

TELOS TOPIC 01

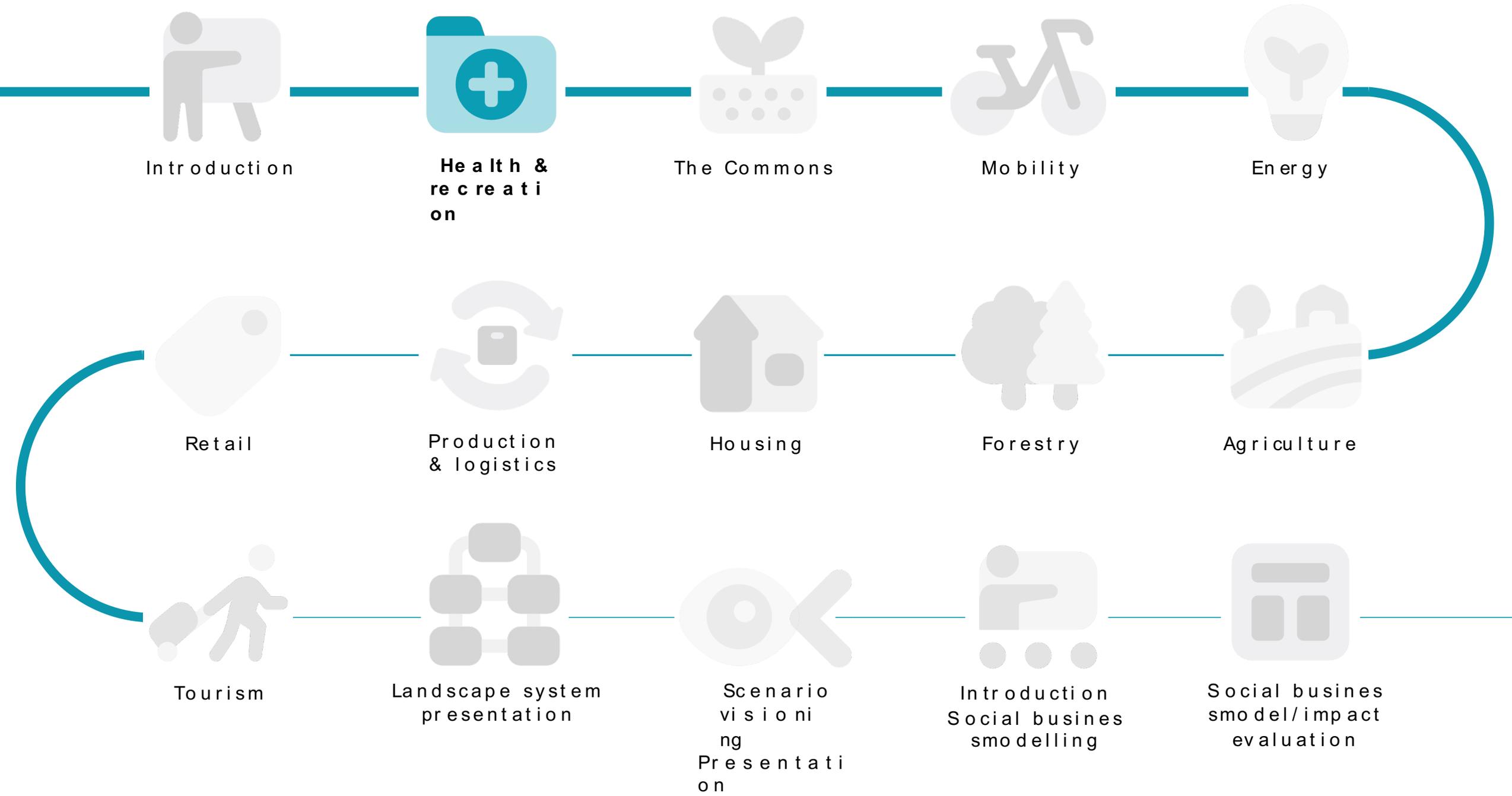
Health & Recreation

Content development by
Prof. Dr. Maria Beatrice Andreucci



SAPIENZA
UNIVERSITÀ DI ROMA

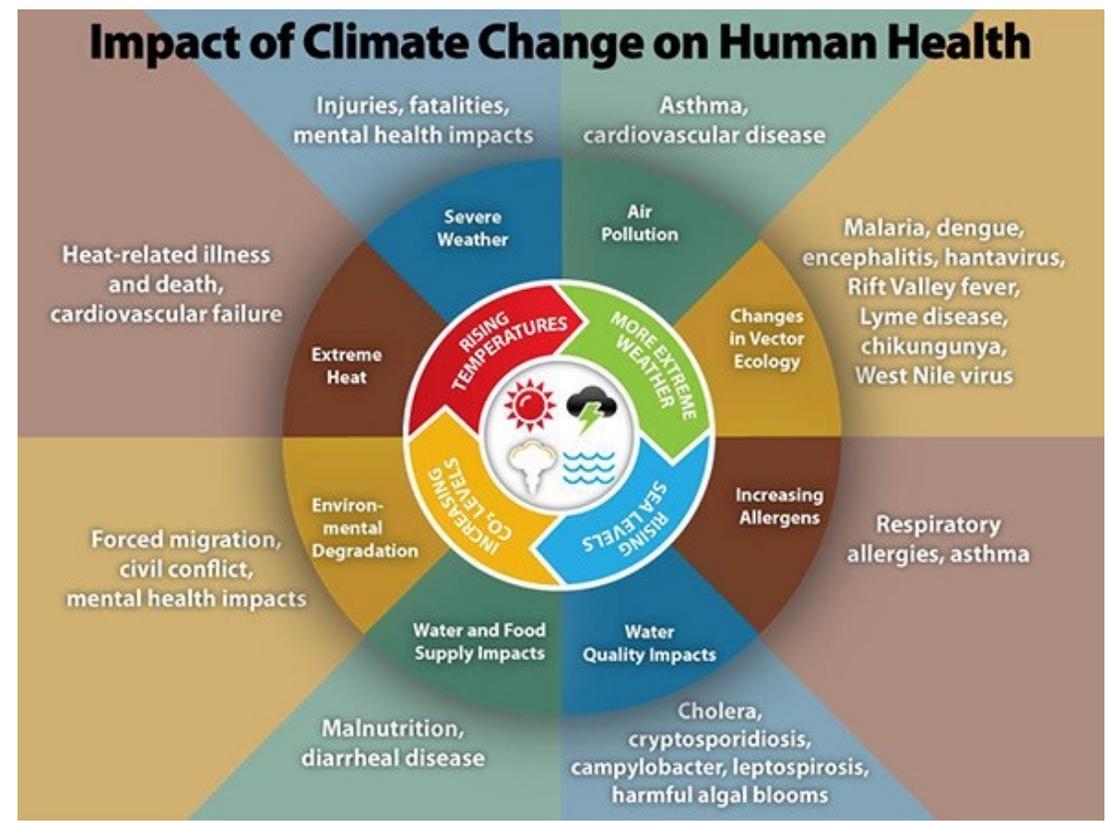






Climate change and health

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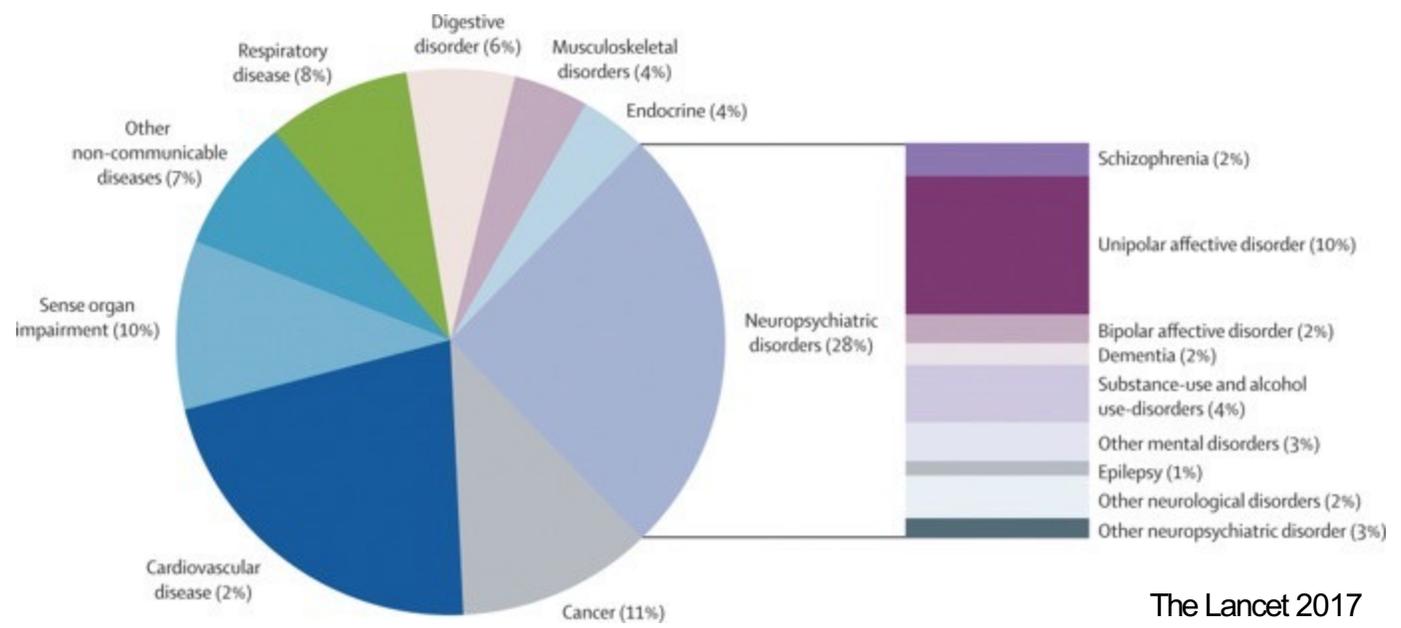
Centers for Disease Control and Prevention

No **health** without **mental health**

According to the World Health Organization's definition, "health is a state of complete physical, mental