green4c

EU BLUEPRINT ON GREEN CARE:
NATURE FOR HEALTH,
WELL-BEING AND SOCIAL INCLUSION

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🌿 PROJECT INFORMATION

The Green4C Knowledge Alliance, co-funded by the Erasmus+ Programme of the European Union, is a three-year long project (2020-2022) that aims at creating new university-business partnerships to develop, support and enhance knowledge and practice exchange and flow, while fostering innovation and facilitating entrepreneurial opportunities, capacity and skills for students, researchers, professionals, as well as practitioners in the field of Green Care. The focus of the project is to foster innovation and entrepreneurship by integrating health and social care with the use of nature and natural resources and ecosystems in both rural and urban areas.

At the foundations of the alliance is the Green4C consortium made up of expert universities, research institutes, businesses and international organisations in the different thematic sectors proposed by Green4C. The partners of this consortium include the University of Padua (UNIPD – coordinating institution) in partnership with Etifor | Valuing Nature, Elevate Health, the Universitatea Transilvania din Brașov (UNITBV), Istituto Superiore di Sanità (ISS), Meath Partnership, Bundesforschungszentrum für Wald (BFW), the European Forest Institute (EFI), Wageningen University and Research (WUR), Forest Design, the University of British Columbia (UBC) and University College Dublin (UCD).

INTRODUCTION

Human societies, economies and cultures are embedded in nature and depend on nature for their sustenance and well-being. Negative changes in environmental conditions (*e.g.*, drought, deforestation, ozone layer depletion, loss of biodiversity) deeply affect human health and well-being and accentuate social inequalities. Given these patterns of interdependence, working with nature and ecosystems to tackle environmental challenges is becoming of paramount importance. **Nature-based Solutions (NbS)** aim to enhance sustainable urbanisation, restoration of degraded ecosystems, adaptation and mitigation to climate change and enhance risk management while benefitting biodiversity and supporting the delivery of multiple ecosystem services (Somarakis *et al.*, 2019; Bulkeley, 2020).

"[NbS] are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions. Nature-based Solutions must benefit biodiversity and support the delivery of a range of ecosystem services (Bulkeley, 2020, p. 4)".

Moreover, there is a growing recognition that **interactions with natural environments have positive benefits on stress-related, chronic and psychological diseases connected to urbanisation, modern lifestyle and working conditions** (Frumkin *et al.*, 2017; Hansen *et al.*, 2017). According to the EU Biodiversity Strategy 2030, "we need nature in our lives" to improve our psycho-physical health and that of the Planet (European Commission, 2020). Globally, it is estimated that by 2030 two-thirds of the world population will live in urban areas. Urban lifestyles are often connected to higher crime rates, inequality, unemployment, lower air quality, as well as deteriorated social connections, while rural outmigration leads to a decrease in services and employment opportunities, loss of social ties, and abandonment of landscapes. At an individual level, more unhealthy and sedentary lifestyles, together with a higher use of technological devices, are leading to increased loneliness, depression, anxiety and stress (Hoorens *et al.*, 2012; ESPAS, 2020). Along with hypertension and obesity, these are the main risk factors for non-communicable diseases (NCD). The incidence of NCD coupled with the current and expected ageing of the population of Europe, makes it clear that private and public expenditure for health and long-term care will drastically increase. Therefore, health prevention and promotion strategies are an international priority (Jamison *et al.*, 2006; World Health Organisation, 2018a, 2018b).

