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The Health and Social Benefits of Nature and Biodiversity Protection

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Workshop Summary

The Institute for European Environmental Policy (IEEP)



Committee of the Regions



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The Health and Social Benefits of Nature and Biodiversity Protection

This document summarises the presentations and discussions from the stakeholder workshop: “The Health and Social Benefits of Nature and Biodiversity Protection”. The event, which took place on the 27th and 28th January 2016 in Brussels, brought together around 100 people from a range of backgrounds to explore how to better realise the health and social benefits of nature, both from a scientific and policy perspective, as well as looking at actual cases and initiatives from across Europe. The Committee of the Regions hosted and contributed to the event, which was based on a study for the European Commission that was carried out by the Institute for European Environmental Policy and partners: CEP, ESP, ICLEI, Luke, Milieu and WWF.

Health and social challenges across Europe and the role of nature

European societies are increasingly urbanised and nature appears distant from daily living and working environments. At the same time, physical health issues related to sedentary lifestyles are on the rise, as are mental health problems like depression. Moreover, social cohesion is at stake as austerity measures reduce public budgets in many European countries and unemployment remains high. These challenges are profound and widespread and need to be addressed by a range of solutions; some preventative and others more treatment or cure based.

Scientific research is increasingly demonstrating the importance of nature for human health and social cohesion. While only one of many solutions, natural green spaces can provide important contributions to improving urban living conditions by cooling cities, helping to generate airflows to disperse pollutants, and mitigating noise. Natural surroundings and using these for activities can contribute to mental and physical health. Green spaces therefore provide multiple benefits to children, adults and senior citizens. They are also important for bringing communities together and creating a sense of identity, particularly in socially deprived areas.

Workshop aims and questions explored

While the evidence base is getting stronger, translating these findings into practical policies remains a challenge and there is a need for a diverse set of policymakers and practitioners from different disciplines to share their experiences. The workshop participants had a diverse set of practical experiences from environment, public health and social initiatives. Over the two days, participants discussed the scientific and case evidence on the role of nature for delivering health benefits through improving urban microclimate and air quality, mitigating noise or offering opportunities for recreation, volunteering and employment. The workshop also discussed the latest scientific evidence on the role of nature for supporting overall wellbeing and mental and physical health. Based on this evidence and the experience of existing and successful initiatives in Europe, the participants discussed options for a road map to better realise the potential for health-social-nature linkages.

Twenty case examples across Europe

The workshop featured 20 cases that illustrate the breadth of initiatives to use nature-based solutions to address health and social challenges in EU Member States. In many cases, the initiatives make use of protected areas in the Natura 2000 network. The cases vary by location (urban, peri-urban, and rural), drivers or pioneers of the work (e.g. local government, regions, national and transnational projects, private sector, civil society groups) and scale (initiatives at city level, national programmes, and international approaches).

Case examples across Europe

Country	Case	Description	Natura 2000/GI
Belgium	Hoge Kempen National Park	Hoge Kempen National Park is Belgium's only national park. It contributes to the social cohesion and regeneration of a former coal-mining region that was at risk of economic decline.	Natura 2000
Bulgaria	Zmeeva Dupka Eco-Trail	The construction of an eco-trail in the Natura 2000 site Zmeeva Dupka cave has helped different social groups to discover nature and develop a healthier lifestyle while deterring illegal and exploitative nature use.	Natura 2000
Czech Republic	Chrudim, Zdrave mesto (Healthy City)	In 2001, the city of Chrudim joined the WHO Healthy Cities Project. Since then, the city has implemented a "Plan of Municipal Greenery Maintenance" and has invested in new areas of green infrastructure.	GI
Denmark	Copenhagen, Increasing Well-being through Climate Change Adaptation	The City of Copenhagen is implementing ambitious climate change adaptation plans using green and blue approaches to increase the quality of life for its citizens.	GI
Germany	Stuttgart, StadtKlima and Nature Conservation for Clean Air	The City of Stuttgart has implemented spatial mapping, zoning legislation, and investment in green infrastructure to facilitate air exchange and control air pollution in the city, in addition to controlling emissions at their source.	Natura 2000
Ireland	Slí na Sláinte – Path to Health	The Irish Heart Foundation set up the Slí na Sláinte project in 1996 that aims to promote regular walking among the population as it has numerous benefits for cardiovascular, pulmonary and articular health.	Natura 2000
Spain	Barcelona Green Infrastructure and Biodiversity Plan 2020	The "Barcelona Green Infrastructure and Biodiversity Plan 2020", launched in early 2013, sets the environmental goals that the municipality intends to achieve by 2020 in order to become a city where natural and urban spaces interact and enhance one another.	Natura 2000
France	Villejuif, Le Parc des Hautes Bruyères	South of Paris, the Council of Val de Marne converted a brownfield site into 23 hectares of public park with the purpose of reducing noise from a motorway, as well as providing a valuable community resource.	GI
Croatia	Zagreb, Medvednica Nature Park	Nature Park Medvednica is a protected area on the border of the city of Zagreb and offers residents and an increasing number of tourists a chance to escape the urban environment and enjoy nature through winter sports, walking and hiking, as well as educational programs.	Natura 2000
Italy	Slow Food Presidia	The Slow Food Presidia project aims to sustain traditional agricultural products and processing methods at risk of extinction, and to protect unique regions and ecosystems.	Natura 2000
Latvia	Rāzna National Park, Green Routes without Obstacles	The aim of "Green Routes without Obstacles" is to increase the availability of nature-based tourism for disabled people at three protected areas in Latvia, Lithuania and Belarus.	Natura 2000

