the Republic of Slovenia, Ministry of Education, Science and Sports, Slovenian Research Agency as a part of the Research programme Geography of Slovenia (P6-0101).*

Image 1: INTRODUCTORY SLIDE OF THE STORY MAP APPLICATION



Image 2: A WEB MAP APPLICATION WITH THE RECREATION FACILITIES AND POP-UP WINDOW





PILOT ACTIONS IN VICENZA, ITALY

Donata Gaspari, Diego Fontana, Giovanna Lodi

The scope of Vicenza's Pilot Action is to promote the participation of citizens in physical and sports activities through the enhancement of cultural heritage, natural assets and ecosystem services of Vicenza historical centre and urban outskirts.

Municipality of Vicenza involved public and private local stakeholders, establishing the Hepness Vicenza's Focus Group, for enhancing the opportunity to experience the city and its cultural and natural heritage as an *open-air gym*.

To achieve the goal of participation of citizen in the active life of the city, Vicenza's commitment concerns:

- involving public and private local stakeholders;
- establishing the Hepness Vicenza's Focus Group;
- carrying out citizen information events.

REALIZATION PHASES In particular, Vicenza planned to have the following phases approach to the pilot action, involving Hepness Vicenza's Focus Group:

1. *To map existing sites and facilities* devoted to physical outdoors activities, also areas which would not ordinarily be used for sport or physical activity. Citizens can access the information through concerning "Green public areas" and "Sport and education facilities" Vicenza's website ([http://sit.comune.vicenza.it/SitVI/vicenza/Aree verdi pubbliche – Sport e Istruzione](http://sit.comune.vicenza.it/SitVI/vicenza/Aree_verdi_pubbliche_Sport_e_Istruzione)).
2. *To collect the local Good Practices* regarding promotion of physical activities from different point of view (life-style, health, environment, relationships, art and culture, tourism) by the Vicenza's Task Force. Citizens can access the good practices though Hepness website (<http://www.hepness.eu/portfolio/vicenza>) and special brochure in Italian language *Vicenza, Città Hepness, Palestra a cielo aperto*.
3. *To realize special Hepness Itineraries* "City Discovery" (8 km) and "Nature Discovery" (25 km), drawing inspiration from the good practices of other partners. Citizens can access the itineraries though Map in Italian language and brochure *Vicenza Palestra a Cielo Aperto*. Tourists can access the itineraries through Map in English language; the itineraries are available also in the Municipality of Vicenza's Official App *CityWay*.

The consequent promotional and the demonstratives activities have been developed with the purpose to disseminate and mainstream Hepness scope, and they have been addressed to people of all ages: locals, tourists, visitors and everyone who would like to practice physical activities and enjoy the city of Vicenza.

METHODOLOGY AND TOOLS

Through mapping sites and facilities devoted to physical outdoors activities, using the knowledge derived from the collection of good practices and thanks to the involvement of the Vicenza's Task Force, the realization of the Hepness Ititneraries *City and Nature Discovery* has proposed new ways of living the city spaces, rediscovering the city, its natural and cultural heritage, and finding new places to practice physical activity as an open-air gym.

Tools adopted are:

- Municipality of Vicenza's Map concerning green public areas and Sport and education facilities;
- Task Force workshops and multiplier events in the sport fields: Vicenza moved to reach targets where they practice sport (events and parks);
- communication and promotion through different channels: newspapers, social and web;
- the direct involvement of territorial associations, Vicenza's Task Force, has been fundamental and strategic at the same time.

IMPACTS AND BENEFITS

We hope that the pilot actions will encourage citizens and groups to reconsider their approach to using their immediate environment to keep active and healthy.

In the short term the Vicenza's Task Force will continue with the promotion and organization of events and activities such as those inspired by the Hepness objectives.

In the longer term the educational aspect of Hepness – particularly the best practice examples and awareness raising – will lead to an increase in practice physical activities in our municipality.

