Promoting

walking and cycling

A toolkit of policy options

Active

World Health Organization

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Glossary

Accessibility	The ability to access places, services and/or destinations with ease. In the context of this report, the term accessibility is used to refer to the proximity (or distance) of facilities, as well as the absence of barriers to using walking and cycling networks. The term is also used in some specific contexts to refer to the design of facilities to ensure and enable their use by people of all ages and abilities (sometimes referred to as inclusive design).
Active travel, active transport or active mobility	Mode of travel in which the sustained physical exertion of the traveller directly contributes to their motion, for example walking, running, or using a bicycle, handcycle, manual wheelchair, or skateboard. Electric-assisted forms of micromobility, such as e-bikes and e-handcycles, can be considered active travel as they also require the user to contribute to motion.
Bicycle, or cycle, or handcycle	A human-powered or motor-powered pedal-driven, single-track vehicle, with two wheels attached to a frame, one behind the other. Cycles that have one, three or four wheels can also be referred to as cycles, with the latter two enabling people with balance problems to cycle. A handcycle is a cycle designed for peddling using hands.
Bike lane or cycle lane	A lane restricted to cycles. Often scooters, skateboards and rollerblades are allowed on these lanes as well.
Congestion pricing	A system of surcharging users of roads that are subject to congestion.
Cycling	The act of riding any type of cycle (including an e-bike or power-assisted cycle) or other non-electric form of wheeled transport such as a skateboard, a push-scooter or a hand-cycle.
Distracted driving	Any activity that could divert a person's attention away from the primary task of driving. Includes activities such as texting or talking on a cell phone while driving.
E-bike	Cycle of any type that is fully or partially electrically supported or power assisted.
Financing	The provision of upfront capital in the form of debt or equity that primarily funds the capital costs. Financing is paid back, in terms of interest, principal payments, dividends, and share sales, among others, with funding sources. Financing mechanisms originate with public entities, such as national governments or quasi-public development banks, or private banks, equity funds, and/or project developers.
Funding	The revenues or income that are generated by the project or other sources that are used, directly or indirectly, to cover the project's capital, operating, and maintenance costs. Funding can come from different sources such as direct users (e.g. user fees); government (through national or local tax revenues generated by particular land uses – e.g. commercial, industrial etc.); other sources (e.g. land value capture); or from private and philanthropic donors (e.g. carbon credits).
Inclusive design	Walking and cycling infrastructure that ensures accessibility, safety, and usability for people of all ages, abilities, and backgrounds. It considers diverse needs, including those of individuals with disabilities, older adults, and children, to create equitable and barrier-free environments.
Infrastructure	The physical structures of transport networks, public spaces, and supporting amenities that enable and promote walking and cycling, including roads, footpaths, cycle lanes, crossings, lighting, and associated facilities.

Kerb	Raised pavement situated along the edge of a roadway.
Land-use planning	The broad design and use of land or space for commercial, industrial, recreational, transport, conservation, agricultural, or a mix of such purposes. Several strategies and policies are used to ensure that the available land or space and resources in an urban or rural area are used efficiently so that people's needs are met, while safeguarding future resources. Land-use planning is required at different levels, including local, subnational, national and international.
Legislation	Any document that is legally binding. It includes, for example, laws enacted by the parliament (or legislative body); regulations or rules enacted by minister(s) or executive bodies; and circulars, protocols and any other legally binding document issued by authorized entities at international, national or subnational levels.
Mass transit	See public transport.
Mobility	The ability to reach a place, which may be enhanced by accessibility. In the context of this report, mobility refers to the ability of individuals to move safely and efficiently through urban environments using various transport modes, including walking and cycling.
Monitoring	Systematic and continuous collection and analysis of data on activities of a programme or intervention to determine if planned activities are implemented as planned, addressing any implementation problems and identifying any adjustments or improvements needed in order for the intended objectives to be achieved.
Multimodal transport planning	Integration of various modes of transport, such as walking, cycling, private car use, and public transport including trains, into transport planning.
Non-motorized transport	Any transport mode that does not require a motor to generate energy. Included in this term are walking, cycling, skateboarding, scootering (non-electric), manual wheelchair use and using animal-drawn or human-drawn carts.
Public transport	Systems of transport consisting of services and routes that are used for travel by the general public as passengers as opposed to an individual. These group travel systems are also referred to as mass-transit and high-capacity transit services in some countries. The following are the public transport modes found in different countries: buses; commuter trains; light rail; trams; subways; cable cars; taxis; streetcars and trolleys; passenger service motorcycles and bicycles; van pool services; and ferries and water taxis.
Public education or communication campaigns	An evidence-based strategic approach to increase knowledge and change attitudes and behaviours in a large population or population segment using various mass-communication strategies (e.g., TV, social media, billboards), with links to community-based programmes and environmental improvements to enable and support behaviour change.
Road	A thoroughfare, route, or way on land between two places that has been paved or otherwise improved to allow travel by foot or some form of transport including a motor vehicle, cart, bicycle, or horse.
Road safety	Approaches, strategies and measures used to prevent people from being killed or seriously injured in road traffic collisions.
Road traffic injuries	Fatal or non-fatal injuries sustained as a result of a road traffic crash.
Road-user behaviour	Actions exhibited by people who travel on the road that either increase or reduce the risk of a road-traffic collision occurring. Examples of road- user behaviour associated with increasing the likelihood of a road traffic collision are driving under the influence of alcohol, and speeding. The focus of a behaviour-change approach is to influence determinants of these behaviours to decrease the likelihood of a road-traffic collision occurring.