Country	Case	Description	Natura 2000/GI
Luxemburg	Eicherfeld, TERRA, Community Supported Agriculture	Started in 2014, TERRA (Transition and Education for a Resilient and Regenerative Agriculture) is Luxembourg's first Community Supported Agriculture initiative.	GI
Hungary	Lake Hévíz, Hungary's Unique Thermal and Medicinal Lake	Lake Hévíz is a peat bottom thermal lake located in West Hungary within the Lake Hévíz Nature Protection Area. Its healing effects are linked primarily to its sulphur content and bacteria living in the water; they are used for the treatment of rheumatic and locomotor diseases.	Natura 2000
Austria	Vienna, Neighbourhood gardens	Caritas Austria has initiated 3 neighbourhood gardens where residents of their care homes work together with volunteers. The residents are elderly people that need care, disabled people and underage refugees separated from their parents.	GI
Poland	Hajnówka, The Land of the Bison and Primeval Forest Nordic Walking Park	In 2011, a network of Nordic walking trails opened in Hajnówka county in Eastern Poland. The trails spread across the Białowieża Forest, a UNESCO World Heritage site fully covered by Natura 2000 protected areas.	Natura 2000
Portugal	Cascais, Quinta do Pisão - Sintra-Cascais Natural Park	Quinta do Pisão is part of the Sintra-Cascais Natural Park. It is a redevelopment of abandoned agricultural land into a working farm and large public park offering walking and cycling paths, as well as a range of events based around sustainable tourism.	Natura 2000
Slovenia	Secovlje Salina Nature Park and Lepa Vida Spa	The Natura 2000 area Salina Nature Park generates 90 local jobs in the tourism and health sectors while maintaining biodiversity values of the area.	Natura 2000
Finland	Kuopio, Moved by Nature Programme	Moved by Nature's primary aim was to promote the collaboration between nature and health sectors to allow vulnerable groups to benefit from access to physical activity in green spaces.	Natura 2000
Sweden	Alnarp, Rehabilitation Garden	The Alnarp Rehabilitation Garden was established as a research and development project involving nature-based rehabilitation (NBR), with a special focus on the role of nature in improving the mental health of patients.	GI
United Kingdom	Pembrokeshire Walkability and Exercise Referral in National Park	The Walkability Project started in 2011. It is a partnership between Pembrokeshire Coast National Park, the Welsh Government and the Hywel Dda Local Health Board.	Natura 2000

HEALTH AND SOCIAL BENEFITS OF NATURE: ADDRESSING SOCIETAL CHALLENGES AND HOPES FOR FUTURE ACTION

There is a **growing recognition of the urgency to address health and social issues in Europe**, of **synergies between health, social and nature policies and actions**, and of the need to realise these through nature-based solutions.

Broader collaboration across stakeholders is needed, as is the integration of nature across policy domains - at the global, national, regional and city level. Stakeholders from across health, social and nature spheres, and from government, NGOs, and business, need to explore collaborations of mutual interest and identify measures for progress. For example, **at the global level**, the World Health Organisation (WHO) and Secretariat of the Convention on Biological Diversity (CBD) are already working closely together, facilitated by a commitment made in the CBD COP11, in Hyderabad, India¹. The WHO also engaged in discussions at the Paris UNFCCC COP21 in 2015, where the “Right to Health” was recognised in the key outcomes, recognising the synergy between climate change and health². There is a similar need for a “Right to Nature” that could help meeting global commitments and needs, from the Rio Conventions to the Sustainable Development Goals (SDGs).