and social well-being and not only the absence of disease or infirmity."



Non-Communicable Diseases



The Lancet 2017

The main types of NCD are cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.

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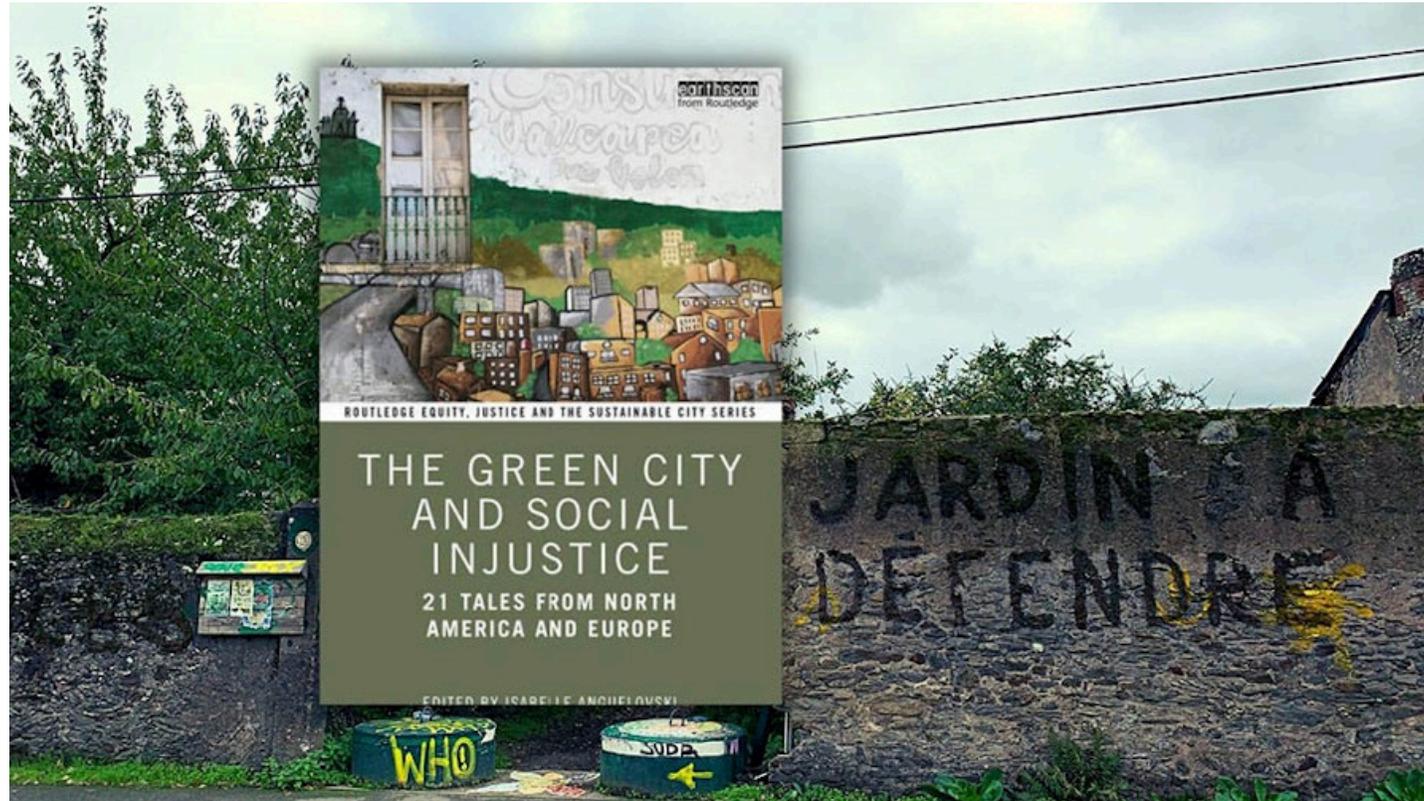
Cardiometabolic diseases leading causes of morbidity and disability

At a global level, over **300 million people** are estimated to suffer from depression, equivalent to **4.4% of the world's population**

(WHO, 2017)