Safe system approach	A safe system approach integrates a range of measures designed to minimize risk and reduce harm, recognizing that road transport operates as a complex system and emphasizes the critical interaction between humans, vehicles, and road infrastructure, ensuring that these elements work together to achieve the highest possible level of safety for all.
Sidewalk, footpath, footway, or pavement	A path for pedestrians often located alongside a road. Sidewalks or footpaths are mostly paved, providing a smooth and durable surface for walking. Footpaths can also be unpaved and consist of natural materials like mulch, dirt or gravel.
Speed limit	The maximum (or minimum in some cases) speed at which road vehicles may travel legally on particular stretches of road.
Speed management	A method or an approach used to keep speeds to appropriate levels relying on different and complementary strategies, including establishing and enforcing speed limit laws; building or modifying roads that calm traffic (e.g. speed humps and bumps); and requiring car makers to install new technologies to help drivers keep to speed limits.
Stakeholders	Actors (persons or organizations) with a vested interest in the policy being promoted. These stakeholders, or "interested parties", can usually be grouped into the following categories: international/donors; national political actors (legislators, governors); public actors (ministry of health, social security agency, ministry of finance etc.); labour actors (unions, medical associations); commercial/private for-profit, nonprofit actors (nongovernmental organizations – NGOs, foundations); civil society; and potential walkers, cyclists and users of other active transport modes.
Star rating (infrastructure)	A system of measuring the safety performance of roads and road networks based on road-inspection data, which includes the assessment of built-in safety attributes for different categories of road users (vehicle occupants, motorcyclists, cyclists and pedestrians). One example is the iRAP star rating system with five stars corresponding to the highest level of safety. For details on the full model for all road users and more urban and rural examples, see https://irap.org/rap-tools/infrastructure-ratings/star-ratings.
Street	A public thoroughfare in a built environment.
Sustainable transport	The provision of services and infrastructure for the mobility of people and goods in a safe, affordable, accessible, equitable, and resilient way, while minimizing carbon and other emissions and environmental impacts. Sustainable transport mitigates climate change, optimizes social and economic benefits, and enhances health outcomes.
Traffic calming	Strategy aimed at significantly reducing vehicle speeds in an urban neighbourhood or on an urban arterial road, in order to protect vulnerable road users and residents and improve the quality of life of those living in the neighbourhood.
Vehicle (motor vehicle)	Any power-driven vehicle that is normally used for carrying persons or goods by road.
Walking	The act of moving where a person travels on foot. It includes all forms of pedestrian mobility, such as assisted walking with crutches and rollators. Using a wheelchair is considered to be an assisted form of walking too. For the purpose of this document, jogging and running are included under "walking" as the required infrastructure is similar.

This glossary of terms has been compiled from relevant source documents listed in the reference list and cited in the body of the text. Some definitions have been adapted to ensure that all forms of movement or travel are reflected, including adapted forms used by people with disability, older persons, to ensure inclusivity.

Executive summary

Walking and cycling are foundational modes of transport and physical activity with the power to transform health, mobility, and the liveability of communities. This WHO toolkit presents a comprehensive policy framework to help countries unlock the wide-ranging benefits of walking and cycling. Developed for policy-makers and stakeholders across sectors – including health, transport, urban planning, environment, and education – it offers evidence-based policy options and implementation guidance to promote safe, accessible, and inclusive walking and cycling environments.

Why walking and cycling matter

Walking and cycling deliver substantial co-benefits across multiple policy agendas:

Health:
They are accessible forms of physical activity that help reduce the risk of noncommunicable diseases (NCDs), support mental well-being.

Environment:
Replacing short, motorized trips with walking or cycling can significantly reduce urban emissions, improve air quality, and mitigate climate change.