The impacts and benefits of the actions are recognizable in the two main areas:

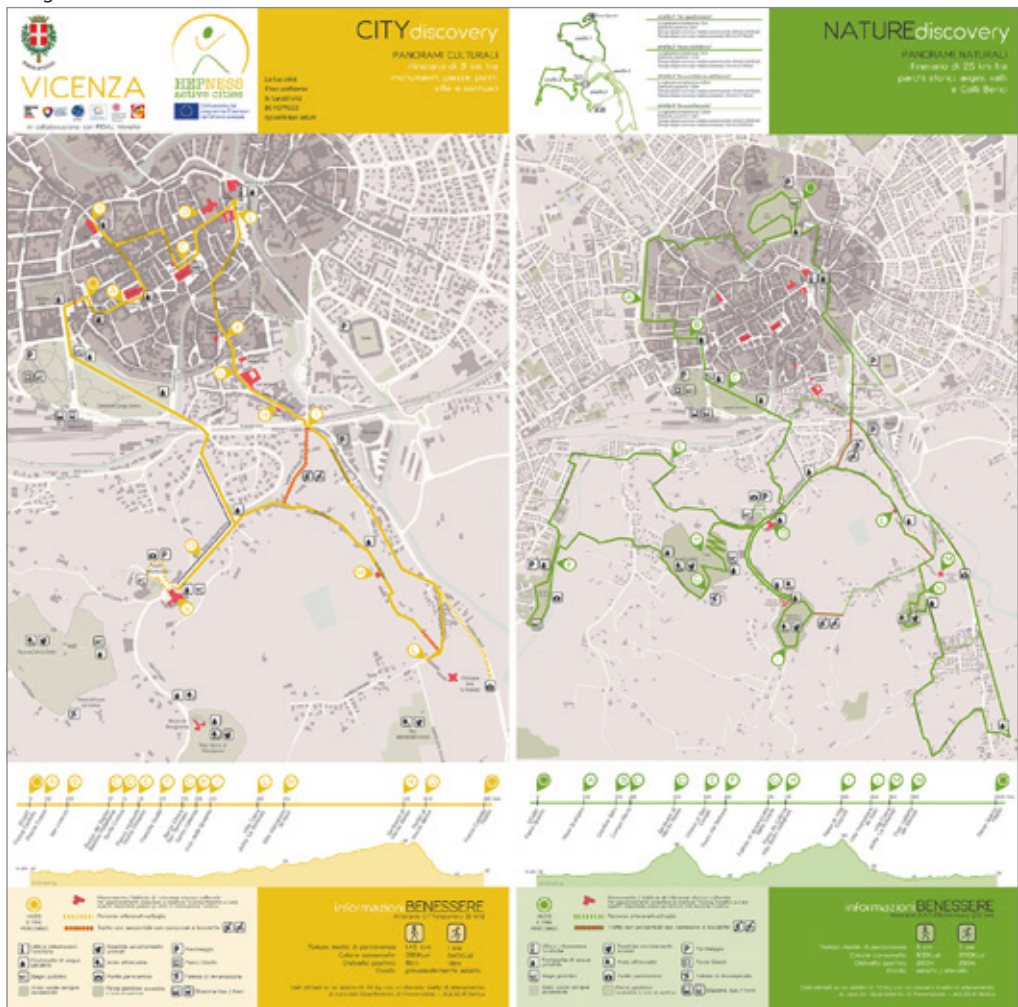
- increasing public awareness of the importance of physical activities and fitness by using public spaces that means the promotion of healthy lifestyle of citizens;
- promotion and enhancement of cultural and natural heritage that means better understanding of the territory for a long term

sustainable living; in particular, the use of urban areas means taking possession of the public places of the city means knowing it better, experiencing it more, and do not giving space to the degradation. Parks, squares, streets acquire a more important social value if they become a territory for sharing citizens' favourite activities.

STRATEGIES FOR MAINSTREAM

The Municipality of Vicenza will use the Task Force to carry forward the principles and recommendations of the Hepness project. The creation of mapping and itineraries can become a model that can be capitalized, improved in a more smart tool and then exported to other urban realities. The map and itineraries can facilitate the active use of urban spaces by the citizens.