Social injustice and Nature gap

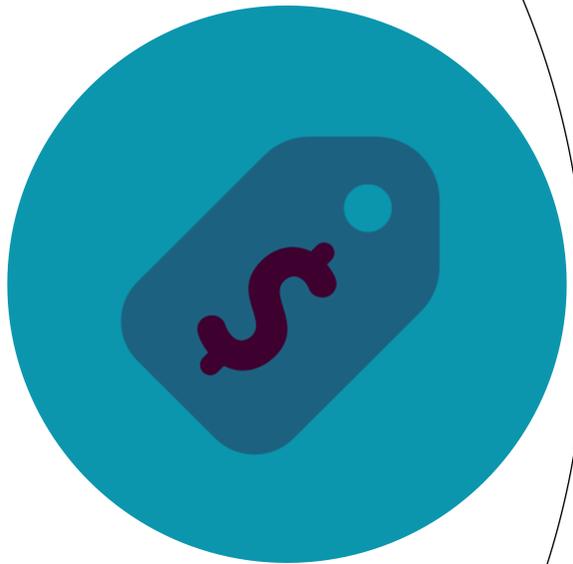


Isabelle Anguelovski, 2021

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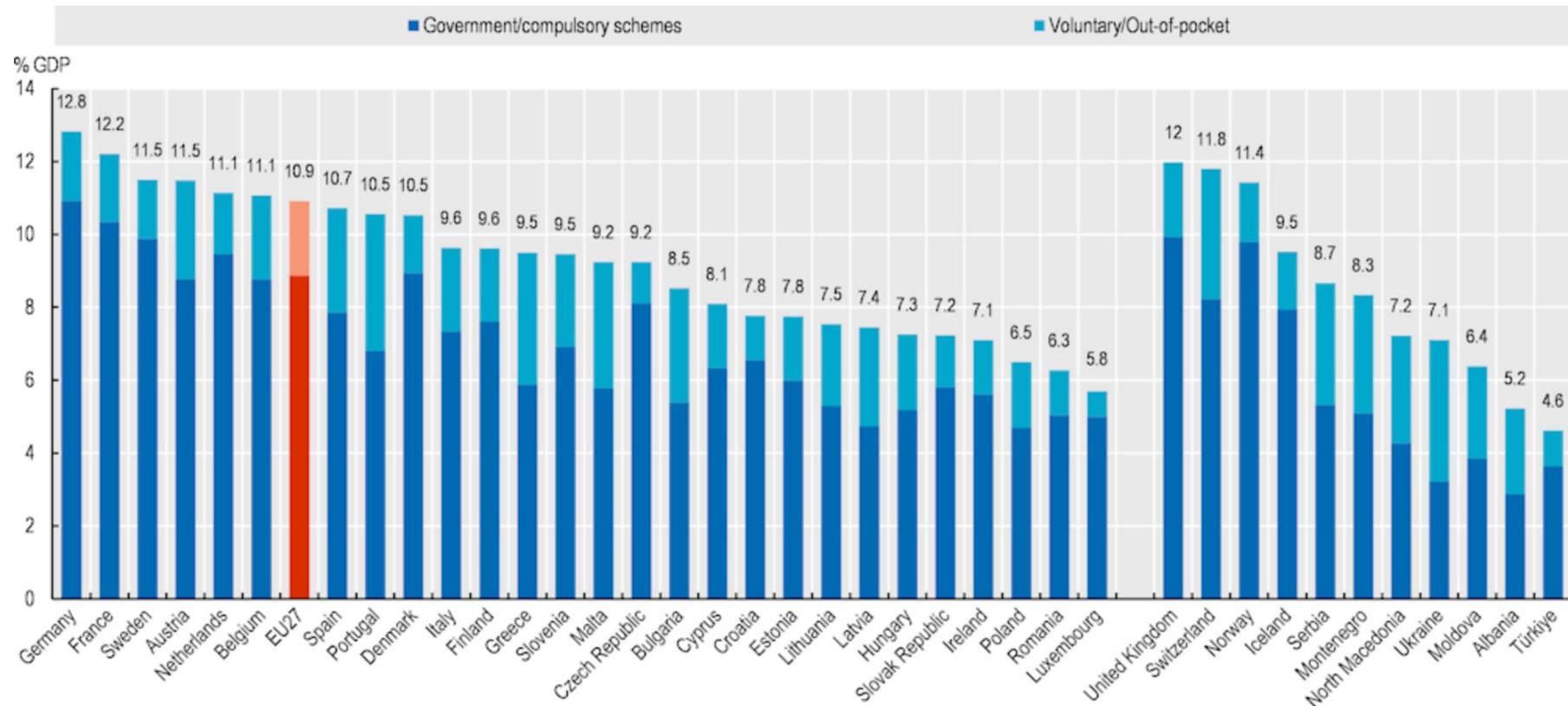
#2

Key economic dimensions



Health expenditure as a share of GDP, 2020

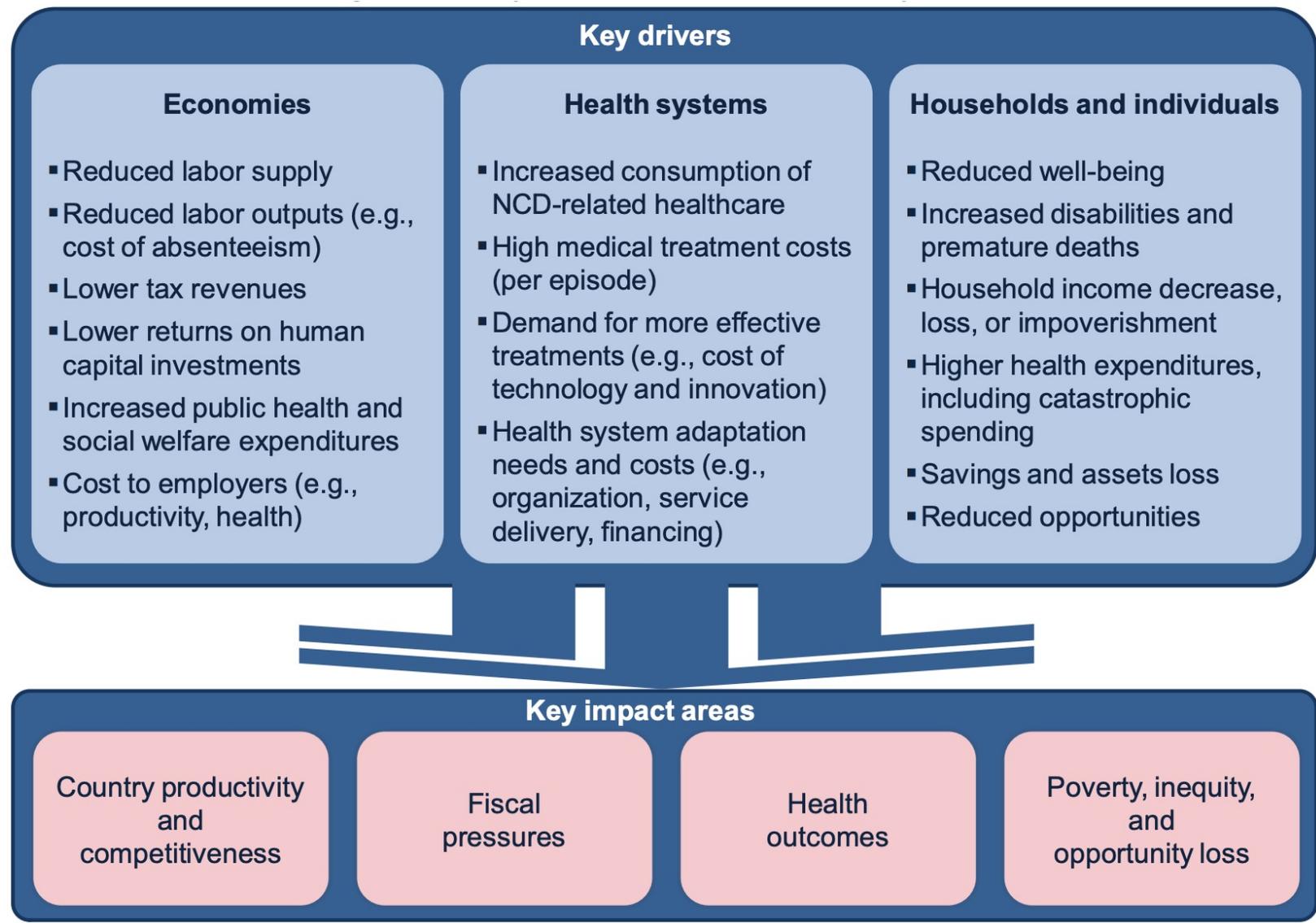
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OECD

Significant impact of NCDs

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NCDs as a major challenge for sustainable development

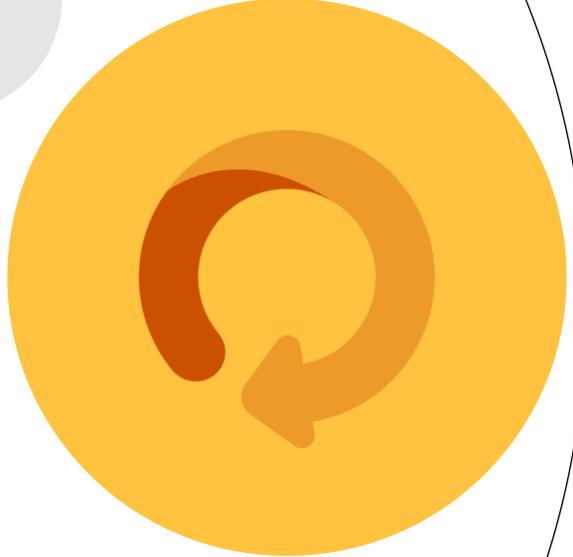


SDG Target 3.4 | Noncommunicable diseases and mental health: **By 2030, reduce by one third premature mortality from non-communicable diseases** through prevention and treatment and promote mental health and well-being.