Road safety:
Provision of well-designed safe infrastructure can reduce and prevent road traffic injuries and death.

Economy:
Investment in active transport boosts local economies, creates jobs, reduces health-care costs, and supports tourism.

Equity:
Active transport is often the only affordable option in low-resource settings, highlighting the need for safe infrastructure as a matter of social justice.

Mobility:
Walking and cycling enhance multimodal transport by providing efficient first- and last-mile connectivity to public transport systems.

Urgency for action

Despite their value, walking and cycling remain under-prioritized in policy and planning. Globally, infrastructure is inadequate – only 0.2% of reported road length includes cycling lanes, and the majority of roads are unsafe for pedestrians. Vulnerable groups, including women, children, older adults, and those with disabilities, are disproportionately affected by poor infrastructure and unsafe streets.

Global goals such as the Sustainable Development Goals, the WHO Global Action Plan on Physical Activity, and the Global Plan for the Decade of Action for Road Safety call for urgent, coordinated action to promote walking and cycling as part of healthy, sustainable, and equitable transport systems.

Purpose and scope of the toolkit

This toolkit is part of WHO's technical support package to help countries develop or strengthen policies that support walking and cycling for transport and recreation. It provides:

- **a rationale for integrating walking and cycling across sectors;**
- **seven priority policy action areas;**
- **practical steps and real-world case studies;**
- **guidance on monitoring and evaluation.**

The resource is adaptable to varying national and local contexts and emphasizes multisectoral collaboration, inclusivity, and integration into broader health and sustainability goals.

Seven policy action areas

1. **Integrate walking and cycling into all relevant policies**
   Embed walking and cycling objectives across transport, health, environment, education, and tourism policies. Establish clear, measurable targets and cross-government coordination mechanisms.

2. **Provide safe and connected walking and cycling networks**
   Develop well-connected, well-maintained infrastructure that links homes to key destinations (e.g. schools, transit, workplaces). Integrate green spaces and apply inclusive and sustainable urban design principles.

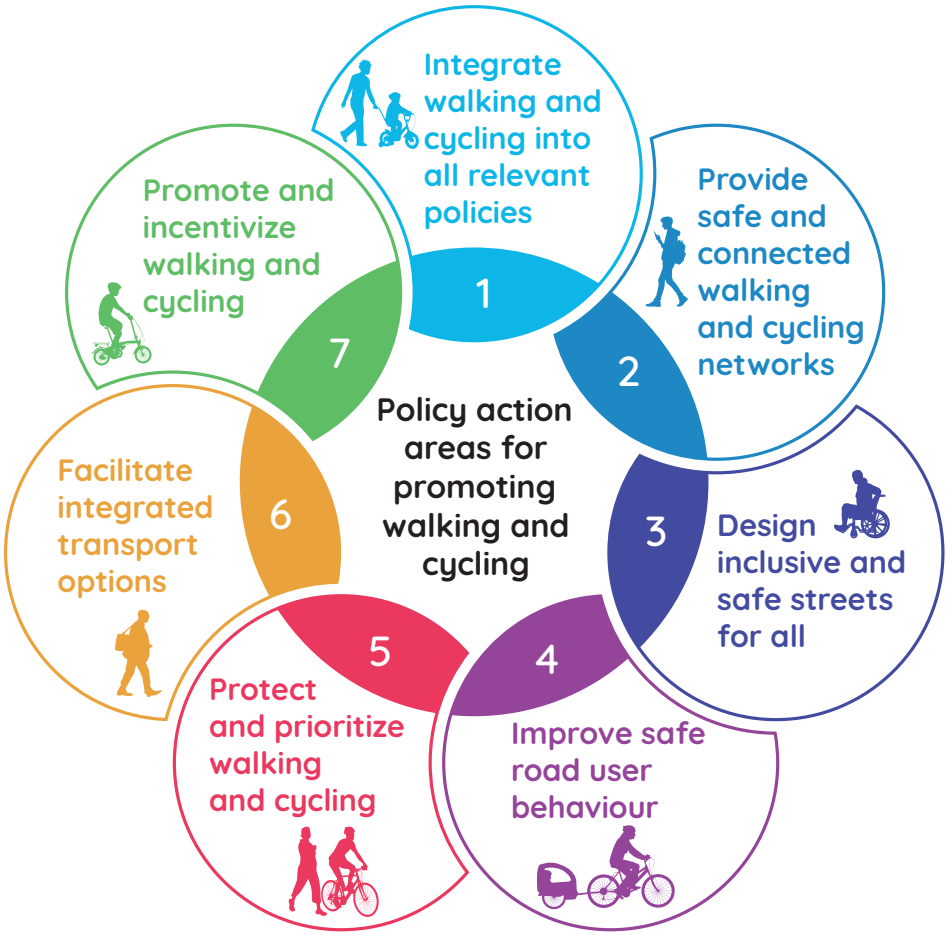
3. **Design inclusive and safe streets for all**
   Use human-centred design principles to create streets that accommodate all users, including pedestrians and cyclists of all ages and abilities. Implement safe system approach to improve road safety including best practice legislation to reduce speed limits where necessary.