Image: MAPS OF THE HEPNESS ITINERARIES “CITY AND NATURE DISCOVERY”





PILOT ACTIONS IN ARMAGH, BAINBRIDGE, AND CRAIGAVON, UNITED KINGDOM

Martin Towe

This paper is based on a study which has been specially compiled by the University of Sheffield for the Hepness project. The study is prepared by Prof. Robert Copeland, Dr. Anna Myers and Dr. Simon Nichols on behalf of the NCSEM Sheffield and the Centre for Sport and Exercise Science at Sheffield Hallam University.

It is available on the Hepness website at the address: www.hepness.eu/roadmap/perspective.

Armagh City, Banbridge and Craigavon Borough Council has a wealth of experience in the planning, implementation, delivery and evaluation of a wide range of sports and physical activities – both in an organised environment and in an ad hoc manner by citizens, within various settings including streets, neighbourhoods, public parks, open spaces and urban facilities. Working with those least likely to participate in sport and physical activity, most recently through the delivery of the Active Communities Programme, we successfully engaged in excess of 34,000 unique participants.

For our pilot action we were particularly interested in encouraging citizens to look beyond our wealth of sporting facilities and open spaces, and our established physical activity interventions, towards more innovative ways of providing opportunities to become more active.

THE NEED FOR INNOVATION Innovation refers to the programme defining new and unexpressed needs of users, anticipating new services, new forms of output, new types/mixes of management and new scopes of action in relation to a previous reality (European Commission – European Guide of Healthy PA and Sports Programmes)

If we make a conscious effort to innovate and evolve, both in terms of the activity and the space in which the activity is carried out, we will help to avoid some of the main barriers to participation such as boredom and over familiarity. This is particularly important when working with children and teenagers as they are prone to be fickle and easily bored with traditional activities and familiar spaces.

In addition, there is a need to use new technology to ensure that Citizens are aware of the opportunities to be active which exist. There has been significant progress in the development of mobile applications which allow users to easily access the information with many being available on a number of platforms. However, there is a need to compile the base information and ensure it remains relevant.

**PILOT
ACTIVITIES**

In order to explore this concept, we made a call for groups and clubs across the Municipality to make a bid for funding in order to organise physical activity sessions in areas which would not normally be associated with sport or physical activity. As an aside to this, we also considered applications which either introduced a new activity or a novel approach to encouraging citizens to be more active.

Sports Week – 45 kids week 24 adults x 5 sessions

A collection of activities organised over 5 days designed to cater for all members of the family.

Couch to 5K around the church – 105 participants x 18 sessions

A physical activity engagement program aimed at the sedentary but using the grounds of a local church for participants to walk around and progress to running.

Football Cage on the Town Plaza – 50 participants

Erecting a football cage in the middle of Portadown Town Centre on a Saturday afternoon and encouraging children and parents to take a break from shopping and participate in activities.

Love Parks Week – 148 participants throughout week

Annual celebration of our cities fantastic green spaces, encouraging children to explore the outdoors and be physically active without participating in an organised sport. Activities included den building, traditional play and little green fingers biodiversity events.

Sensory Walk – 182 participants

A family event which allows disabled and able bodied people to experience a walk which engages all of the senses. Participants made their way around a 2k route filled with sensory stations such as touch, taste, sound, bubbles and colour.

Non-Fixed Play Sessions – 71 Children & 18 adults over 4 sessions

Play sessions delivered to communities without a fixed play asset. Parents and children taught the importance of play, new play ideas, and how play contributes to a healthy lifestyle.

MONITORING The methods by which physical activity can be monitored have developed with the increased need to evaluate interventions. Much of the Civic and Community Planning currently undertaken by Municipalities relies on high volumes of accurate data and there are three separate methods of collecting this information:

1. Subjective physical activity measurement tools

- Subjective self-report measures, such as questionnaires, diaries, surveys and interviews.

2. Direct Observation

- Where the physical activity is observed and recorded.

3. Objective physical activity measurement tools

- Movement sensors
 - a) Pedometers: a portable device which counts the number of steps an individual takes by detecting movement - usually worn on the hip;
 - b) Accelerometers and inclinometers: like pedometers and accelerometers they are typically worn on the hip. However, unlike pedometers, accelerometers measure acceleration of the body;
 - c) Multi-sensors: they combine accelerometer technology and sensors that measure physiological outcomes associated with physical exertion;
 - d) Global positioning system (GPS): it provides information on the location, direction, and speed of the individual carrying a GPS receiver (e.g. smart phone, sports watch).