NCDs ACROSS THE SDGs
A CALL FOR AN INTEGRATED APPROACH

#3

**Strategic and financial
opportunities /
Key stakeholders /
Synergies & Trade-offs**



Sustainable communities are healthy communities

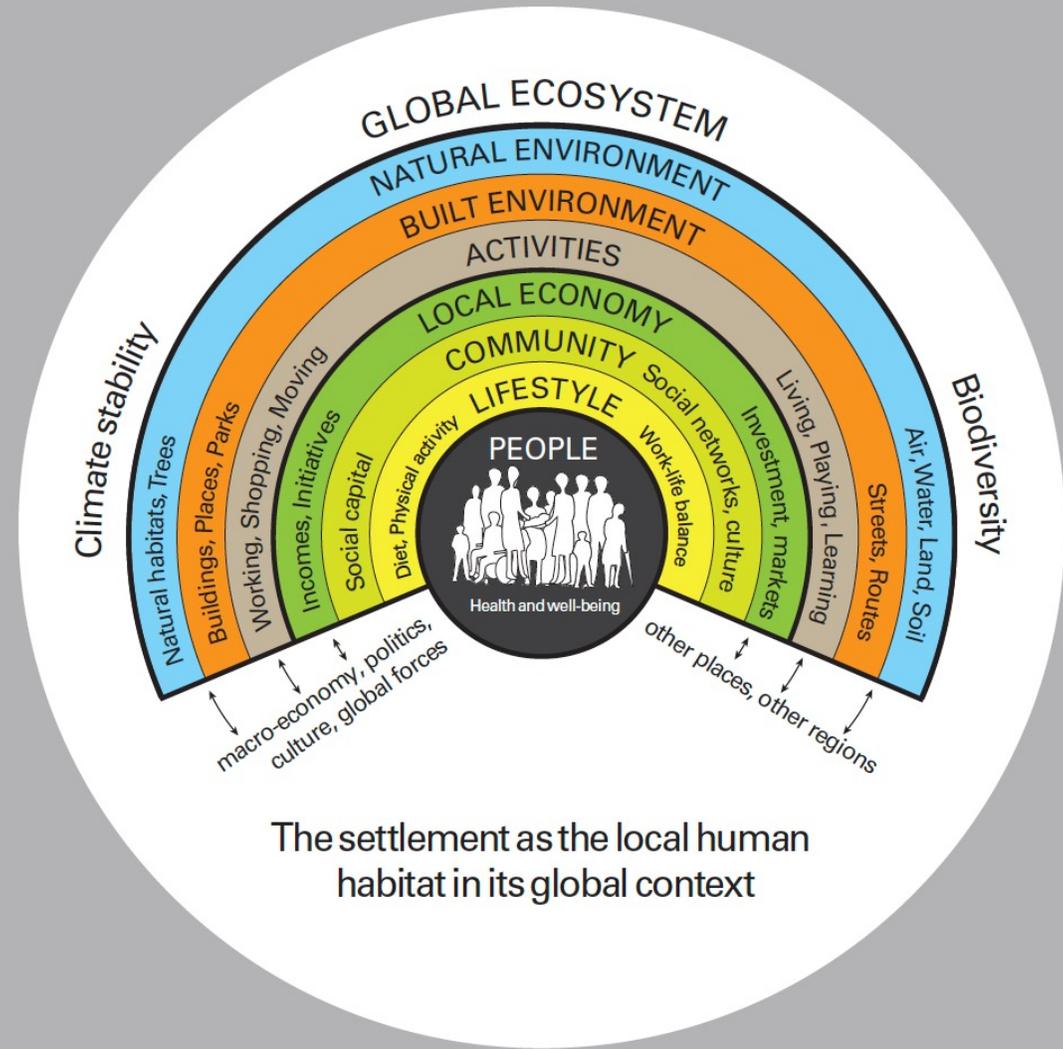
- There are **positive links between health, wellbeing and landscape.**
- But if we are to plan, design and manage places in ways that influence people's health and wellbeing in positive ways, there are **many personal and social factors that must also be understood.**
- These factors, the so-called **determinants of health**, are summarised in the **Settlement Health Map**

Whitehead, M., and Dahlgren, G., *What can be done about inequalities in health?* Lancet 338, 1059–1063, 1991.

Barton, H., and Grant, M., *A health map for the local human habitat*, Journal of the Royal Society for the Promotion of Health, 126 (6) pp 252–253, 2006.

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The **Settlement Health Map** illustrates how health and wellbeing are influenced not just by genetics, but also by the **conditions** in which people live.



The Settlement Health Map (Barton and Grant 2006) is developed from a concept by Dahlgren and Whitehead first published in 1991

Local economic and community conditions influence the choices people make about where they work, shop and play

- Local economic and community conditions influence **the choices people make** about where they **work, shop and play**.
- The way in which buildings are connected by networks of streets, footpaths and cycleways influences **how people choose to move** about and this can have an impact on **how much physical exercise** they get.
- Take a simple example: if a busy road does not have a pavement, walking will be seen as dangerous and fewer people will choose to walk.
- Another example is the **urban heat island effect**, where the tendency for built-up areas to be warmer than the countryside, exacerbated by the absence of trees and green space, can increase health problems for city dwellers in summer.
- In both cases, there are **public health-related issues** arising from the way places are planned and designed – something landscape professionals can influence.
- Simple green infrastructure interventions, for example, offer an effective way of buffering temperature levels in urban areas.

Places must be safe, attractive, and easily accessible

- Building on the Settlement Health Map and accepting that the **key determinants of a person's health** are **lifestyle, community, local economy, activities and the built and natural environment**, it is clear that landscape is important to all of them.
- Places that encourage activity, as well as places that encourage passive pursuits such as **reflection and relaxation**, must be **safe, attractive and easily accessible**.
- These are components of an **essential community infrastructure** that is as important in making liveable places as planning for housing, employment and highways.

The relevance of public realm

- Civic squares and spaces in the **public realm** should be **consciously planned and designed** to promote social interaction.
- People living in urban areas also need easily accessible places where they can **interact with nature**, so community gardens, allotments and conservation projects are important.
- Green infrastructure provides a **cost-effective** way of meeting many of these objectives, while creating attractive green spaces that can also enhance property values and encourage tourism.
- All of **these things benefit the socio-economic status of local populations** and contribute to community **cohesion** and **sustainable development**, as well as benefitting **wellbeing**.

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A good understanding of the **evidence base is an essential first step in helping health, planning and landscape professionals ensure that the planning, design and management of all places promote public health.**

While the **complexity of the relationship between people's behaviours, socio-economic backgrounds, health and green space makes establishing causal relationships difficult, most studies support the view that green spaces have beneficial health effects.**

Lee, A C K., and Maheswaran, R., *The health benefits of urban green spaces: a review of the evidence*, Journal of Public Health vol. 33, No. 2, pp 212–222.

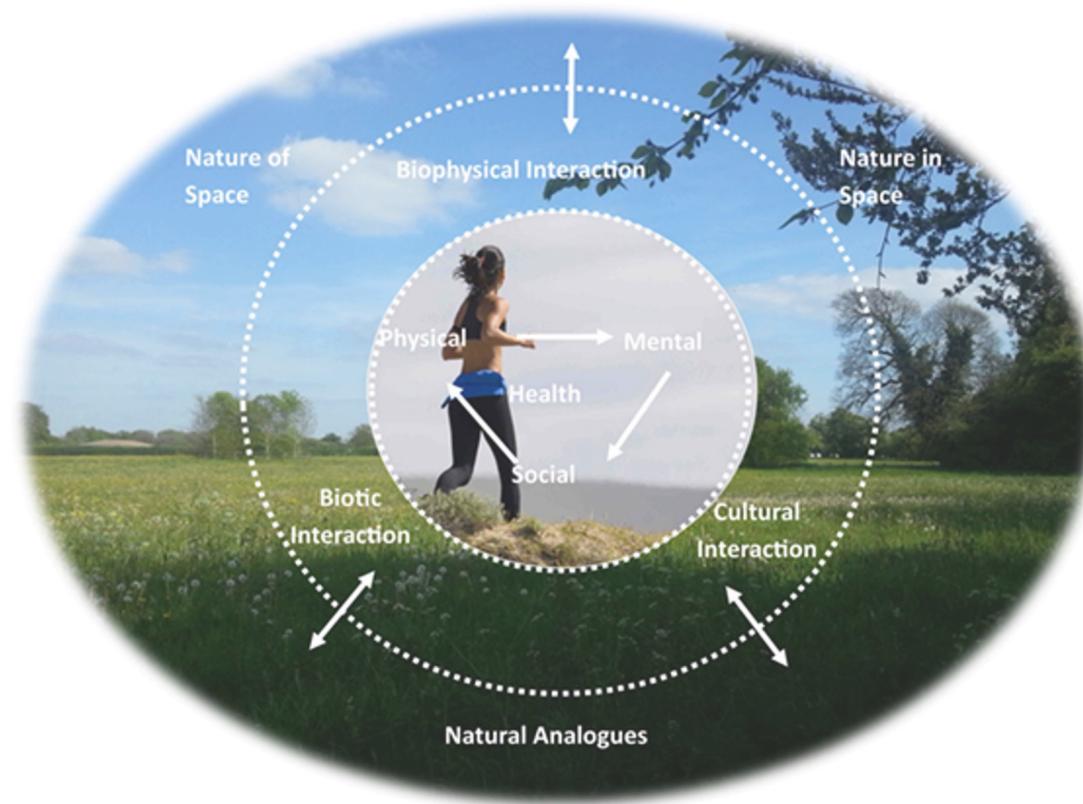
Importance of space and proximity to Nature

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Greenwich

Building evidence of benefits of nature



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Biophilia

bio·phil·ia
(bahy-oh-fil-ee-uh) noun

an innate and
genetically determined
love for the natural world
felt universally by humankind.