Natural spaces are increasingly recognised as an opportunity for alternative and preventive health benefits (Nilsson *et al.*, 2011; Frumkin *et al.*, 2017). The recognition of these benefits is especially amplified within the context of the challenges brought by the Covid-19 pandemic. Natural environments reduce stress, while interaction with natural ecosystems induces psycho-physical relaxation which can strengthen our immune systems (Ulrich *et al.*, 1991; Song *et al.*, 2016). Connecting with nature also helps to regulate our emotions, increasing positive thoughts, inspiring calmness, and vitality (Bratman *et al.*, 2015; Richardson *et al.*, 2016; Farrow and Washburn, 2019). Frequent visits to natural and wild areas are related to strong social cohesion while closeness to green areas and trees increase attention, performance at school and physical activity (Shanahan *et al.*, 2016). People with mental diseases and disabilities also benefit from connection to nature (Hartig *et al.*, 2003; Morita *et al.*, 2007; Sonntag-Ostrom *et al.*, 2015). Natural spaces stimulate cooperative behaviours, improve self-awareness and reflection and facilitate coping mechanisms for social pressure and healing (Nordh *et al.*, 2009; Sonntagg-Ostrom et al., 2015; Salomon *et al.*, 2018). The combination of different nature-based rehabilitation approaches seems to decrease reliance on intense medical care (Pálsdóttir *et al.*, 2014; Währborg *et al.*, 2014).

🌿 GREEN CARE: CONNECTING NATURE AND HEALTH

In search for cost-effective and efficient approaches that address people's needs for healthy lifestyles with low or acceptable side-effects, Green Care has emerged. **Green care refers to "...a range of activities that promotes physical, mental and [social] health and well-being through contact with nature"** (Sempik *et al.*, 2010, p.121). The concept of Green Care is linked to the use of natural, restored and newly created ecosystems and natural elements for individual and collective health, well-being and social inclusion (Cohen-Shacham, 2016). Green Care initiatives enhance the provision of benefits from nature for an individual while also responding to broader social

and environmental challenges. Thus, we view Green Care as an umbrella term summarising a wide range of activities and targeted beneficiaries that **focus on *health*, *well-being*, and *social inclusion* as primary objectives. Activities range from health and well-being promotion** (targeted to the wider population), **disease prevention** (accessible to a wider population, but typically targeted towards more vulnerable individuals or groups) and **therapeutic interventions** which include medical therapy, treatment and rehabilitation interventions for addressing specific needs (Sempik *et al.*, 2010; Marušáková *et al.*, 2019; Shanahan *et al.*, 2019; Doimo *et al.*, 2021).

# 🍃 GREEN4C AND THE DEFINITIONS OF THE THEMATIC SECTORS

The concept of Green Care describes the centrality of nature to human health, well-being and social inclusion. This research has identified four thematic sectors in Green Care based on the geographical spaces where Green Care initiatives and activities take place (*i.e.*, forests, agricultural land, urban areas), and on their specific focus in promoting human health, well-being and social inclusion.

🍃 FOREST-BASED CARE

refers to all organised interventions in forest areas that embed "aspects of healthcare, social inclusion and rehabilitation, health prevention with clinical assistance to broaden wellness and relaxation, education ranging from pedagogy to opportunities for disaffected people, spiritual and inspirational values, employment, and livelihood" (Doimo *et al.*, 2021, p.3).
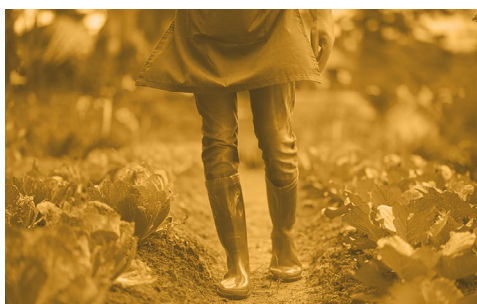
🍃 SOCIAL AGRICULTURE

or social farming can be defined as "an innovative, inclusive, participatory and generative model of agricultural practices that delivers recreational, educational and assistance services. It aims at the social and labour inclusion of disadvantaged people, who through social agricultural practices are able to contribute to food and agricultural production" (Di Iacovo and O' Connor, 2009, p.11).

🍃 URBAN GREEN CARE

describes the range of projects, initiatives and/or actors and organisations promoting urban and peri-urban green spaces and explicitly incorporating human health and well-being in their strategies and activities.

🍃 GREEN CARE TOURISM

refers to a wide range of organised tourism experiences and products that rely on nature and wild spaces for tourists in search of health, well-being and regeneration.