4. Smartphone Technology

- Using Technology built in to smartphones to provide data to mobile applications.

5. Biological measures

- Heart rate monitors can be used to predict physical activity based on the linear relationship between heart rate and energy expenditure
- Doubly labelled water and indirect calorimetry is a very accurate method of determining energy expenditure. It involves ingesting a non-radioactive isotope.

Table 1, on the following pages, provides links to a number of PA measurement toolkits along with a brief description of each.

Table 1: PHYSICAL ACTIVITY MEASUREMENT TOOLKITS

NAME	YEAR	ORGANISATION	LINK	TYPE	NOTES / DESCRIPTION
Evaluation Framework	2018	Sport England	https://evaluationframework.sportengland.org/	Website and embedded PDFs	This resource aims to help Sport England colleagues and partners to evaluate funding streams and projects effectively and get maximum value from measurement and evaluation (M&E)
Diet, Anthropometry and Physical Activity (DAPA) Measurement Toolkit	NA	MRC - University of Cambridge	http://dapa-toolkit.mrc.ac.uk/	Website	Free web-based resource to assist researchers and public health or public end-users to identify methods for the assessment of diet, anthropometry and PA
MRC Population Health Sciences Measurement Toolkit	NA	MRC - University of Cambridge	www.mrc-epid.cam.ac.uk/research/resources/	Website	MRC Population Health Sciences Measurement Toolkit is currently under review and will replace the DAPA toolkit
Standard Evaluation Framework for physical activity interventions	2012	National Obesity Observatory	www.getirelandactive.ie/Professionals/Built%20Environment/Resources/Evaluating-Physical-Activity-.pdf	PDF	<ol style="list-style-type: none"> 1. How to identify appropriate physical activity outcomes for evaluating different types of intervention 2. How to define suitable measures for different types of physical activity outcome 3. How to approach the challenges of assessing and measuring physical activity and energy expenditure.
A Practical Guide to Measuring Physical Activity	2015	Journal Article	www.ncbi.nlm.nih.gov/pmc/articles/PMC3915355/	Journal Article	This commentary summarises the main methods of measuring PA as well as providing examples of their uses in research trials
Physical Activity Evaluation Handbook	2002	Centres for Disease Control and Prevention	www.cdc.gov/nccdphp/dnpa/physical/health_professionals/interventions/handbook.pdf	PDF	The handbook provides tools to evaluate PA programmes and aims to help providers demonstrate programme outcomes and continuously improve provision

Measurement of Physical Activity and Sedentary Behaviour	NA	Alberta Centre for Active Living	www.centre4activeliving.ca/services/measurement-physical-activity/	Website	The website summarises information that is relevant to the measurement of PA and sedentary behaviour. This includes definitions, guidelines, considerations when measuring PA and sedentary behaviour and examples of measurement tools
Physical Activity and Sport Evaluation Toolkit	2018	University of Derby	http://derby.openrepository.co.uk/derby/handle/10545/622421	Spreadsheet	The evaluation toolkit was developed through a collaboration between the East Midlands County Sports Partnership and the University of Derby. The purpose of the toolkit is to support the identification of tools and methods to monitor and evaluate the effectiveness of PA interventions
Measures Registry User Guide: Individual Physical Activity	2017	National Collaborative Childhood Obesity Research	http://nccorrgms.wengine.com/tools-mruserguides/wp-content/uploads/sites/2/2017/NCCOR_MR_User_Guide_Individual_PA-FINAL.pdf	PDF	The guide focuses on enhancing use of measures and tools to assess PA. The guide covers a variety of issues relating to PA measurement including the complexities of measuring PA, terminology and selecting a measurement tool
Measuring diet and physical activity in weight management interventions	2011	National Obesity Observatory	www.google.com/search?ei=_BrW9ieG-9C2aZP5mpAK&q=measuring+diet+and+physical+activity+in+weight+management+interventions&oq=measuring+diet+and+physical+activity+in+weight+management+interventions&gs	PDF	A shortlist of practical and validated questionnaires for the assessing PA and diet, to support practitioners to evaluate weight management interventions. The paper reviews the scientific literature and highlights the strengths and limitations of each questionnaire
Move More, Sit Less: A toolkit for evaluating physical activity programs in your workplace	2017	Heart Foundation	www.heartfoundation.org.au/images/uploads/publications/4729_HF_-_Move_More_Sit_Less_toolkit_FA_Web.pdf	PDF	The toolkit builds on the existing Healthy Workplace Guide: Ten steps to implement a workplace health program. The toolkit is designed to help workplaces evaluate PA interventions