4. **Improve safe road user behaviour**
   Enforce speed limits, tackle distracted and impaired driving, and promote safe use by all road users.

5. **Protect and prioritize walking and cycling**
   Create, maintain and protect allocation of road space to walking and cycling, implement pedestrian zones, and enforce parking regulations.

6. **Facilitate integrated transport options**
   Ensure walking and cycling are part of a seamless transport experience through integration with public transport and shared mobility services.

7. **Promote and incentivize walking and cycling**
   Create a culture of walking and cycling through communication campaigns, events, financial incentives, and workplace and school programmes.



Creating an enabling environment

Implementation success depends on several key enablers including strong governance and intersectoral coordination; community engagement and co-design; capacity building and skills development; effective advocacy and communications; robust legislation and regulatory frameworks; and sustainable funding and financing mechanisms.

Monitoring progress

The toolkit provides guidance for data collection, target setting, and tracking progress. Countries are encouraged to use WHO tools to assess current policies, measure walking and cycling levels, and evaluate the impact of interventions.

Conclusion

By investing in walking and cycling, governments can accelerate progress on multiple fronts: healthier populations, more sustainable cities, equitable access, and climate resilience. This toolkit provides the roadmap for translating commitment into action.

The time to act is now.

Introduction

Walking and cycling are integral to most people's daily lives. Nearly every journey begins and ends with walking, and cycling is among the most efficient and sustainable forms of transport. Beyond their role in mobility, walking and cycling are also important and enjoyable forms of active recreation and exercise, and popular ways for people to stay fit and healthy *(1)*. Both activities are simple, cost-effective ways to achieve recommended physical activity levels, reduce the risks of noncommunicable diseases (NCDs) and improve mental health *(2)*.

Growing recognition of the role played by walking and cycling across policy domains can be seen in the numerous policy statements, guidelines, frameworks and recommendations that reference walking and cycling, developed by many UN agencies (including WHO), international organizations, and NGOs. Collectively, these resources provide valuable direction, support, and tools to advocate for walking and cycling to be prioritized in policy decisions and funding allocations related to urban health, climate change, air pollution, ageing, road safety, health promotion. They also provide specific tools designed to promote physical activity.

Two of the key WHO frameworks in this set of tools are the Global Action Plan on Physical Activity (GAPPA) 2018–2030, which provides a set of recommended policy actions to guide countries' efforts to increase physical activity, including through promoting walking and cycling *(1)* (Box 1); and the Global Plan for the Decade of Action for Road Safety 2021–2030 *(3)*, with which many of the GAPPA policy recommendations align (Box 2). The Global Plan offers countries a set of policy actions to achieve healthier, safer and more environmentally sustainable communities through the promotion of walking and cycling. For example, replacing the use of personal motor vehicles with increased levels of walking and cycling can reduce traffic congestion and noise, improve urban air quality, and promote physical and mental well-being.

Realizing these benefits requires the provision of safe, comfortable environments to enable and encourage walking and cycling. However, research from countries that audit their road networks shows that most roads continue to be built to cater for the growing number of motor vehicles rather than pedestrians and cyclists, and that the total length of reported cycle lanes equates to only around 0.2% of total reported road length *(4)*. This infrastructure gap disproportionately affects less-advantaged groups, even in high-income countries, where poor conditions can make walking and cycling hazardous, and may explain why, globally, pedestrians and cyclists account for over a quarter of all road traffic fatalities and in some regions nearly 40%, highlighting the urgent need for safer infrastructure *(4)*.

A recent survey in 48 countries showed that most people see themselves as pedestrians at one time or other *(5)*. Yet concerns about road safety, personal security, and lack of connectivity often deter people who might otherwise choose walking as an active mode of transport. With the global urban population expected to grow significantly, particularly in Africa and Asia, investing in sustainable transport options is critical for promoting health, social well-being, and economic benefits *(6)*.

The good news is that change is possible and is already happening. The COVID-19 pandemic demonstrated how quickly urban policies and the behaviour of individuals can adapt. Many cities responded to the crisis by reallocating road space to create more cycling lanes, resulting in a surge in walking and cycling *(7)*. This shift shows that with the right infrastructure and policy support, walking and cycling can become safe, convenient, and preferred options for travel and recreation for many people.