A FRAMEWORK FOR INNOVATION IN GREEN CARE

As an emerging sector, Green Care practices are associated to different types of innovation, including technological, organisational/business, institutional and social innovation. In addition, innovation processes in Green Care are based on ecological and intrinsic values of nature which can be referred to as Nature-based Innovation (Randrup *et al.*, 2020). Innovation and entrepreneurship are interlinked in Green Care. Entrepreneurship in Green Care can refer to **processes and outcomes of innovative value creation that harness health and well-being benefits of nature, and result in transformed human-nature attitudes, interactions and relationships**. Green Care entrepreneurs are agents of innovation and change and are involved in Green Care initiatives for a purpose rather than a profit. Green Care offers tools to address societal challenges while also creating opportunities for entrepreneurial activity, job creation and active citizenship (Karjalainen *et al.*, 2010). However, rarely the impacts and multifaceted opportunities of Green Care are taken into consideration with a systematic and comprehensive approach. In order to support innovation and entrepreneurship in Green Care, the Green4C project proposes a **Green Care Innovation System Framework** that builds upon other innovation system frameworks discussed in literature. Figure 1 shows key aspects grouped into two categories of dimensions in the proposed framework:

The environmental dimension: Ecosystems and spaces, both natural and built infrastructures, that act as foundational basis for innovation processes and activities;

The social dimension:
a) Beneficiaries and their needs; b) Institutions and formal and informal norms; c) Policy context; d) Governance arrangements; e) Public discourses and vision; f) Collaborative arrangements; g) Collaborative learning; h) Champions and frontrunners; i) Resources (natural, human, infrastructure, financial, social capital).
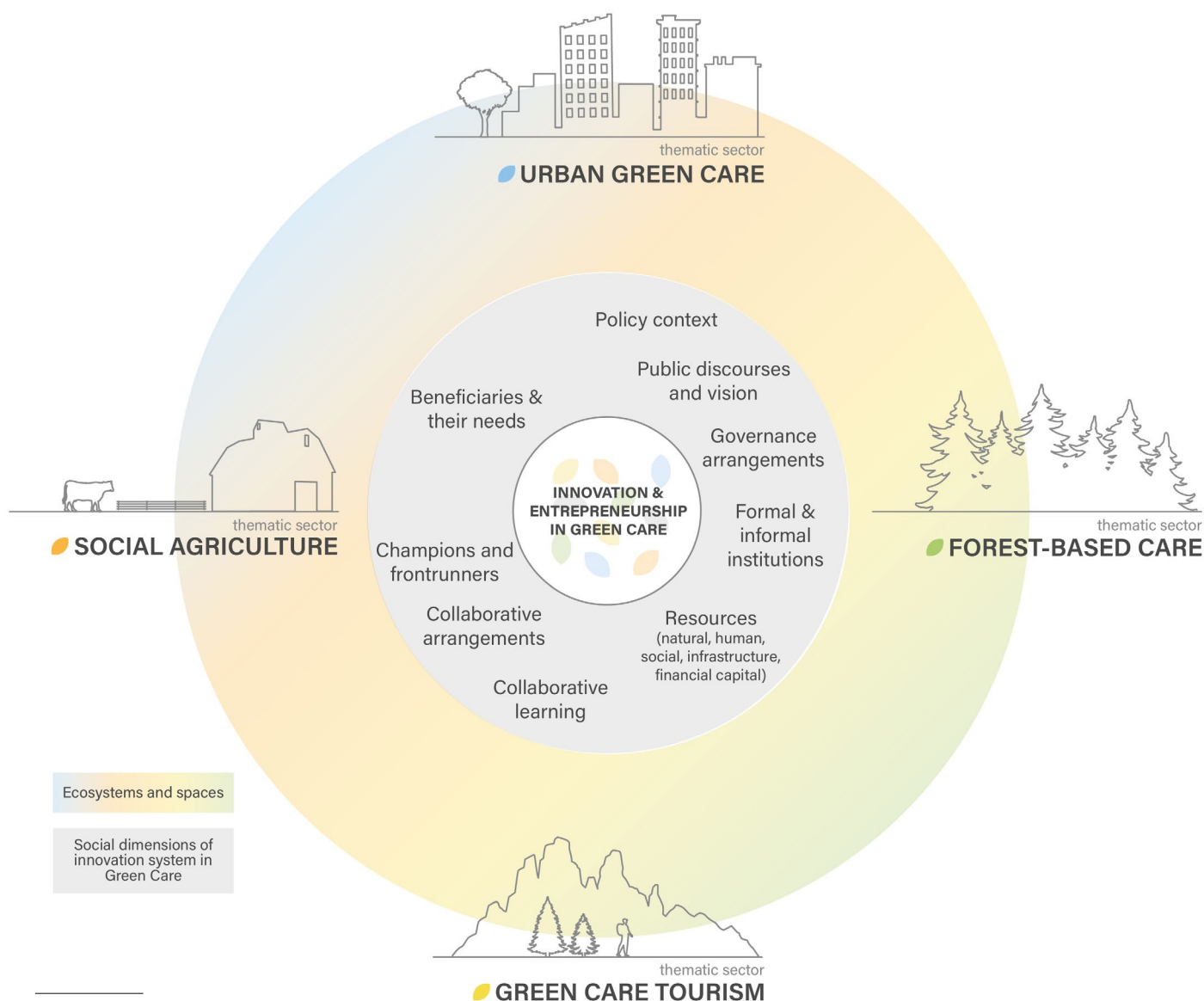