Source: Robert Copeland, Dr Anna Myers and Dr Simon Nichols, *Rapid Review of Physical Activity Measurement and Surveillance Tools and Toolkits*, Sheffield Hallam University – Centre for Sport and Exercise Science, November 2018



PILOT ACTIONS IN BONN, GERMANY

Lutz Udally

The understanding and behavioural patterns of physical activity and sport has significantly changed in the past decades. In order to address the changed demands of public space and sports facilities the city of Bonn initiated an evaluation and planning process developing an “sports development plan” (SDP). This process focusses on the given sport infrastructure, its current state and the needs for the next 15 Years. Since sport in Germany is traditionally organized through sports clubs and the sport facilities are mainly designed for club sports, HEPNESS brings a wider understanding of sport and physical activities and informal sport in public space to that SDP.

The administration has done a representative scientific survey, sending extensive questionnaires to 5000 households, to key actors and all sports clubs. In addition, there has been an online survey on the municipal participation platform, asking about needs and capacities of public sports facilities and potential public spaces in order to empower and enable people to be active. Identified public space for activities will be mapped and added to the online registry map of sport facilities.

MAIN TASKS AND ACTIVITIES

The specific goals of HEPNESS activities are following three main tasks: first to do a thorough needs and capacities assessment for sports and physical activities and the respected infrastructure, second to develop strategic goals based on the results and third to promote and develop public space for physical activity.

The **first task** was the thorough assessment of the physical activities and the expectations of citizens on public space and sports infrastructure and a thorough assessment of sports facilities and public space in order to have a solid information base for future planning. Based on the assessment strategic goals for sport and physical activities were developed and will be approved by council. In those goals the HEPNESS perspective has added new concepts of understanding and integration of physical activity in city planning and municipal duties. The informal sport and physical activities and the concept of sport in public space, for example, are now complementing the formal sports and sports club infrastructure in the strategic development perspective. Further has the concept and

understanding of sport planning transformed into a larger and more integrated aspect of the overall city planning.

An external expert has been assigned in order to do the assessment and the sports development plan. The City Administration has assigned three employees in order to coordinate and support the two years process and ensure that the HEPNESS perspective will be integrated in the process.

A taskforce has been installed including representatives of the following departments and organisations gathered depending on the topic: facility management; school department; department for citizen participation; fundraising/project department; department city planning; head of sports and culture; department for children; youth and family; scientific consultancy for sport (private); head of city sports association (civil society); department for green infrastructure; head of department for sports and department of social affairs and housing. This taskforce has met five times in order to discuss, prepare and coordinate the development of the strategic goals and the future action plan.

ACTIVITIES The **second task** was and will be to promote and develop public space for physical activities.

As first physical activities in public space the city promoted *Sport im park* a program implemented throughout the entire summer offering several trainings in parks on every day of the week, in several parts of the city, open for everybody and free of charge.

Another activity is the *Spielmobil*, a truck equipped with all kinds of toys and sports equipment to motivate children and youth to be physically active and enjoy public space. The Spielmobil sets up shop at afternoons and on weekends in different parts of town circulating frequently.

The existing pedestrian and *cycling paths* are continuously improved and marked in order to give bicycles priority in more and more streets and in order improve the connections of the bicycle lane network to promote and facilitate cycling paths as an attractive alternative to other transportation and a way to be active.

The most recent and also most important redesign of public space is the *new skate park*. The skatepark has been erected on the area of a former traffic education school. The space was out of use and a closed area. The skate park is now open for everybody and run and maintained by a local skate club.