The movement towards walking and cycling-friendly environments is gaining momentum, showcasing how cities worldwide can shift from vehicle-centric to people-focused spaces. But more action is needed. By prioritizing infrastructure and policies that support walking and cycling, governments can address multiple policy agendas, including urban health, NCD prevention, road safety, and healthy ageing. Investing in these modes of transport not only saves lives but also contributes to creating vibrant, healthy, and sustainable communities.

Box 1. ***Global Action Plan on Physical Activity 2018–2030***

The Global Action Plan on Physical Activity (GAPPA) 2018–2030 sets out a global vision and target to achieve a **15% relative reduction in physical inactivity among adults and adolescents by 2030**. To reach this goal, the plan outlines 20 policy actions across four strategic objectives:

- **ACTIVE SOCIETIES:** Increase knowledge and shift social norms and attitudes towards physical activity.
- **ACTIVE ENVIRONMENTS:** Create better places and spaces that enable all people to be physically active.
- **ACTIVE PEOPLE:** Ensure provision of inclusive programmes and services that provide physical activity opportunities for people of all ages and abilities.
- **ACTIVE SYSTEMS:** Strengthen governance and data systems to implement effective and coordinated actions.

These objectives emphasize the need for policy, infrastructure, and programmes across key settings to make physical activity accessible, inclusive, and integral to daily life. Policy action to maintain and increase current levels of walking and cycling for recreation and transport is a key approach for many countries as they are among the simplest, most accessible and sustainable ways to increase physical activity. GAPPA underscores the importance of policies that support safe walking and cycling as a choice for everyone, making them an everyday activity and cornerstone of active and healthy lifestyles.

Successful implementation of GAPPA's policy recommendations requires a multisectoral approach involving health, sport, education, transport, urban design, civil society, academia, and the private sector. WHO supports country implementation through its "ACTIVE" technical package (of which this toolkit is a part), a series of "how-to" toolkits that offer detailed guidance on implementing policy recommendations across different settings and throughout the life course (see Annex 4).

Box 2. ***Global Plan for the Decade of Action for Road Safety 2021–2030***

The Global Plan for the Decade of Action for Road Safety 2021–2030 sets the target to **halve road traffic deaths and injuries by 2030**. It emphasizes the urgent need for policies and infrastructure to protect vulnerable road users (including pedestrians and cyclists), who account for more than half of all road traffic fatalities globally. The plan promotes a safe system approach, which puts people and safety at the core of mobility systems to create safer road environments for all users by prioritizing safer roads, vehicles, and road user behaviour, as well as enhanced post-crash care.

Walking and cycling are not only sustainable and healthy modes of transport but are also essential to reducing the global reliance on motorized vehicles. A modal shift toward walking, cycling, and public transport is a cornerstone of achieving the plan's road safety goals while simultaneously addressing physical inactivity and environmental sustainability. For this shift to occur, policy action must focus on creating safe and accessible environments through investments in sidewalks, protected cycle lanes, pedestrian crossings, and traffic-calming measures. By strengthening the integration of walking and cycling policies into broader road safety strategies and climate mitigation strategies, governments can reduce fatalities, encourage active transport, and improve the overall quality of life in communities worldwide.

Purpose of this toolkit

This toolkit is part of a series developed by WHO to help countries implement policies and practices to improve levels of physical activity, road safety, and urban health. In particular, countries can use this toolkit to develop new policies and strategies to enable, promote and protect walking and cycling in cities and communities or to review and improve existing approaches. Implementing the policy options in this toolkit will help countries make a vital contribution to achieving a healthier, more sustainable and more active world (Box 3).

Importantly, this resource aligns with the strategic objectives set out in the Global Action Plan on Physical Activity 2018–2030 *(1)* and the Global Action Plan for Road Safety 2021–2030 *(3)*. These action plans respectively aim to increase levels of physical activity and reduce road deaths and injuries. The toolkit also aligns with guidance provided by many other UN agencies and international entities who share the common goal of raising levels of safe walking and cycling, whether for transport or recreation.

While this resource is aimed at policy actions for both walking and cycling, it fully recognizes that walking and cycling are distinctively different behaviours and that the policy needs and actions for each can vary. However, it was decided to provide a single resource addressing these two activities together because of the many overlapping policy options that can effectively support them both.

What does the toolkit provide?