At the **EU level**, there is **room for new engagement to support EU policy and programme coherence, effectiveness and EU-added value**. This can involve proofing of policies for coherence, and the integration of health-social-nature synergies into EU programmes (e.g. European Structural and Investment Funds such as the Cohesion Fund and European Social Fund, Life+, RTD H2020) in order to use EU funds more effectively. Within the EU, Member States have responsibility for health, and the integration of health-social-nature synergies in strategies and plans. **At the site level, the case was made that the EU’s 27,000 Natura 2000 sites could be seen as pre-emptive health care centres in Europe**, offering not just biodiversity benefits, but also functioning as health hubs, zones of social engagement, as well as contributing to local economic development.

Finally, it was recognised that **regions and cities could be important drivers (and multipliers) for realising health-social-nature synergies**. Citizen wellbeing, stakeholder roles, and cost-effective use of public budgets is often more easy to identify at the city level.

IMPROVING URBAN MICROCLIMATE AND AIR QUALITY

Heat stress is becoming a public health concern in Europe. With dense grey infrastructure being the norm, this is leading to urban heat island effects in built-up areas. Climate change scenarios point to exacerbated conditions with rising average and extreme temperatures across Europe. **Air pollution is a major concern for many regions in Europe**. Cities are increasingly investing in green infrastructure to provide cooling benefits to citizens and help with the removal of air pollutants. Moreover, urban and peri-urban green public spaces and protected areas in and around cities can offer cooling benefits, as well as serve as oases with better air quality than their surrounding built-up areas.

Barcelona’s Green Infrastructure and Biodiversity Plan and the several decades of work in Stuttgart serve as two examples for illustrating and discussing the efforts at local and regional level to use nature-based solutions to improve urban microclimate and local air quality. In both cases, authorities have developed strategies that consider the geography and characteristics of their cities in order to meet the needs of their citizens. Barcelona is a densely built Mediterranean city suffering from air quality problems and urban heat stress. It has developed a Green Infrastructure and Biodiversity Plan as a long-term strategy to address environmental pressures, as well as improve biodiversity in urban and peri-urban areas e.g. by

¹ See Decision XI/6, Action C - *Collaboration on biodiversity and agriculture, forest biodiversity, and biodiversity and health*, point 29. p.25, Retrieved 3/02/2016 from <https://www.cbd.int/doc/decisions/cop-11/cop-11-dec-06-en.pdf>

² See p.1, retrieved 03/02/2016 from <https://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf>

developing green corridors. The city council works together with citizens, social and environmental initiatives and researchers to understand and take into account their different perspectives. Stuttgart, experiences poor air quality and urban heat islands linked to its location and industry, has undertaken a comprehensive mapping of green infrastructure and is keeping land undeveloped to improve climatic conditions in the city. The City of Stuttgart is also strategically introducing new green infrastructure such as green roofs or moss walls lining motorways, to address local air quality and help with city cooling.

MITIGATING NOISE AND LIVING NEAR NATURE

Excessive noise is the second worst environmental cause of ill-health in Europe. Over 20% of the population are exposed to noise levels exceeding 65 dB(A) during the day and more than a third are exposed to noise levels over 55 dB(A) at night. Noise can have both auditory impacts (e.g. hearing impairment) and non-auditory impacts (e.g. stress and annoyance) on human health. Local authorities across the EU are introducing measures that either aim to mitigate noise levels or to influence people's perception of noise.

South of Paris, the Council of Val de Marne converted a former industrial site into a park with diverse structures, using a large green buffer and a green hill along a motorway. Furthermore, a quiet 12m deep area was created in the shape of an amphitheatre to provide an additional space for recreation and rest. This development occurred over several years and in stages. Today, Le Parc des Hautes Bruyères presents itself as a garden of gardens. The use of vegetation and green infrastructures offers a valuable tool for city councils and urban planners, providing an alternative or complementary support to traditional noise barriers.