Wilson 1984 / Naava

The Biophilia Hypothesis



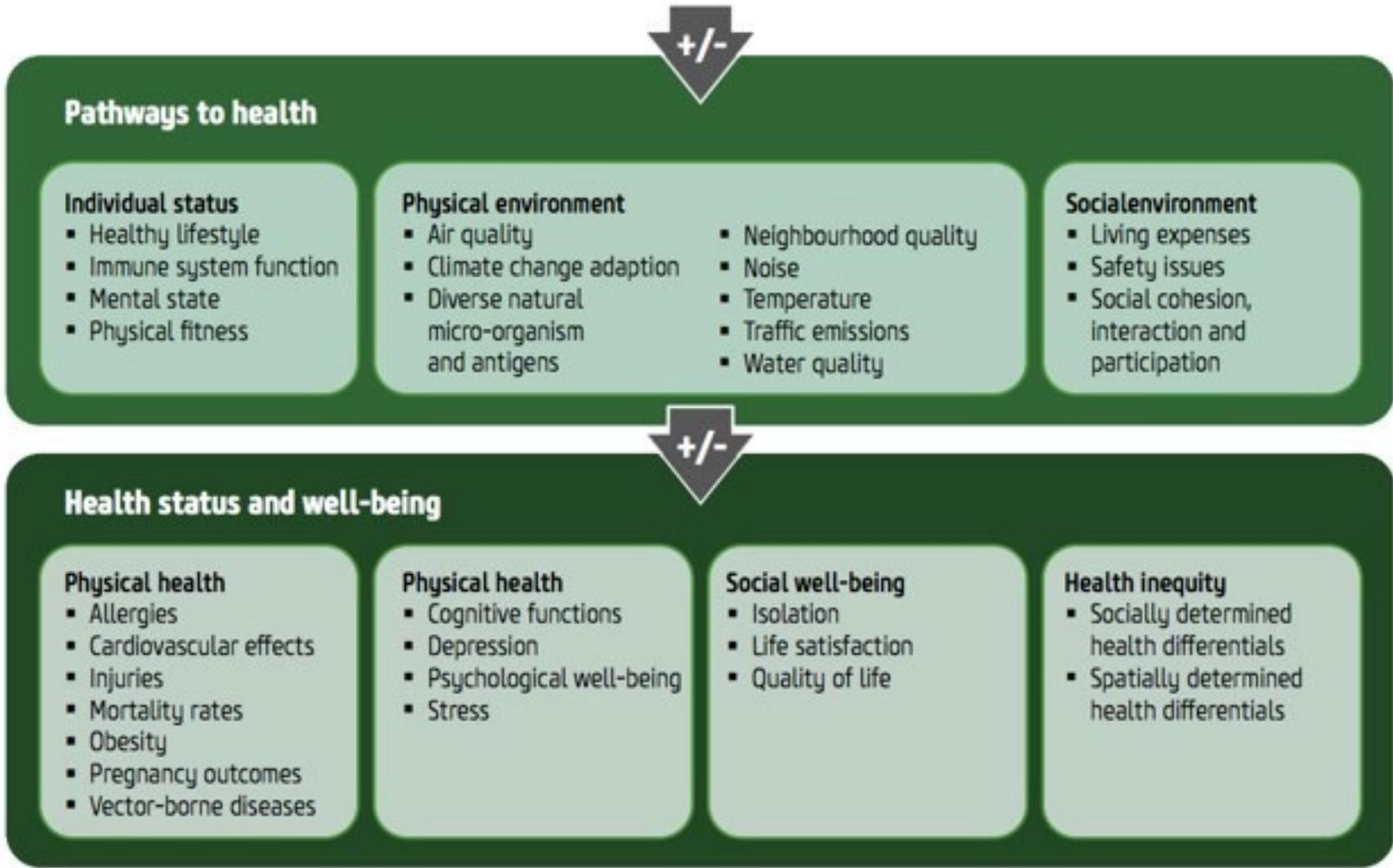
EDITED BY **Stephen R. Kellert**
AND **Edward O. Wilson**

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The pathways



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Maria Beatrice Andreucci, 2023



Physical activity



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Social Cohesion



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Difficulties with biophilic design

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Who benefits from Nature?

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Stefano Boeri Architects

Maria Beatrice Andreucci, 2023



IT'S GETTING HOT

IT'S THE HUMANS!



CLIMATE CHANGE HAS A SIGNIFICANT IMPACT ON HEALTH

1 TELL PEOPLE THE TRUTH ABOUT THE DANGERS WE FACE

2 TELL PEOPLE WHAT THEY CAN DO ABOUT IT... CHANNEL THE ENERGY OF ANXIETY INTO ACTION

HUMANITY IS DIRECTLY CHANGING THE CLIMATE

HEAT, DROUGHT, FLOODS AND HURRICANES. IT ALL IMPACTS PUBLIC HEALTH



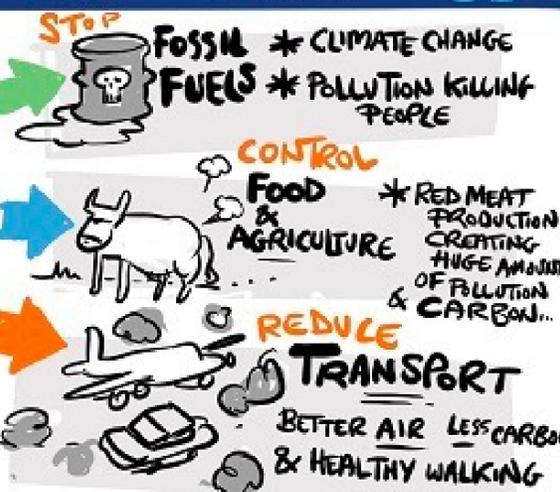
NUTRIENT RICH FOOD UNDER PRESSURE FROM CLIMATE CHANGE... THERE WILL NOT BE ENOUGH CALORIES TO FEED THE WORLD...

SOLUTIONS: THERE ARE SHORT, MEDIUM AND LONG TERM ACTIONS... BUT WE NEED TO DO IT!

FOOD HAS A DIRECT IMPACT ON HEALTH

WE NEED TO SHOW THE BENEFITS OF

NET ZERO



PEOPLE EXPECT THE GOVERNMENT TO ACT & SAVE US...

3.5% TIPPING POINT...

BOTH INDIVIDUALS AND ORGANISATIONS NEED TO ACT...

3.5% OF THOUGHT LEADERS CHANGE HABITS THEN THE REST WILL

IT'S NOT JUST PHYSICAL HEALTH IT'S ABOUT MENTAL HEALTH

PRE-TRAUMATIC STRESS... IT'S A REACTION TO REALITY

WE ARE DOMINATED BY OUR EMOTIONS... AND ANXIETY & STRESS ARE AT THE FOREFRONT...

WE START TO REGRESS AND DO NOT MAKE GOOD DECISIONS AS A RESULT!!

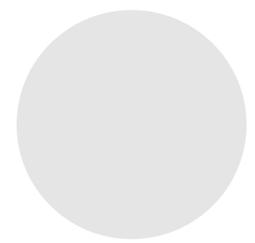
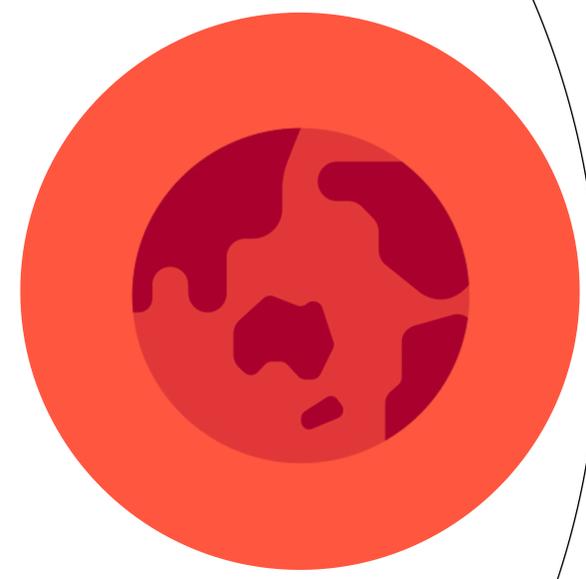
WOMEN AT THE TABLE TO ACT ON CLIMATE CHANGE...