This toolkit presents a compendium of policy options for walking and cycling, drawing on evidence and recommendations from a variety of UN agencies, WHO guidelines, and other international documents. Annex 1 details the process undertaken to develop this toolkit. By consolidating this information, the toolkit highlights the multiple benefits that promoting and enabling safe walking and cycling for recreation and transport can bring to individuals, communities, the environment, and the economy.

The toolkit outlines seven strategic policy options for countries to consider implementing. Collectively these policy options – flexible enough to adapt to all contexts – aim to enable safer walking and cycling for people of all ages and abilities, and to support maintaining and/or increasing levels of walking and cycling either for transport or active recreation in countries worldwide. Case studies are included to showcase real-world examples of how these policy options are being successfully put into practice. These have been selected to provide examples of diversity both in terms of country income levels and geographic distribution. In addition, Section 4 provides guidance on data gathering to support robust monitoring and evaluation of policy implementation.

Box 3. The benefits of walking and cycling for physical and mental health

The value of walking for health

Walking is the most common form of physical activity across all ages and provides many of the physical, social and mental health benefits associated with overall physical activity, even at a moderate pace. It stands out for its accessibility – it is free, requires no special skills or equipment for most people, and is medically safe for almost everyone. Walking is particularly enjoyed by older adults as their preferred form of exercise. It is also accessible to many people with disabilities, including those with sensory or intellectual disabilities and those using crutches, walkers or rollators. For wheelchair users, "wheeling" serves as a valuable substitute for walking, especially for those able to self-propel.

The value of cycling for health

Cycling is an excellent form of physical activity and transport that can be adapted to different fitness levels and ages. Like walking, cycling is accessible and can be incorporated into daily routines, such as commuting or short trips or for recreation and exercise. It requires minimal equipment – a bike and a helmet – and offers the flexibility to be performed at various intensities. Cycling is also beneficial for people with joint issues, as it places less stress on the joints compared to other physical activities and sports. Additionally, cycling can be adapted for people with disabilities, through options such as handcycles and tricycles. It promotes independence (in particular for children and adolescents) and mobility while offering an enjoyable way to explore the outdoors or to wind down after work or school.

Who is the toolkit for?

This toolkit is designed for policy-makers at the national, subnational and local levels, advocating a multisectoral approach to promoting safe walking and cycling. Governments, international agencies, civil society organizations, the private sector, and other stakeholders are all invited to use this toolkit as a guiding document for collaborating in planning, implementing, and evaluating efforts to enhance these active modes of transport and recreation.

Developed through a collaborative and consultative process with contributions from experts across diverse sectors, this toolkit is designed to inspire and be used by the following:

- **Government ministries, agencies and local authorities**, including those responsible for roads (road design and infrastructure, traffic management and road safety) and transport, urban planning, health, environment, recreation, education and local or municipal infrastructure and services. The toolkit is particularly useful for decision-makers responsible for developing and implementing policies related to urban planning, transport and air quality/climate mitigation, as well as for those integrating physical activity into their NCD-prevention and health promotion strategies and actions plans. It can also help in setting national targets, monitoring progress, and reporting outcomes.
- **Academic and research institutions/road safety bodies**, including universities, research institutes, public health organizations and road safety organizations who can use the toolkit for research, advocacy, and policy development, providing evidence-based insights to support walking and cycling initiatives.
- **Government lawyers**, including those working in or supporting the ministries, agencies and authorities listed above, and those engaged in drafting legislation.
- **Civil society organizations**, including groups dedicated to promoting walking and cycling and other organizations advocating for improved urban transport and public health.
- **UN agencies and international organizations**, who guide and support initiatives aimed at enhancing safe walking and cycling worldwide, in line with broader health and environmental objectives.
- **Advocacy groups**, including organizations working to improve transport, air quality, and public health who can use this toolkit to inform their initiatives and contribute to a more integrated and sustainable approach to urban mobility.

A note on terminology

Inclusiveness

Although the terms walking and cycling are used throughout this document, they are intended to encompass alternative forms that incorporate wheeled mobility, particularly for individuals living with disabilities. Therefore, in this toolkit, the terms walking and cycling should be understood to include wheeling (e.g., using mobility aids) as well as other forms of active transport, such as push-scooters and rollerblades. Policies and interventions proposed in this toolkit to support walking and cycling are likely to benefit users of all forms of active transport, especially individuals with disabilities. However, additional design considerations may be necessary to ensure that facilities are inclusive and accessible for people with a wide range of abilities. While the infrastructure needs for walking and cycling are related, they are also distinct. Understanding the unique requirements for both forms of movement, within the local context, is essential.