Green spaces and nature in people's direct living and working environment can have a positive impact on their overall health and well-being. People living in green areas are better able to recover from stress and illness and report better overall quality of life. Studies have also shown that green spaces within 1-3 kilometres from people's living environment result in them having lower levels of obesity, depression and anxiety, and increased longevity. **Nature can also have a restorative function.** There are indications that green spaces near healthcare and rehabilitation sites provide benefits for the overall rehabilitation and recuperation process. While robust evidence showing direct health impacts of green areas in people's living and working environment is scarce, it is likely that they have a positive influence. The difficulty is to measure the actual impacts of nature in people's direct living environment on their health, as there are multiple interactions at play.

WELLBEING AND EXERCISE – FROM IMPROVED MENTAL HEALTH TO REDUCED OBESITY

Sedentary lifestyle, together with prolonged stress, is associated with many public health concerns across all EU member states (obesity, mental health problems, cardiovascular diseases etc.). Access to nature has been shown to contribute to people's health and wellbeing at different parts of their lives. **Visiting nature areas during or after a day of work reduces stress. Proximity to nature has been shown to increase the frequency and duration of physical activity.** Moreover, **green areas support children's concentration and cognitive development,** and provide environments that **promote physical and mental health for elderly people. Living in green neighbourhoods has also shown to reduce morbidity and income-related health inequalities.** However, as a resource, nature remains underutilised in health promotion and preventive health care strategies across Europe.

The workshop introduced several examples to illustrate how nature can be used to promote human health and wellbeing in different settings. These included the Alnarp Rehabilitation Garden at the Swedish Agricultural University, the Moved by Nature Programme designed by Metsähallitus in Finland, the Walkability Project in Pembrokeshire Coast National Park in Wales and Chrudim City, Czech Republic. The **target groups within these cases span a large swathe of society** including local inhabitants in need

of more active lifestyles, young people at risk of social exclusion, the long term unemployed, patients suffering from stress-related mental disorders and people at risk of developing type 2 diabetes.

All projects highlighted **the importance of cross-sectoral collaboration between different stakeholders, especially at the local level**. The implementation of research results in Alnarp Rehabilitation Garden demonstrated how nature-based rehabilitation has been integrated into the local health care system in the Skåne region of Sweden. The Moved by Nature programme in Finland demonstrated how nature could be used to inspire lifestyle changes and encourage people to adopt physically active lifestyles. Despite their successes, many projects face long-term challenges in relation to their continuity. The **availability of funding and human resources** were highlighted in particular, as many initiatives were dependant on innovative project leaders and volunteers.

At the EU level, support is required to establish a **solid scientific knowledge base linked to nature's health promotion benefits** and to **foster awareness of these benefits** across Europe. The EU can also help by launching new projects and by coordinating activities that focus on using nature for prevention and rehabilitation even though jurisdiction for health care rests at the national level. The health benefits of nature can be realised within **urban green areas, larger recreation and hiking areas, and protected areas such as Natura 2000 sites**. Since the benefits from nature are accrued through repeated use, nature areas should be in **close proximity to people, easily accessible, and efforts should be made to encourage their use**. Different types of green space tend to be used in different ways and with varying levels of recurrence in order to bring about a range of benefits. Therefore, one of the key goals is to assure **inclusive access to nature** for all citizens.

SOCIAL BENEFITS – INCLUSION, SENSE OF PLACE, ENGAGEMENT AND JOBS

Across Europe, there are challenges associated with increased urbanisation and diversity of populations and the need for social cohesion. Furthermore, there is a need for new sources of employment and training, particularly in post-industrial areas. There is evidence that access to and use of shared green public spaces and wider green infrastructure can contribute to **increased social cohesion and reduced social tension**. Green spaces in urban areas can be an important factor in community identity, and can strengthen people's attachment to their communities by acting as "green hubs" for social interaction.

Engagement through volunteering e.g. in community gardens or conservation projects, is shown to **improve social networks and improve one's sense of efficacy and well-being**. The way in which the Caritas run neighbourhood garden in Vienna brings together young refugees, older people and disabled residents, shows how engagement through gardening facilitates social interaction and integration of different sectors of society. In addition, the workshop participants heard from Coastwatch, Ireland, on the role of volunteers in helping to collect marine litter on Blue Flag Beaches and gather data on species, showing how "citizen engagement" and "citizen science" work in practice.