Figure 1. Green Care Innovation system framework

✿ EMERGING ISSUES IN GREEN CARE

The framework was used to analyse 20 case studies selected for their diversity in terms of focus on health, well-being and social inclusion activities, locations, targeted beneficiaries, and business models. The results of the detailed analysis of each thematic sector are reported and discussed in the "Background report for the EU Blueprint on Green Care". Specifically, five emerging issues common to all four thematic sectors are identified and provide the basis for the recommendations of this Blueprint. It is worth mentioning that the testing of this framework shows that these sectors are complex, evolving and innovating.

Health and well-being as a focus for policy and management of ecosystem services.

Although nature is being increasingly recognised as a cost-effective and efficient solution for addressing health and well-being challenges, we are still a long way from wide recognition and communication of these benefits to beneficiaries, and providing dedicated funding to support providers. Some of the reasons include:
(1) health interventions are mainly expected to be curating rather than preventive;
(2) underfunding of activities such as mental health care prevents experimentation with nature-based solutions;
(3) health and well-being refer to avoided costs instead of real income and make it difficult for decision-makers to assign funding based on "virtual" economic value of health and well-being ecosystem services; and
(4) causal connections between specific management interventions, or different natural elements, and health, have not been always adequately researched.

Green Care as a new sector for entrepreneurship and the development of innovative professions.

New professions and occupations related to Green Care indicate a growing demand for these services from people looking for ways to reconnect with nature as well as opportunities to use newly available or restored green spaces. New occupations translate into the emergence of new training needs, which have been identified in the Green4C "Training Needs Assessment" (Mammadova *et al.*, 2020) and will warrant increasing attention from a training and continuing education perspective. Green Care can help with addressing seasonality in employment and service provision, and can provide renewed entrepreneurial and employment opportunities in remote areas.

Courtesy Forest Theraphy Institute

Courtesy L'Olivera

Green Care: from individual benefits to broader social, economic and environmental impacts.

Initiatives in Green Care have diverse impacts, which are primarily connected to individual benefits but also translate into broader societal, environmental and economic direct and indirect impacts regardless of the size of the initiative. Understanding both positive and negative impacts and trade-offs is very important for the success of the initiatives in this sector even though most of the reviewed initiatives do not conduct systematic monitoring and evaluation. Some of the challenges for monitoring and evaluating impacts are:

(1) different beneficiaries or participants, and different activities, require different monitoring tools;

(2) initiatives do not often apply standardised approaches to their practices;

(3) methodologies for monitoring and evaluation are still applied on a case-by-case basis;

(4) systematic approaches need the support of Universities and research centres while initiatives are sometimes too small to be able to allocate adequate resources to monitoring.