Active travel and active transport

Walking and cycling are distinct forms of mobility and are sustainable modes of transport that incorporate sustained physical effort that contribute to overall levels of physical activity. The terms "active travel" and "active transport" are increasingly used to collectively describe these two behaviours. Walking and cycling are also referred to as "non-motorized" or "slow modes" of transport. In this report, the term "active travel" is used to refer inclusively to all forms of walking and cycling, as detailed in the glossary.

Streets and roads

The use of "streets" and "roads" varies across professional domains and reflects distinct preferences. In the road transport and road safety sectors, the term "road" is predominantly used. Conversely, within advocacy movements, "street" is favoured, as seen in phrases like "streets for people" and "safe streets". This toolkit employs both terms interchangeably, selecting the one most appropriate to the context in which it is used.

Levels of governance

Many countries have multi-level governance systems that allow policy and decision-making at national, regional (regions, provinces, departments, counties, etc.) and local (such as municipal, city or town, district, borough, neighbourhood etc.) government level. This document uses national, subnational and local to refer to different levels of government and they should be interpreted by readers according to local context.

The glossary at the beginning of this toolkit provides descriptions and definitions of other key terms.

Section 1: **Why increasing walking and cycling is important**

Walking and cycling provide numerous benefits as sustainable transport options and forms of exercise and active recreation *(8, 9)*. However, despite their significant potential to contribute to health, well-being, and urban mobility, they are often overlooked in transport strategies and undervalued in policy decision-making and little internationally comparable data exist on the current status of walking and cycling as active transport. This paradox underscores the urgent need to advocate and implement policy actions to create environments that support active transport and equip policy-makers with compelling evidence to invest in these mobility modes.

Walking and cycling globally: a snapshot

Although it is well recognized that walking and cycling patterns vary across cities and countries, accurately assessing and comparing between countries remains a challenge. Inconsistent data collection methods, limited survey coverage, and non-comparable metrics hinder the ability to make precise international comparisons. Furthermore, the use of different definitions and measurement approaches further complicate efforts to establish reliable estimates of walking and cycling prevalence. To date, much of the comparative research on cycling behaviour using travel surveys has been concentrated in Western Europe and North America *(10)* with international comparisons often limited to prevalence estimates that provide little insight into user demographics or trip characteristics *(11)*.

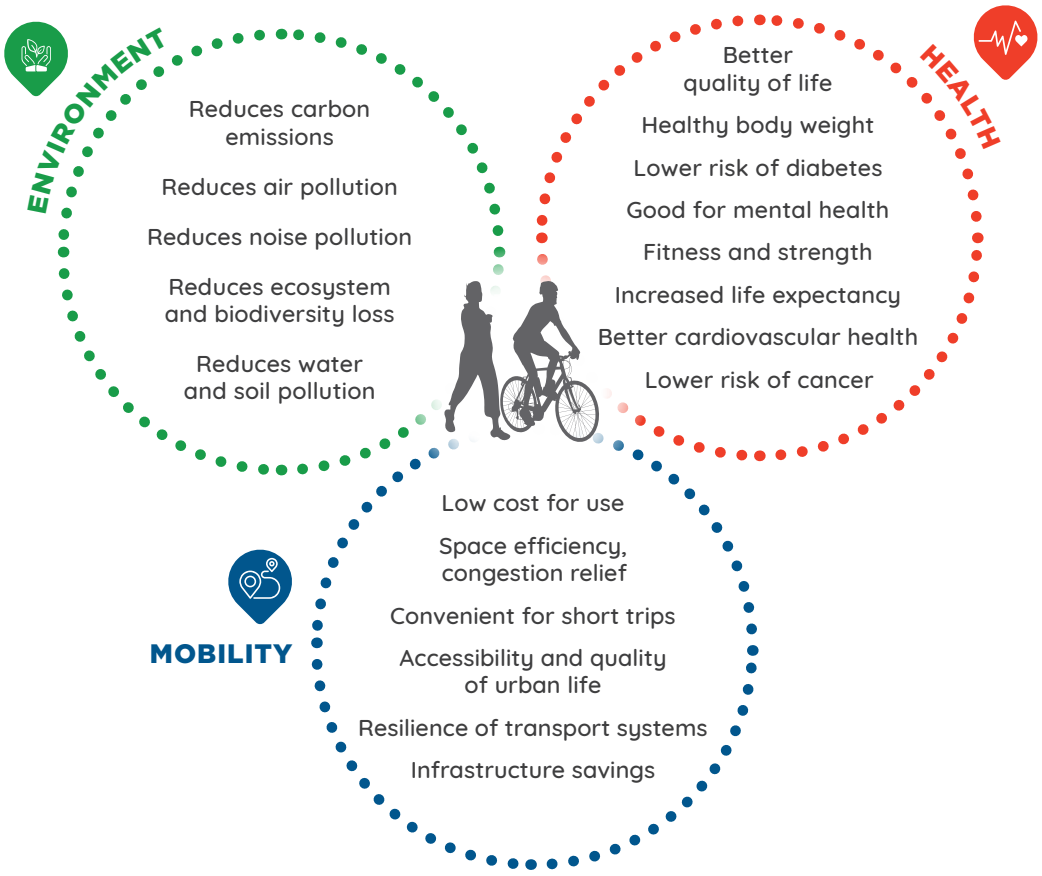
Nevertheless, available data reveal notable trends. For instance, a study of 35 cities across 17 countries and six continents highlighted substantial differences in cycling-mode share. In cities in the United States of America and the United Kingdom of Great Britain and Northern Ireland, only around 2% of trips shorter than 3 km were made by bicycle, compared to 29% in the Netherlands (Kingdom of the), 11% in Japan, and 9% in Germany *(12)*. Similar patterns have been observed elsewhere *(13)*. In Europe, the combined contribution of walking and cycling as the primary mode of transport varies widely, ranging from nearly 50% in Paris to below 5% in Athens and Rome *(8)*. The potential for increased uptake of walking and cycling is evident in many European cities. For example, in Austria, over 40% of trips are under 5 km, in Switzerland more than 60% of trips are under 10 km, and in the United Kingdom of Great Britain and Northern Ireland, over 50% of trips range between 2–3 km – yet these journeys are frequently made by car *(8)*.