Finally, examples from Slovenia, Italy and Spain showed how protecting biodiversity and improving nature **could provide opportunities for employment**. In Slovenia, the Secovlje Salina Nature Park, run as a public-private partnership, maintains traditional salt production, which is essential for biodiversity conservation. Secovlje Salina employs 90 local people and generates income from the artisan salt that is sold and from tourist activities linked to the spa that offers salt treatments. The Slow Food Presidia project from the Slow Food movement develops small-scale projects to help artisan food producers protect unique regions and ecosystems, recover traditional processing methods, and safeguard native breeds and local plant varieties. There are 449 projects covering 63 countries across the world. Finally, the Social Forest initiative in Spain demonstrated how a small social enterprise could reintegrate young people at risk of social exclusion by engaging them in sustainable forestry and forest fire management in Catalonia. **Challenges to realising the social benefits of green infrastructure and natural areas** were also discussed. Key issues include:

- Unequal access to green spaces, which adds to social exclusion
- The role of other social factors e.g. gender, age, relative income, and education, reduce access to green space – as proximity is not the only limiting factor for use
- Design and quality of green spaces affects use and access – poor quality environments can become no-go areas

In relation to volunteering, the reality is that the diversity of volunteers is often limited. Wider social cohesion benefits such as reducing inequalities and building bonds of trust or shared cultural norms between different socio-economic or ethnic groups, requires **active facilitation** to encourage diverse participation in both volunteering and employment (e.g. as noted in Almada, Portugal).

EXPLORING THE ROLE OF PROTECTED AREAS AND GREEN INFRASTRUCTURE IN THE HEALTH-SOCIAL-NATURE LINKS

Green areas known to deliver health and social benefits range from small-scale urban infrastructure to wider natural and semi-natural areas. **Protected areas and the EU Natura 2000 network play an integral role in providing these benefits.** The current evidence indicates that, while protected area status is not an absolute precondition for a site to deliver health and social benefits, Natura 2000 sites and other protected areas, especially those located within or close to urban areas, are a very useful mechanism for maintaining and promoting the multiple benefits. Furthermore, the development of an **EU green infrastructure (GI) network – comprising of both protected sites and other green elements – is foreseen to support the maintenance and enhancement of such benefits.** In many urban environments where high land value and competing land uses place green spaces under threat, the status of protected areas helps to guarantee their health benefits. This provides an important insurance policy for public health.

Protected areas (e.g. the Natura 2000 network) and green infrastructure strategies can support and promote health and social benefits, and at the same time contribute to biodiversity conservation. Examples from Latvia and Finland provided insights and lessons learned about the successful use of Natura 2000 areas as frameworks for health and social initiatives. These demonstrated both national initiatives and cross-border collaboration. The “Green Routes without Obstacles” project has successfully increased the availability of nature-based tourism for disabled people at three protected areas in Latvia, Lithuania and Belarus. The “Moved by Nature” programme in Finland has allowed vulnerable groups (e.g. recent immigrants and people with increased risk of diabetes) to benefit from access to physical activity in Natura 2000 sites and other green areas. These examples were followed by an overview of the latest developments in urban green infrastructure, including information on policy frameworks and instruments that facilitate, or indeed sometimes hinder, the development. Finally, the trans-European network for green infrastructure (TEN-G) initiative was introduced, with reference made to its possible future role in delivering health and social benefits. Both protected areas and green infrastructure plans and strategies are of key importance in mainstreaming nature into health and social wellbeing agendas in the future.

STAKEHOLDER ROLES, COLLABORATIONS, INSTRUMENTS, SUCCESSES AND NEEDS

Stakeholder engagement and governance structures that bring together all relevant sectors can facilitate the promotion of the health and social benefits of biodiversity. A wealth of projects and initiatives exist that bring stakeholders together with the common goal of protecting biodiversity and using their environmental services as an instrument for health and social inclusion. For example, the Irish Heart Foundation, a national charity, has accredited walks across the country, recognising their benefits for

cardiovascular health. The Slí na Sláinte programme has now been mimicked worldwide. In addition, in Pembrokeshire, the Walkability project is the result of bottom-up collaboration between a manager of a local protected area, local health practitioners, and the availability of funding from the national walking initiative.

However, these initiatives are unique and often take place on an ad-hoc basis. Hence, one priority identified by the workshop is to ensure that the **successes of existing initiatives are harnessed and disseminated more widely**. By capturing this knowledge, other countries, regions and municipalities can implement similar initiatives, and smaller projects can be rolled out on a wider scale.