Green Care initiatives are hybrid organisations.

Green Care initiatives can be described as hybrid organisations that aim to reduce or alleviate a social or environmental issue as their primary purpose and combine qualities of both for-profit and not-for-profit in their business models. Specifically, the cases analysed show that these initiatives:

(1) connect profit-generation to social and environmental goals;

(2) navigate in often unclear boundaries of institutional and legal frameworks (e.g. profit vs non-profit);

(3) operate across and connect diverse economic sectors;

(4) operate in niche markets where public policies and markets do not address emerging societal challenges and needs; and

(5) produce diverse organisational structures, governance systems and collaborative arrangements in innovative ways (e.g. community led vs. top-down).

Success factors and challenges for Green Care initiatives.

Success factors in Green Care initiatives are connected to access to different forms of resources such as *social capital* (*e.g.*, collaborative attitudes, trust, collective action), *human capital* (*e.g.*, dedicated people), *financial capital* (*e.g.*, public funding and private investments), as well as to availability and emergence of *collaborative arrangements* (*e.g.*, formal and informal networks) and *related collaborative learning* (*e.g.*, knowledge exchange, peer-learning). Challenges relate to the *policy context* (*e.g.*, changing priorities in public funding, budget cuts; outdated insurance policies; fragmented policy-making processes), diverse *public discourse and vision* (*e.g.*, lack of public awareness on the importance of mental and social well-being in public health, recognition of the social and economic value of the Green Care sector and the importance of urban green spaces), *institutions and norms* (*e.g.*, diverse fiscal regulations and insurance systems, restrictive rules of public access to green spaces, lack of standards to benchmark different Green Care practices), *climate change* (*e.g.*, changes in ecosystem functions and flow of ecosystem services), and *collaborative learning* (*e.g.*, lack of interest from healthcare professionals to integrate Green Care practices).

● RECOMMENDATIONS

The following recommendations aim to centre policy on the role of ecosystem services for health, well-being and social inclusion. These recommendations are provided for different stakeholders such as policy makers, service providers, professionals, land managers, funders, supporters, researchers and scientists involved or interested in Green Care.

For policy makers:

a) Institutional and legal clarity on the role and responsibilities of Green Care providers (both non-profit and for-profit) should be made.
Greater clarity should be sought to:
1) define the sector of Green Care and the duties and responsibilities of the involved actors;
2) understand the needs of these actors to secure their sustainability over time while addressing individual health, well-being and social inclusion, as well as larger societal, environmental and economic benefits;
3) address the legal registration status of new for-profit and non-profit enterprises so that fiscal advantages can be obtained.

b) Health and well-being ecosystem services provided by nature should be supported through adequate funding, technical assistance and research programs, and their impacts should be evaluated and communicated.
Policy makers and large institutions such as the European Commission can:
1) ensure funding and investment opportunities for Green Care initiatives, through diverse means and based on the avoided costs of prevention;
2) support designated research and sharing of science-based results;
3) provide guidelines on the management of ecosystems for health and well-being (*e.g.*, accessibility, selection of species, spacing, protection of monumental trees and other single land values); and
4) create systems of indicators, monitoring and communication services, including those related to the economic assessment and accounts on the benefits and costs of Green Care activities.

c) Structural funds such as those connected to the implementation of Community-Led Local Development can support Green Care initiatives and make them more easily accessible to wider cooperation groups of beneficiaries at local level. It must be clear that not all Green Care activities rely on market demand and can be financially sustainable through beneficiaries' payments alone.
This is evident in Austria, where Green Care was identified as a special component of the Rural Development Program and could be replicated in other regions and countries. Funding instruments could also be secured through innovative partnerships with private funders and investors, or through innovative instruments such as the health budgets, which can support access to funds over a longer-term basis. Health budgets make public funds available to alternative health care and social inclusion programmes, managed by organisations with new ideas and means. Policy makers can also support innovative payment mechanisms such as payments for ecosystem services.