The development and redesign of a sports field and small park in the inner city is one of the biggest projects in process in city planning related to public space in the city of Bonn. The *Reuterpark* will be

completely redesigned into a “place for all”. The concept has been developed by citizen initiatives in open workshops and in cooperation with a landscape architect. The aim is to offer space and facilities for a great variety of physical activities and offer space for social interaction and relaxation in an inclusive way.

The **third task** of the HEPNESS activities is mapping sports facilities and public space for physical activities and sport. Therefore, public spaces have been and will be identified and their data sets have collected. This data was and will be integrated in the existing data about the green infrastructure and sport facilities in order to be able to show an as complete as possible picture of the sport infrastructure and opportunities to be active as possible. Based on this information a website has been set up to complement the existing geo-data system showing public space for physical activity.

**TARGET GROUP,
SURVEY AND
IMPACT**

The main target group are all people living or staying in Bonn. The aim is to increase visibility and promote and enable activities in public space and improve the necessary infrastructure. The target groups related to planning and implementation are all affected and relevant internal and external stakeholders in the process of Bonn as an active and healthy city.

The survey and assessment has been done in a transparent process, approved by City Council. The consultant is a professor of sports science and followed a scientific participatory approach, that includes citizens and local key actors in sport and physical activity. 5.000 questionnaires have been sent to private Households, 1.278 filled and send back. 97 Clubs filled questionnaires representing 51.000 members and an online survey on Bonn’s participation platform received almost 500 feedbacks, comments, and answers. The installed HEPNESS task force considered the results of the survey and shaped the sports development plan and strategic goals due to their fields of responsibility and competence. The entire cooperative process leads to a final report and the strategic goals acknowledged by council organs and will be approved by council in its final version in 2019.

The expected impact are the acknowledgment of a wider and connected understanding of sport and physical activity, an improved cross sector cooperation within the internal and external stakeholders in physical activity related processes, an concrete action plan promoting sport and physical activity in public space and improving the relevant infrastructure and integrate social and health benefits into the planning processes.



PILOT ACTIONS IN PADUA METROPOLITAN AREA, ITALY

Leon Corduff

THE HEPNESS PROJECT The aim of the HEPNESS Project was to establish a European network of Municipalities, research groups and sports organizations that could develop and enhance cultural and natural assets and ecosystems in order to promote a more active lifestyle.

The idea was to use the city and its resources (parks, squares, green areas, streets, rivers, lakes, beaches etc.) as a setting for an innovative holistic approach to encourage outdoor activities and therefore provide several responses to current health, socio-economic and environmental challenges.

The process of integrating physical activities into people's daily lives is a creative process, where cities can enhance already existing resources, before building new structures specifically designed for sporting activities. Various city departments, tourism organizations, health and educational structures and close collaboration with the private sector particularly with sports associations is fundamental in order to be successful.

The HEPNESS Perspective and the Framework of practices was developed with the purpose of inspiring numerous cities to implement health-sport programs, and enhancing recreational ecosystem services for an active lifestyle.

The Perspective is a conceptual outline which highlights several dynamic ecosystems factors and their complex interactions for outdoor physical activities and healthy city development.

The Framework is a practical tool, bringing together researches, knowledge and good practices, supporting cities to design health and sport programs to maximize the level of outdoor physical activities in nature.

PILOT ACTIONS The main aim of the HEPNESS pilot scheme was to map places for outdoors physical activities focusing on ecosystems interrelated benefits, and implementing promotional and practical experimental programs.

They were developed in order to identify and map places (Atlas) for outdoors physical activities (in a sport, health and tourism perspective) focusing on the interrelation between cities and

ecosystem services, to foster collaboration among public and private organizations (sport, education, health, tourism, parks, etc.) and to establish new public and private partnership to ensure the long term durability of the programs.

The aim of the USMA Pilot Action is to promote the use of public spaces, parks, squares and streets of the urban environment involving several local sports associations, public authorities and the development of HEPA events and experiences.

USMA has built up a close collaboration between associations, administration and local people in the management and in the way of living the city and its public spaces

USMA launched a sort of social campaign to map places where people practice sports and physical activities, thus to create a favourite sporting place map (**#sportplacebook**), created with direct reports from users, as an important tool for knowledge and sharing of urban places.