The project team found that it is a challenge to engage the health sector in cross-sectoral initiatives. A panel discussion confirmed this finding. Evidence is a powerful tool to get actors in the health sector on board. However, the type of evidence that would traditionally be accepted by the medical profession - randomised control trials - requires a long process and is arguably close to impossible to obtain in the real world where there are multiple factors driving health impacts. It was argued that it is preferable to start by understanding practical case examples (i.e. see interventions as natural experiments) and their benefits over time. The **value of nature also needs to be better integrated into health economics** in order to strengthen the evidence base.

Additionally, there is a need to **build on local initiatives** and to integrate these systematically into regional and nationwide actions via policy processes. **Most cross-sectoral activity is happening at the local level**, where resources are scarce and the implementation of collaboration initiatives and projects is rather ad-hoc and short-term. Integrating such processes into formal structures can provide a framework through which stakeholders can work together effectively in a sustainable manner and build on local successes. Funding provided through EU programmes such as **the LIFE programme and the EU Structural and Investment Funds** could play a key role in facilitating cross-sectoral actions at the national, regional and local level.

WHAT CAN DIFFERENT ACTORS DO AND BRING TO THE TABLE? – INSIGHTS FROM BREAKOUT GROUP DISCUSSIONS

In breakout groups, the conference participants discussed in the roles of different stakeholders in making better use of the opportunities around the health-social-nature linkage.

What can cities and regions do?

Much of the investment in green infrastructure and nature-based solutions happens at the local and regional level through government and the private sector. Cities and regions develop plans and strategies that are either mandatory (i.e. national or regional requirements) or based on local decisions. Numerous examples discussed at the workshop show the importance of integrating nature into other sectoral work and strategies, e.g. noise mitigation plans that consider the role of nature, climate adaptation/heat island mitigation plans that take into account the cooling potential of nature, health strategies that refer to the preventative or treatment benefits of exposure to nature. However, this works both ways i.e. integrating health and social considerations into nature protection and biodiversity policies and strategies (e.g. green infrastructure strategies) to capture the health and social agenda. **Cities can usefully integrate nature-health-social issues systematically in relevant strategies, to support policy coherence and the added value of municipal investments.**

Existing laws and regulations can sometimes be a barrier to urban greening in general or to certain types of infrastructure in particular. In many contexts, existing legislation allows, and in some cases encourages, experimentation with new approaches. For example to support stormwater management in cities, where infrastructure like green roofs can help with handling extreme events, cooling, noise mitigation, and provide space for recreation. Options also exist within municipal and regional procurement processes for new approaches to be tested and, if successful, rolled out at a larger scale.

Smart cities, which successfully integrate the multiple benefits of nature, have the potential to be resilient, sustainable, and support the wellbeing of their citizens.

Policy cycles need to be considered and aligned with investment and maintenance cycles for green infrastructure and protected areas, and even with research “learning” cycles. These cycles are not necessarily synchronised; political support needs to be long-term and repeatedly renewed to attain greening and biodiversity strategy objectives. In this context, **clear criteria for green infrastructure standards are useful**, but often are often lacking. Some quasi-standards have evolved throughout time e.g. the objective of a green space within 300m. However, such criteria are often developed on an ad hoc basis and are not homogenous across European cities and regions. **Collaboration on defining such criteria could be an important catalyst of greening strategies.**

What can civil society do?

Organisations and individuals that represent citizens and their interests e.g. community groups or NGOs, have driven many of the health-social-nature benefits projects, often together with managers of protected areas. They provide knowledge and insights that drive initiatives in this area. The challenge is to ensure that this is valued and understood by other stakeholders so that solutions are collaborative. Opportunities exist to bring together different groups to work in this area and there are good examples of how interventions have worked. Champions, or members of civil society organisations who drive nature-health-society partnerships, help make further links across other organisations. In Tryavna, Bulgaria, a local child support charity led a programme to improve access for children to Zmeeva Dupka, a local protected area that was previously underused and neglected by the public. Although the project benefitted from the support of the municipal government and received international funding, it was the charity itself that initiated the project as it recognised the benefits that engaging in nature would have for disadvantaged children in its care.

This links to the role of boundary organisations – specific groups that focus on building bridges across organizations. In terms of implementation and investment, there was a suggestion that funding streams could be tweaked to include the other elements e.g. incorporating health and social outcomes into environment project descriptions, monitoring and evaluation. Furthermore, it was suggested that funding stream criteria should reflect a holistic approach, e.g. in the EU LEADER funding projects, civil society has a place on the project management boards and hence could encourage such practice. In addition, civil society organisations could be part of the solution to the lack of hard evidence by supporting research, as they are often involved in interventions which could be studied. Integration of different sectors into research work would be useful.