d) Policy makers should give more visibility to the health, well-being and social inclusion benefits provided by nature to achieve healthier, more inclusive and more resilient communities.
Disseminating and communicating the importance of these benefits to the public would help to make the multiple positive impacts of Green Care initiatives visible and open space for promoting diverse funding and financial mechanisms. Improving evidence on cost saving can help the public and private health and insurance sectors invest in Green Care.

e) Policy and regulations should facilitate access to public as well as private resources (i.e., land, natural resources, infrastructures) recognising the role of managing green spaces and ecosystem services for health, well-being and social inclusion.
Access for Green Care activities should be provided in both public lands (*e.g.*, land managed by State Forest Enterprises, protected areas and parks) and in private lands. For this, the example of the "right of access" in Scandinavian countries can be followed. For example, allocating unused green spaces in cities for Green Care activities could represent a win-win solution for decision- makers and local level organisations involved in health, well-being and social inclusion practices.

f) Local governments should support the identification and management of green spaces in urban and peri-urban areas, with special attention of unused/abandoned and brownfield sites.

Green Care initiatives can be also understood as investments for meeting national and EU regulatory framework targets on biodiversity protection, climate change mitigation and adaptation and rural development. Local governments that invest in Green Care activities may also gain a competitive advantage in meeting those requirements. The co-benefits in health, well-being and social inclusion of Green Care activities can help in building more resilient communities in urban and peri-urban areas.

g) The involvement of the public sector in Green Care should aim to achieve impacts at larger scales.

Collaboration of local municipalities can:

1) drive new opportunities in sectors such as Urban green care (*i.e.*, access and infrastructure investments), Social agriculture (*i.e.*, health and social services, funding), Forest-based care (*i.e.*, health service, use of public lands) and Green care tourism (*i.e.*, management of green areas, infrastructure investments);
2) support ongoing research and evidence-gathering; and
3) help to distribute the positive impacts at a larger scale in a more systematic way.

h) Collaborative arrangements and interdisciplinary learning among the Green Care service providers and the conventional health care sector should be stimulated for gathering evidence on the effectiveness of Green Care approaches.

Policy makers should aim to facilitate these processes by providing platforms for promoting knowledge transfer within and among initiatives, sharing good practice and evidence of impacts across initiatives, as well as enabling continuous experimentation, monitoring and evaluation of the results. These platforms should support greater networking opportunities at different levels and across sectors.

i) Social innovation and citizen participation in Green Care initiatives should be encouraged.

This ranges from access and active use of green spaces by citizens to direct involvement in green space management (*e.g.*, park and community garden management, trail maintenance), citizen science (*e.g.*, bird watching, recognition and reporting of invasive species), open-source nature trails or biodiversity and database development. Citizen engagement enhances good governance and empowers a wider target group and can also enable creative ways to monitor the impacts with new and inclusive approaches.

Courtesy Miramonti Boutique Hotel

For funders and supporters:

a) Innovation and entrepreneurship in Green Care should be facilitated and nurtured through knowledge hubs and innovation accelerator programmes.
In Green Care, champions are key, yet often innovators lack skills on how to develop business plans, gain broader skillsets and enlarge networks to build social capital. There is a need to create innovative environments and settings that support prototyping, development, implementation and evaluation of the proposed Green Care activities. Knowledge hubs, incubators and accelerator programmes focussing on fostering innovation and entrepreneurship capacity provide access to learning, grants and mentorship as well as opportunities for initial investments in Green Care initiatives.

b) Civil society organisations, no-profit and charity initiatives can support the application of responsible or ethical finance and socially responsible investments.
Thanks to their unique perspective, civil society organisations can play a key role in ensuring that the provision of services by providers abides to the conditions of responsible or ethical finance and socially responsible investments, and that these tools can be applied to both no-profit and for-profit organisations. They can also ensure that their value creation is recognised for both their direct and indirect impacts.

c) Innovative funding mechanisms should be developed by private healthcare and insurance companies.
Besides public actors, private healthcare and insurance companies can promote the application of Green Care approaches by recommending them to their clients and actively collaborating with service providers and practitioners to develop innovative collaborative arrangements. Private healthcare and insurance providers can buy into and promote the benefits of nature by demonstrated savings brought from the approach (i.e., reduced health problems and insurance claims).