IN FOOD MORE PEOPLE THINK ABOUT COST THAN CLIMATE... GET RICH...

FOOD... s1sTet\ Sol.YT... LMEif.tUS1"RA16N.CO.UK

#4

Case studies





Menomonee Valley and Community Park (USA)



AFTER



BEFORE

OVERVIEW:

DESIGNER

Wenk Associates, Inc.

PROJECT TYPE

Industrial park

FORMER LAND USE

Brownfield

LOCATION

Milwaukee, Wisconsin, USA

SIZE

56 ha

CLIMATE ZONE

Humid continental

BUDGET

\$40 million for development sites and remediation, \$9 million for stormwater park.

COMPLETION DATE

2006 (Phase I and II), construction ongoing

Description

The plan creates a centralized park and shared stormwater treatment area as the centerpiece of a 140-acre light industrial redevelopment. The park creates over 60 acres of recreational space with revitalized landscape and habitat along the Menomonee River. The shared stormwater facility results in a higher development yield for individual property owners, allowing the City to remain extremely competitive when attracting businesses to the Valley.

Environmental benefits

- Increased developer yield (usable land) by 10-12% over conventional development by clustering development sites and consolidating stormwater management.
- Treats water quality and manages 100-year flood volumes for 100+ acre basin.
- Eliminates need for irrigation by using drought-tolerant native plants.

Social benefits

- Created public access to the Menomonee River and over 60 acres of park/open space in an area that had been off-limits to the public for 50+ years.
- Added 3 pedestrian/bicycle bridges and 7 miles of regional bike and pedestrian trails, linking greater Milwaukee and neighborhoods to the park, river, and valley.
- Triggered the use of the Menomonee River Valley as an outdoor science laboratory, which receives 10,000 student visits annually.

Economic benefits

- Increased development site property values by 1,400% between 2002 and 2009.
- Added over \$1 million in annual City property tax revenues.
- Created 2,000 new jobs by 2006. Estimate 5,000 new jobs by 2015.



REFERENCES

Wenk Associates: Menomonee Valley Partners

EPA Region 5 Phoenix Award for Excellence in Brownfield Redevelopment, 2009

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Dutch Kills Green (USA)



AFTER

OVERVIEW:

DESIGNER

WRT Margie Ruddick Landscape (MRL)

PROJECT TYPE

Streetscape

FORMER LAND USE

Greyfield

LOCATION

Long Island City, Queens
New York, USA

SIZE

5 ha

CLIMATE ZONE

Humid continental

BUDGET

\$45 million

COMPLETION DATE

2011



BEFORE

Description

Dutch Kills Green transformed the space at the end of the Queensboro Bridge where three subway lines, two elevated routes, and congested streets surrounded a parking lot. Officially called Queens Plaza Bicycle and Pedestrian Landscape Improvement Project, Dutch Kills Green is now a park nestled within an improved traffic network, which makes room for people, plants, and water among the layers of train structures, streets, vents and utilities. Through a major road realignment, the design disentangled circulation, introduced bikeways in green corridors, and improved pedestrian conditions. What was once an unclaimed area has become a beautiful green space that benefited the community, by not only reducing pollution but also enhancing the real estate value of the land.

Environmental benefits

- Prevents over 20.2 million gallons of stormwater from entering the city's combined sewer system annually, avoiding a projected \$3.4 million in future capital costs to upgrade stormwater infrastructure, such as constructing a larger combined sewer overflow tunnel.
- Reduces irrigation needs by 786,500 gallons per year through a native and adapted plant palette, saving \$3,500 in annual irrigation costs when compared to a standard lawn.
- Stores 4,698 lbs of carbon and sequesters 1,079 lbs of carbon per year in 174 new trees on-site and adjacent to the site.

Social benefits

- Increased bicycle traffic by 12% since the project was completed in 2011 with an average of 3,416 cyclists using the bicycle path per day. On average 7% of these users stop to use either the green or median seating areas.
- Helped reduce pedestrian and cyclist fatalities. Thanks to safety improvements like new pedestrian countdown signals, 2011 marked the first year that no deaths were recorded along Queens Boulevard, infamously known for many years as the "Boulevard of Death." This is down from a high of 18 pedestrian deaths in 1997.
- Reduces average ambient noise within the green by 23%. By removing two lanes of traffic that formerly bisected the space and adding lush vegetation, noise from traffic and the elevated rail lines decreased from a typical range of 85-101dB to 69-75dB.
- Attracts an average of 125 people per day in summer. Of these visitors, 92% engaged in recreational activities, 57% of which were also social activities.

Economic benefits

- Provides an estimated \$20,000-\$37,000 in net annual benefits to the City. This includes reduced energy consumption, improvements to air quality, carbon storage, and property value.
- Increases property value of surrounding properties. Between 2006 and 2013 — a period when the real estate value in the six largest U.S. Metro markets (including NYC metro) grew by only 8% — the estimated market value of properties surrounding Dutch Kills Green increased 37%.



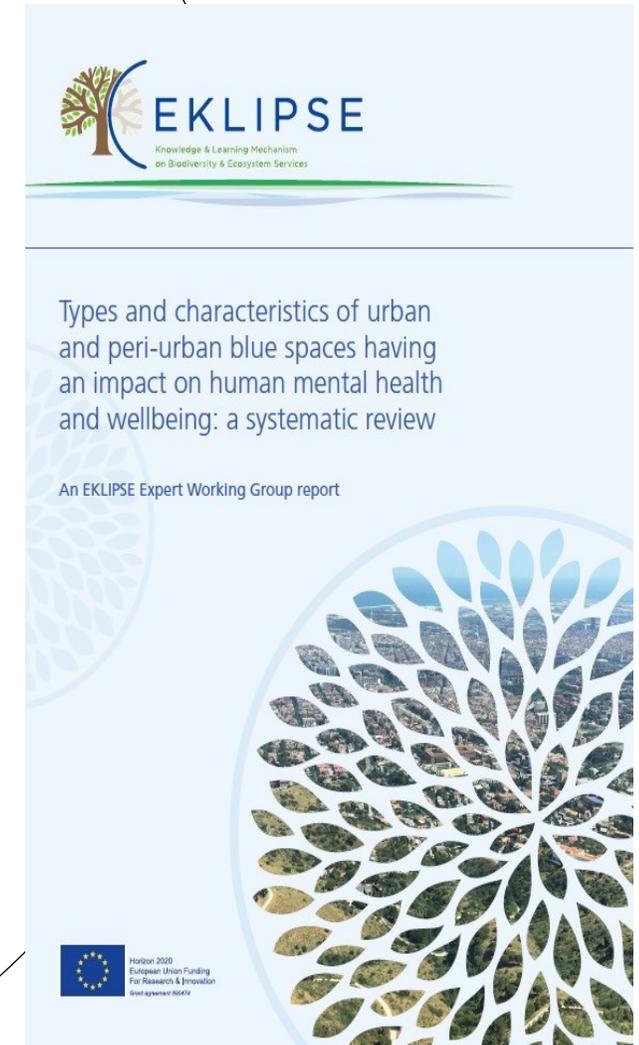
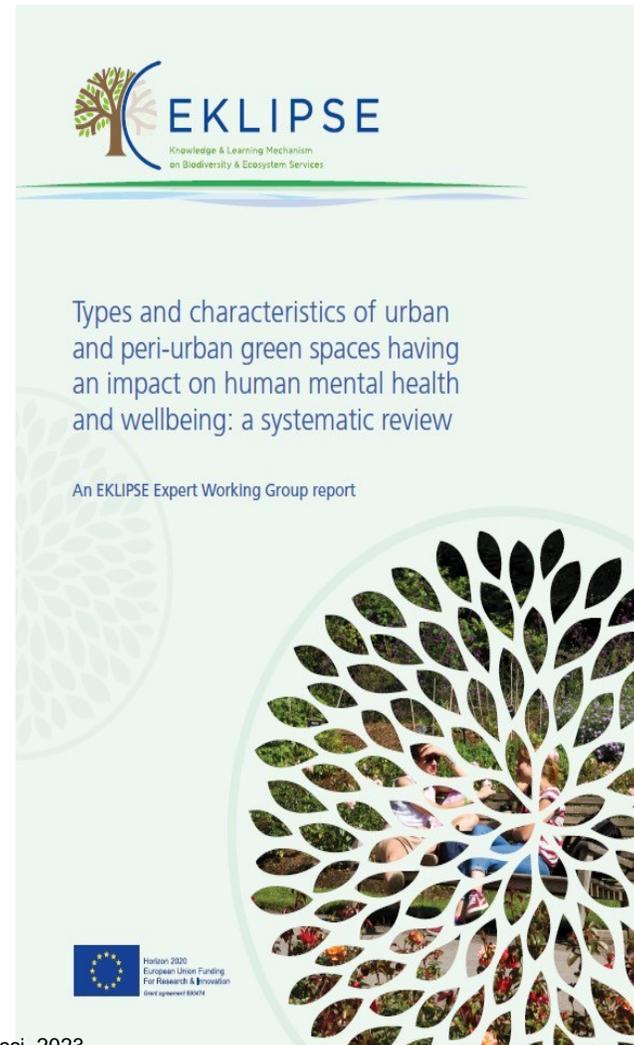
REFERENCES