What can countries do?

Projects that promote the health and social benefits of nature - initiated by proactive stakeholders such as managers of protected areas - play a crucial role in facilitating engagement and buy-in at national level. Building on these pioneering initiatives, a range of national level actions are required to enable the mainstreaming of these benefits, making their uptake a more common practice.

The development of a robust policy and institutional framework that recognises and promotes the positive links between public health and nature, is needed for the uptake of nature-based health and social benefits at a broader scale – e.g. health strategies and plans that integrate nature’s role and building laws that recognise the importance of nature for health and social benefits of citizens. To be successful, these frameworks need to be cross-sectoral and effectively integrate nature’s health and wellbeing benefits within the relevant sectoral policies and institutions (e.g. environment, health, education, spatial planning, construction and transport).

Furthermore, national level efforts are required to effectively increase awareness of nature’s health-related benefits, particularly when it comes to the role nature can play in preventing different health-related problems. For example, updating the national or regional educational curricula for medical professionals so that they reflect the current understanding on nature’s role in providing health benefits. National level coordination and support is also required when promoting good practice examples on different EU and international fora, with a view to mainstreaming health and social benefits of nature

beyond individual Member States. Finally, national level action is required for modifying existing public funding priorities and instruments to support the uptake of nature-related health innovations.

What can the EU do?

While health policies are the responsibility of Member States, there are many opportunities for building on the health-social-nature synergies at the EU level. The **implementation of the Birds and Habitats Directives** and the associated Natura 2000 network is a core contribution, as is the implementation of the **green infrastructure strategy** and biodiversity strategy targets (e.g. **15% restoration target**).

Life+ and other funds (e.g. **European Structural and Investment Funds such as the Cohesion Fund and European Social Funds and ideally the EU Investment Plan**) can help with investment in management, infrastructure and engagement with protected areas and wider green infrastructure. This in turn requires clarity of **policy commitment** (e.g. in the Partnership Agreements, PAs) and **capacity building** on the ground (i.e. to support project identification and hence **ability to absorb funds**).

A commitment for **biodiversity and health proofing** of policies and programmes can identify areas for synergies and areas where unacceptable trade-offs can be avoided, and hence support the new **EU budget – the Multi-annual Financial Framework (MFF)**.

This could be supported by a **renewed Environment & Health strategy**, to raise the profile of health-social-nature issues. Furthermore, timely and effective implementation of a range of other policies, directives and regulations can take account of the health-social-nature synergies – facilitating meeting targets cost-effectively, while achieving multiple benefits for the environment, society and the economy. Examples of areas of opportunity include the **Water Framework Directive (WFD) and Marine Strategy Framework Directive (MSFD)** as good ecological and environmental status objectives can support access to quality nature, which can, in turn, support social and health objectives.

The EU can also play a role in supporting **information provision** (e.g. through the **MAES process** – on mapping and accounting for ecosystem services), in **evaluations and assessments** (e.g. ensuring the health-social-nature issues are duly considered in impact assessments (IAs) and REFIT exercises and hence an issue that the new Regulatory Scrutiny Board considers), and in **research through its H2020 programme**. This will help contribute to improved **understanding**, an enhanced **evidence base** and **tools** that can support EU policies and their implementation.

Science-policy interfaces and the role of research and awareness

Research knowledge should be used more effectively to define EU-level and national policies and to develop best practices. We need to rethink, however, how **communication methods** and **knowledge transfer** can be improved. More tailor-made packages are needed to reach the end-users. The first steps in this work are the communication of existing research findings and joint identification of the key research gaps within the science-policy interface.

A crucial issue in promoting nature-based health benefits for citizens is **cross-sectoral collaboration** between relevant partners, including co-design of both research and practical applications. New ways of interweaving research with planning, implementation and evaluation of projects are needed. In particular, evaluation of practical project outcomes needs to be developed and linked to key demonstration projects across Europe.

Moreover, **there are differences in evidence cultures between different experts and sectors**. We need to identify what kind of evidence is needed in specific situations and contexts. Even within the scientific community, there is no agreement as to what extent the current evidence base on nature-health links is adequate. However, evaluations of the role of research in supporting policy-making suggest that existing research findings on nature-based solutions are rarely applied, so it is as much about integrating the existing evidence as finding new evidence.