The consequent promotional and the demonstratives activities were developed with the dual purpose of creating the shared map and to mainstream HEPNESS aims.

The specific goal was to create synergies between the various subjects managing and living urban public spaces, with the aim of promoting a more active and healthy lifestyle.

Citizens can thus find opportunities to share the places and activities they prefer, contributing to knowledge of their favourite sporting place to be actively experienced.

In order to achieve this goal it was fundamental:

- to involve associations and volunteers;
- to carry out citizen information campaigns (through newspapers, social media and web);
- to involve families, through activities for younger people, sensitizing them towards the themes of health and a healthier lifestyle.

Target groups are categorized on the basis of specific activities of the USMA pilot action plan:

- The campaign to share favourite places to practice sport and AP involved all sports people, of course the most active in sharing information are teenagers and young adults;
- The promotional activities organized to disseminate hepness project and to stimulate the sharing of places addressed in particular all aged runners;

- The demonstrative activities in a specific natural and cultural ecosystem in the urban environment focused particularly on young people, kids and their families, but all citizens were invited to take part at the promoted initiatives.

METHODOLOGY AND TOOLS Methodology is based on three dimensions:

- Call to action for Sharing;
- Active involvement of stakeholders in the extended urban context;
- Holistic integration of pilot action steps: Each event becomes itself a “link in the chain” to share the knowledge of places and promote HEPA in the urban environment.

Tools adopted are:

- Open source Map that can be capitalized in the near future and or evolved into a specific shared app;
- Task Force Workshop and Living Labs in the sport fields, we moved to reach targets where they practice sport (events and parks);
- Communication and promotion through diverse channels: newspapers, social media and web, but also word of mouth;
- The direct involvement of territorial associations was fundamental and strategic at the same time.

The impacts and benefits of the actions are recognizable in these two main areas:

- health: increasing outdoor physical activities, in different age groups, contributes significantly to the health of people; a healthier lifestyle helps fight the most common diseases and improves life expectancy;
- use of urban areas: taking possession of the public places of the city means knowing it better, experiencing it more, and combatting degradation. Parks, squares, streets acquire a more important social value if they become a territory for sharing citizens’ favourite activities.

Furthermore, USMA developed the pilot action plan in the perspective of arranging the hepness mainstream strategy. In this context the USMA pilot action supported the elaboration of a cutting-edge protocol defined to help cities to include sport and physical activities dimensions in urban policies, to adopt a human centred approach to city design and management for the health of the city environment and people.

The pilot actions developed by USMA and the hepness partners are also functional to arranging and promoting the HEPENESS Memorandum for Understanding.

STRATEGY TO MAINSTREAM THE PILOT ACTIONS The creation of a favourite sporting place map (the sportplacebook) can become a model that can be capitalized, improved in a more smart tool and then exported to other realities.

The sportplacebook can facilitate the active use of urban spaces by the citizens; can provide public authorities with information on citizens preferred places for PA and can stimulate local municipalities to understand reasons for use or non use of both parks and urban open spaces by citizens: which could be for reasons of security, quality of landscape, air quality, accessibility and so on.

The events and activities that are organized in the so-called urban spaces on the one hand are important to increase citizens PA level and on the other hand can be conceived as living labs where researchers, sport associations and municipalities can directly reach sporting practitioners and stimulate the sharing of PA habits and preferred places.

USMA INITIATIVES IN THE FRAMEWORK OF THE HEPNESS PROJECT *Vivicittà* – On April 15, 2018 VIVICITTÀ was held simultaneously in 48 Italian cities (including Padua) and 12 European cities. This is a running event which aims to bring citizens closer to the places where they live by running, regaining urban spaces.

USMA was there, we presented Hepness project and we invited all the people to join us in our venue, to vote their favourite sport place in the urban area, in order to increase the map and disseminate the aim of the project.

Whoever came to USMA to vote was given a t-shirt as a gift! And on the day of the annual USMA festival (April 24th), people started voting.

Padua Marathon – On April 22, 2018 USMA participated in the Padua Marathon. It was a great opportunity to increase the knowledge of the project and to live the places of the city in an active and healthy way. The people involved took advantage of the sporting event and experienced the places of sport and the aims of the Hepness project.