American Institute of Architects New York Chapter, Merit Award, 2012
"In Queens, An Artistic Alteration", The Wall Street Journal (2012)
"Queens Plaza to Be Transformed into a Vibrant Green Oasis in Long Island City", Inhabitat (2011)

EKLIPSE Expert Working Group and the policy request

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¹Sapienza University of Rome; ²Fondation pour la Recherche sur la Biodiversité; ³National University of Singapore; ⁴Wageningen University & Research; ⁵Université Paris 8; ⁶Far Eastern Federal University; ⁷Forest Research; ⁸Durrell Institute of Conservation and Ecology; ⁹University of York; ¹⁰University of Antwerp; ¹¹German Centre for Integrative Biodiversity Research.



Key findings: The relevance of biodiversity

Urban green space, parks, forests, grassland, trees and other plants, the coast **all showed positive relations** with **mental health**.

Comparisons for green space showed highly mixed results, indicating that there is **not one “superior” type** of green space. **All green space matters.**

Dense vegetation may have a **negative** association with mental health.

More research is needed making direct **comparisons** between different green / blue space types and characteristics.

The **limited evidence** base for **inland waters** did not show pronounced effects on mental health.

More research is needed looking at actual **exposure** and taking **experiences** into account.

Green and Blue Spaces and Mental Health

New Evidence
and Perspectives for Action



Maria Beatrice Andreucci, 2023

Booklet and reports (and other relevant publications)
can be found at:

<https://www.researchgate.net/profile/Maria-Andreucci>

#5

Key concepts / Glossary

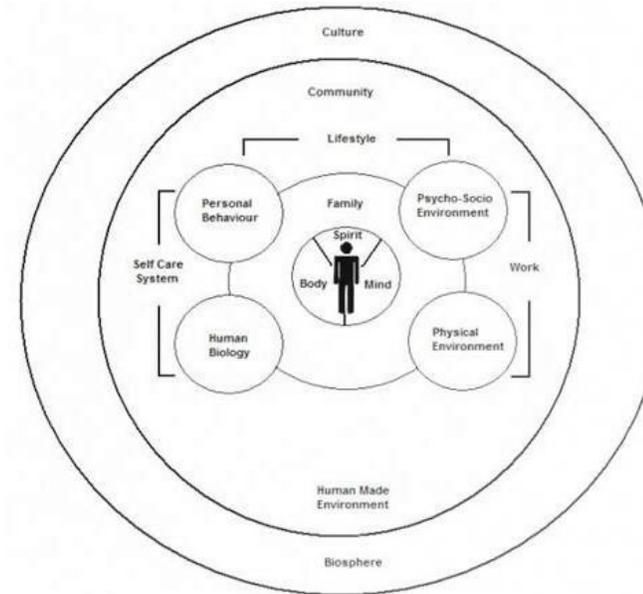


Health



Definition of Health

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.



Mental health

Definiton of Mental Health according to the World Health Organisation



Active travel

Active travel refers to forms of everyday (rather than recreational) travel that involve a degree of physical activity.

Chronic stress

This term describes a state of prolonged stress that may have a negative impact on health and wellbeing.

Determinants of health

Determinants of health describe the array of personal, social, environmental and economic factors, which have an impact on the health of individuals and communities.

Green space or open space

This term is not only applied to open spaces such as formal parks, but also to other predominantly green areas such as playgrounds and incidental open space.

Health

Describes a state of complete physical, mental and social wellbeing, and not merely the absence of illness and infirmity.

Health Impact assessments

Health Impact Assessments (HIAs) are used to judge the potential effects of a policy, programme or project on the health of a population. They also identify ways in which these effects can be managed.

Health inequalities

Health inequalities are preventable and unfair differences in health status between groups, populations or individuals. They exist because of unequal distributions of social, environmental and economic conditions within societies, which determine the risk of people getting ill, their ability to prevent sickness, or opportunities to have access to the right treatments.

Ecosystem and ecosystem services

Ecosystem was defined in the Millennium Assessment as, "a dynamic complex of plant, animal, and microorganism communities and the non-living environment, interacting as a functional unit. Humans are an integral part of ecosystems." Ecosystem services are the benefits provided by ecosystems, such as clean water and productive soils, as well as less tangible services such as tranquillity.

Green infrastructure

The Landscape Institute defines green infrastructure as a network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities. It is a natural, service-providing infrastructure that is often more cost-effective, more resilient and more capable of meeting social, environmental and economic objectives than traditional 'grey' infrastructure.

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Landscape

Landscape doesn't just include the wider countryside and green spaces, but urban spaces, such as civic squares and public realm. It is an area, as perceived by people, whose character is the result of the action and interaction of cultural and natural factors. This definition comes from the European Landscape Convention. This is a valuable and inclusive definition, covering outside spaces everywhere and at every scale.

Masterplan

In broad terms, a masterplan combines images and text that illustrate the ways in which a specific area will be developed and managed. A masterplan can range in scale from a large site to a whole town. It describes and maps development concepts and includes landscape, built form, infrastructure, circulation and services. It is based upon a thorough understanding of place and is intended to specify a structured and coherent approach to proposed physical changes.

Multifunctionality

Multifunctionality describes an approach to land use where a range of benefits are provided in one area, through careful planning, design and management. Multifunctionality is a key component of the green infrastructure concept, where landscape interventions are designed to deliver an array of benefits, such as recreational facilities, wildlife habitats and corridors and flood control simultaneously.

Nature or natural environment

Terms such as nature and natural environment are often used instead of landscape and refer to the more natural aspects of all environments.

Public health

Public health describes the science and art of promoting and protecting the physical and mental health and wellbeing of populations in order to prevent illness, injury and disability.