More clarity is needed on research needs to improve the understanding and application of health and social benefits of nature. Nature, health and wellbeing link not only to the medical profession, but also to social and natural sciences. In medical science, results from the top of the evidence pyramid are generally

called upon when pursuing treatments, but less rigorous testing may be needed for encouraging people to be physically active or make other beneficial lifestyle changes. For medical professionals, randomized controlled trials are considered almost the only valid method for a strong evidence base. The relationship between individuals, social issues and nature or green infrastructure are, however, too complex to be investigated via experimental research. Current science and practice seem to focus too intently on limited sets of relevant aspects and factors. The kind of evidence that is actually needed should be considered more openly, identifying what is “fit for purpose” in each context.

DEVELOPING A ROAD MAP FOR A WAY FORWARD

The closing plenary of the workshop focused on both “Implementation on the Ground: Lessons and Needs”, as well as “Engagement of EU Institutions in Health-Social-Nature Synergies”.

Change can be brought about at the Member State level via policies, strategies (e.g. integration of nature into national health and climate adaptation strategies), and **institutional decisions**. In practice, however, **many of the initiatives driving progress on health-social-nature synergies are bottom up initiatives**, led by managers of protected areas, cities, business, and green, health and social NGOs.

Protected areas have proven themselves as healthcare centres in their own right. Park authorities have been effective at driving integration of health and social issues. Often they start with small initiatives that demonstrate their utility and these are then taken up more broadly. With 27,000 Natura 2000 sites in Europe, there is major potential for a shift in public health through access to nature. Currently, EU health spending is primarily treatment based, with prevention only accounting for 2% to 3% of the health care budget. With constraints on public budgets, there is further downward pressure on budgets for preventative health care, though there are **good arguments to focus more on preventative and cost-effective health care – which can meet objectives within restricted budgets and maintain a higher baseline of public health.**

There is also **convincing evidence of the health, social and development benefits to children** who need access to nature for learning, cognitive development, and to support the development of the immune system. The workshop highlighted a number of social NGOs and schools that demonstrated commitment to enabling access to nature for children and future generations.

Cities are natural multipliers and arenas of action. The integration of health-social-nature benefits in city strategies (e.g. on health, noise, climate change adaption, green infrastructure) and in investments, is important for citizen wellbeing and helps support a diversification of jobs and skills (e.g. green roofs and landscape planning) and opportunities for volunteering (e.g. leading health-nature walks).

Research is essential “oil in the engine”, facilitating progress. Efforts by the EU institutions (e.g. Horizon 2020 research funding) as well as national and private research, are essential if the inter-dependency of citizens-society-economy and nature is to be understood, opportunities for nature-based solutions for health and social objectives identified.

As regards **funding**, investments need to come from member states, businesses and citizens. The EU also has a number of existing budget lines to support work, which could support EU-added value. For example, the Cohesion Policy has associated funds, and more opportunities for funding are likely to emerge as commitments to have sustainability fundamentally integrated into regional policy are realised. This requires effort to build awareness of health-social-nature benefits and the potential to use funds for these purposes. Capacity building is also required to improve absorptive capacity in countries and regions for such funding.

While the EU's role on health-nature is limited by subsidiarity – as formal responsibility lies with Member States – EU policies, strategies and funding are important drivers of health-social-nature benefits. The **implementation of the Birds and Habitats Directives and associated Natura 2000 network**, the **Water Framework Directive** and the **Marine Strategy Framework Directive**, as well as **health-social-nature proofing of EU policies, programmes and funds**, can each play a role. Furthermore, the core ambitions on jobs and growth in Europe can be supported by health-social-nature initiatives, both directly in niche jobs and market creation, and by contributing cost-effectively to a healthy working population.

The scale of the challenge and the opportunities for action are such that **multilevel governance solutions are needed** to drive the way forward, with **windows of opportunity** at global, EU, national, region, city, business, community and citizen levels. Global commitments come with every COP, which are typically ever two years. Opportunities for new policies, policy reviews or funding priorities are typically set every three to five years. National budget launches and institutional reshuffling are also important windows of change, as are day-to-day decisions by cities, business and citizens. These **windows of opportunity need to be recognised and seized**. Capitalising on these can prove cost-effective, contribute towards meeting biodiversity objectives and lead to a wide range of benefits for society and the economy.

Next Steps and Further Information

The workshop is part of the wider project – *The Health and Social Benefits of Biodiversity and Nature Protection* – and the insights have been integrated into the final report.

The presentations are available at: www.ieep.eu

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