For research and the academic community:

a) The health, well-being and social inclusion-related impacts of Green Care initiatives should be scientifically evaluated and documented for comparative analysis.
Scientists can support practitioners by developing robust methodologies and user-friendly impact assessment tools to collect data and monitor their impacts. In addition to health, well-being and social inclusion, environmental, social and economic impacts of Green Care initiatives can also be studied to help recognise the multifunctionality of these initiatives. Green Care initiatives in cities, municipalities and rural areas that have been actively investing in green spaces for health, well-being and social inclusion can be analysed through in-depth studies to better inform policy lead to the uptake and replication of similar approaches and lead to the recognition of the contributions and positive impacts of Green Care initiatives in achieving international targets, including the Sustainable Development Goals, on both environmental and social dimensions.

b) Trade-offs, possible conflicts as well as synergies between traditional land uses and Green Care activities need to be identified, analysed and addressed to improve land use management and planning.
For example, in forestry possible land use conflicts can arise between Green Care activities and traditional timber logging, while synergies with other activities such as the collection of wild forest products and biodiversity protection may be possible. It is important that innovative arrangements enable the creation and recognition of new values, and that there are mechanisms in place for compensating land managers when there is economic loss.

c) The development of common quality standards and protocols for clinical interventions using nature needs to be accompanied by quality assurance.
Common quality standards and systems of quality assurance need to be defined and periodically revised to ensure quality of the service providers and of the Green Care services. Mechanisms such as third-party audits help to prevent unreliable claims and ensure scientific rigour and credibility of the approaches adopted. Standards and protocols have to be developed through consultation with different parties to avoid stifling innovation processes, support the emergence of innovative ideas, and to help communicate the validity of Green Care approaches to the broader public.