The Festival of Associations – On May 2018 promoted in the Festival of Associations that took place in the Park of an ancient Villa in Selvazzano. The event was organized in one of the most voted places of our favourite sporting places map, and the Municipality took charge of the event organization, creating an active collaboration

with the associations and the territory, as the Hepness project hoped. During the event all the associations presented their activities and the sport associations used the area of the park for sport demonstrations: that was a great opportunity for the city to involve children, letting them experience sport as a moment of aggregation and fun.

USMA also took the opportunity to collect more votes on the favourite sporting places of the urban area.

In this way USMA was able to promote and spread the message of HEPNESS about the use of the cultural and natural resources of our cities in a perspective of a healthy and active lifestyle.

Vivi i parchi 2018 – Together with other 5 associations, USMA promoted the *Vivi i parchi 2018* initiative.

For the whole month of July all the parks of the City of Selvazzano were animated by sports activities, free for all people.

The activities took place between June and July and included the following activities volleyball, yoga children and family, Tai Chi, paleorun, fencing, zen walk, yoga do-in, athletics and football.

It was a wonderful occasion to promote the ideas behind the HEPNESS project and was a great success.



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EDITORS AND AUTHORS

RAFFAELLA LIOCE, *Hepness Project Designer and Scientific Coordinator*

GIOVANNA MONSUTTI, *Hepness Communication Manager*

JAN VAN DER BORG, *Coordinator of Ca' Foscari Team*

DARIO BERTOCCHI, *Ca' Foscari University of Venice, Italy*

NICOLA CAMATTI, *Ca' Foscari University of Venice, Italy*

ROK CIGLIČ, *Research Centre of the Slovenian Academy of Sciences and Arts, Anton Melik Geographical Institute (ZRC SAZU), Slovenia*

LEON CORDUFF, *Maria Ausiliatrice Sports Union (USMA), Italy*

HRISTO DOKOV, *National Movement Union for Development of Sport and Sports Culture (Footura)*

CAMILLA FERRI, *Ca' Foscari University of Venice, Italy*

DIEGO FONTANA, *Municipality of Vicenza, Italy*

DONATA GASPARI, *Hepness Project Manager, Municipality of Vicenza, Italy*

GIOVANNA LODI, *Italian Athletics Federation, Veneto Regional Committee*

EMILIYAN METODIEV, *National Movement Union for Development of Sport and Sports Culture (Footura)*

KATARINA POLAJNAR HORVAT, *Research Centre of the Slovenian Academy of Sciences and Arts, Anton Melik Geographical Institute (ZRC SAZU), Slovenia*

ALEŠ SMREKAR, *Research Centre of the Slovenian Academy of Sciences and Arts, Anton Melik Geographical Institute (ZRC SAZU), Slovenia*

IVAYLO STAMENKOV, *National Movement Union for Development of Sport and Sports Culture (Footura)*

JERNEJ TIRAN, *Research Centre of the Slovenian Academy of Sciences and Arts, Anton Melik Geographical Institute (ZRC SAZU), Slovenia*

MARTIN TOWE, *Armagh City, Banbridge & Craigavon Borough Council, United Kingdom*

LUTZ UDALLY, *City of Bonn, Germany*



*Municipality of
Vicenza, ITALY*

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*City of Bonn,
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*Armagh City,
Banbridge & Craigavon
Borough Council,
UNITED KINGDOM*



*Research Centre of the
Slovenian Academy of
Science and Arts, Anton
Melik Geographical
Institute, SLOVENIA*



*National Movement
Union for development
of sport and Sports
Culture - Footura,
BULGARIA*



*Università
Ca'Foscari
Venezia*

*Ca' Foscari University
of Venice, Department
of Economics, ITALY*



*Maria Ausiliatrice
Sports Union - Usma,
ITALY*

HEALTHY ENVIRONMENT PROMOTION AND ECOSYSTEM SERVICES SUPPORT FOR ACTIVE CITIES DEVELOPMENT

HEPNESS establishes a transnational cooperation where cities, research and sport organizations advance new synergies to develop health and sport cities, enhancing cultural and natural assets and ecosystems services for the promotion of an active lifestyle. Cities play a key role for enabling population to become more active.