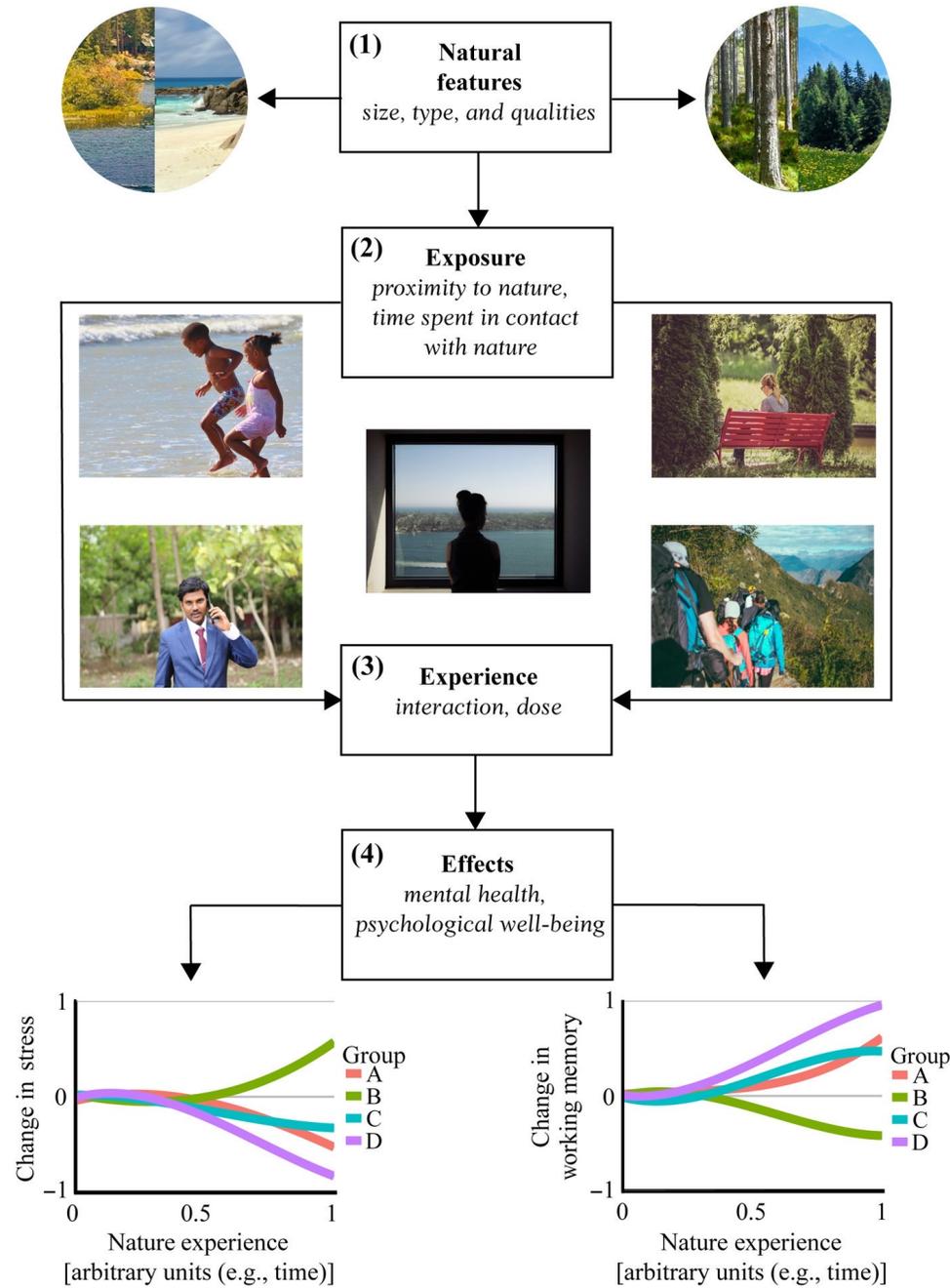
Sustainable Drainage Systems (SuDS)

Sustainable Drainage Systems (SuDS) mimic nature by managing rainwater close to where it falls, taking account of water quantity, water quality and amenity issues. SuDS can be designed to slow water down before it enters streams, rivers and other watercourses, provide areas to store water, allow water to soak into the ground or evaporate from surface water or transpire from vegetation.

Urban heat island effect

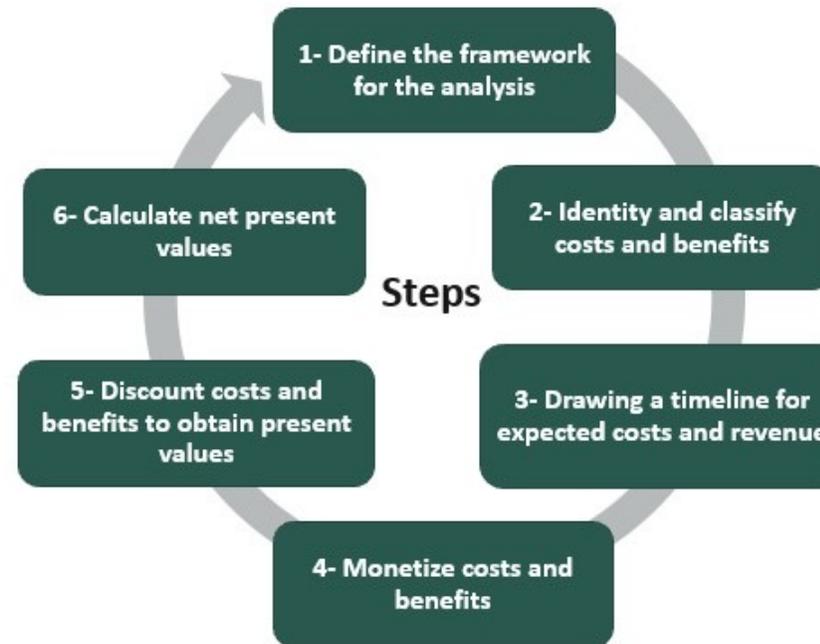
Urban areas tend to experience higher minimum temperatures compared to those recorded in rural areas, and maximum temperatures are also often higher. This urban heat island effect is generated by the combustion of fuels in factories, heating, and transport systems, and also the release at night of heat that has built up during the day in the fabric of the urban areas.

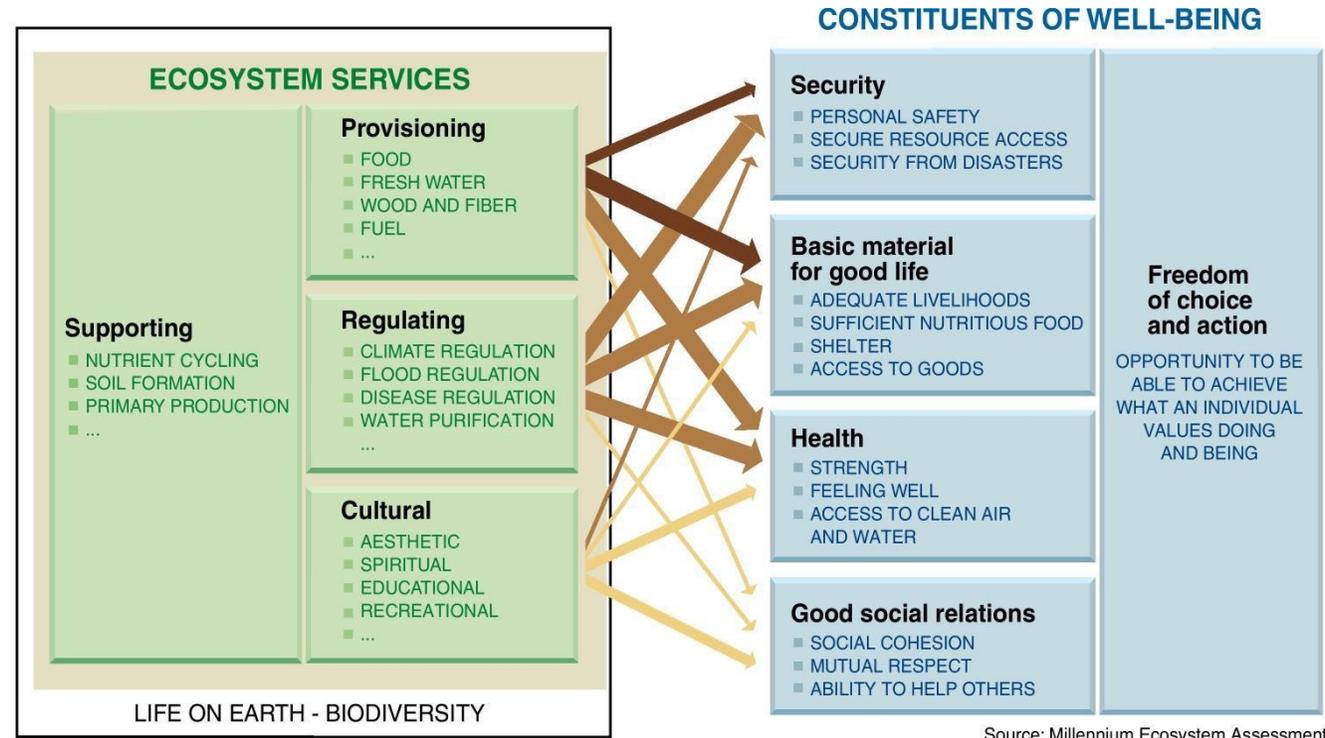
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Priority setting matters!

Cost-Benefit Analysis





ARROW'S COLOR
Potential for mediation by socioeconomic factors

- Low
- Medium
- High

ARROW'S WIDTH
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong

MEA

Guided Q&A Session on Health and Recreation

- 1) *Which **Threats / Challenges** do you consider most relevant with respect to preserving / enhancing Health and Wellbeing?*
- 2) *Which **Opportunities / Barriers** can you identify in your Country to progress towards the achievement of SDG-3 (and specifically Target 3.4)?*
- 3) *Which **Stakeholders / Interest Groups** can you identify?*

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The rapidly escalating and degenerating situation in Israel and Gaza awakens within us our deep compassion for our brothers and sisters of all faiths. Where lives are lost through military attack and response, humanity in its entirety is diminished.

We all grieve.