These recommendations assume a special value in light of the post-Covid-19 recovery and transition. Science-based evidence should guide policies and strategies on Nature-based Solutions linked to Green Care initiatives. The importance of inclusive and accessible quality green spaces, in the light of possible strategies to prevent the spread of COVID-19 and similar diseases is widely acknowledged. Green outdoor spaces are not only considered less risky than indoor spaces for transmission of virus, they also provide a way to cope with stress and mental fatigue induced by the uncertainties and challenges of this particular period. The need for access and use of green spaces has been increasing and changing dramatically given the strict lockdown measures imposed by many governments to tackle the global pandemic. At the time of writing, this assessment did not have the specific data from the initiatives to analyse the change in use as a result of lockdown in their specific areas. Regardless, strategies need to be scientifically sound, supporting the activities in natural environments that have proven to be effective and sustainable in their responses to the diversified new and emerging needs of urban and rural society. As Henry David Thoreau wrote, "our village life would stagnate if it were not for the unexplored forests and meadows which surround it. We need the tonic of wildness […]. We can never have enough of Nature."
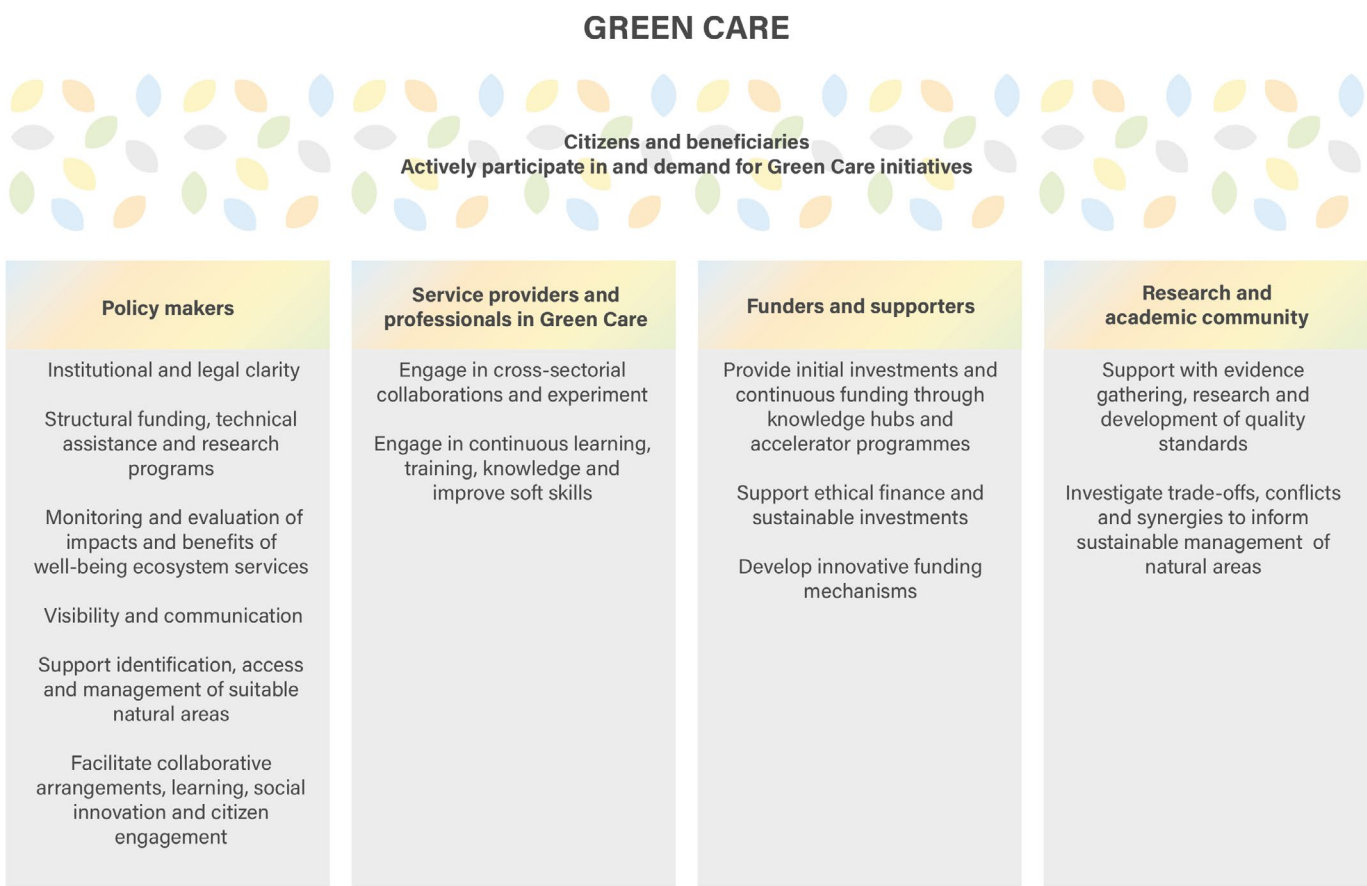
GREEN CARE

Citizens and beneficiaries
Actively participate in and demand for Green Care initiatives

Policy makers	**Service providers and professionals in Green Care**	**Funders and supporters**	**Research and academic community**
Institutional and legal clarity	Engage in cross-sectorial collaborations and experiment	Provide initial investments and continuous funding through knowledge hubs and accelerator programmes	Support with evidence gathering, research and development of quality standards
Structural funding, technical assistance and research programs	Engage in continuous learning, training, knowledge and improve soft skills	Support ethical finance and sustainable investments	Investigate trade-offs, conflicts and synergies to inform sustainable management of natural areas
Monitoring and evaluation of impacts and benefits of well-being ecosystem services		Develop innovative funding mechanisms	
Visibility and communication			
Support identification, access and management of suitable natural areas			
Facilitate collaborative arrangements, learning, social innovation and citizen engagement			

Figure 2. Summary of recommendations

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