Another global study spanning 104 countries using the WHO Global Physical Activity Questionnaire (GPAQ) found that walking and cycling for travel accounted for approximately 35% of the total physical activity among adults who reported engaging in some form of physical activity *(14)*. The contribution of walking and cycling (i.e. active travel) to overall levels of physical activity was important but varied substantially by country. Higher shares were observed in Malawi and Uganda compared with in Mexico, Sri Lanka, and the United States *(14)*.

In many African cities, walking is the predominant mode of transport, with approximately 78% of people walking for travel every day *(6)*. On average, individuals spend 55 minutes per day walking, though infrastructure remains inadequate. Data from nine African countries revealed that 74% of roads lack footpaths, 92% have no crossings, and 48% are poorly signed and maintained *(6)*. Additionally, differences in walking and cycling participation exist across gender, age groups, and socio-economic backgrounds – for example, women engage in relatively more travel-related walking activity than men *(15)*.

While there is a need for improved data to obtain a more comprehensive understanding of walking and cycling trends, variations between countries, cities and populations are likely influenced by multiple factors *(16)* including topographical and climatic conditions, policy decisions affecting infrastructure, the provision of supportive environments, and socio-cultural factors. Addressing these determinants through the evidence-based policy options outlined in the following sections of this report will enable all countries to maximize the health, environmental, and economic benefits of increased and safer walking and cycling (Fig. 1) *(8)*.

Fig. 1. ***The multiple health, environment and transport benefits of walking and cycling***



Source: Adapted from Walking and cycling: latest evidence to support policy-making and practice. Copenhagen: WHO Regional Office for Europe; 2022.

1.1 Walking and cycling can help achieve the 2030 Sustainable Development Goals

As countries work towards achieving the Sustainable Development Goals (SDGs), it is crucial to invest in effective, cross-cutting measures that deliver broad impacts across multiple targets. Promoting walking and cycling is one such measure as it contributes to several SDGs, particularly:

- **SDG 3.4: Reduce premature mortality from NCDs by one-third through prevention, treatment, and the promotion of mental health and well-being.**

  Regular walking and cycling can increase levels of physical activity, contribute to the prevention of NCDs and improve mental and physical health and well-being – for more, see section 1.2.

- **SDG 3.6: Halve the number of global deaths and injuries from road traffic accidents.**

  Pedestrians and cyclists are some of the most at-risk road users, so implementing actions to improve road safety can reduce and prevent roads deaths and injuries – for more, see section 1.3.

- **SDG 3.9: Substantially reduce deaths and illnesses from hazardous chemicals and air, water, and soil pollution.**

  Walking and cycling are forms of clean mobility and when they replace motorized transport trips can contribute to reducing air and noise pollution – for more, see section 1.4.

- **SDG 11.2: Provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, especially for those in vulnerable situations, including women, children, persons with disabilities, and older adults.**

  Prioritizing and promoting walking and cycling can help ensure that everyone, regardless of income, can reach essential health services, education and jobs, and thereby contribute to reducing health, social, and economic inequalities – see section 1.5.

- **SDG 11.6: Reduce the adverse per capita environmental impact of cities, focusing on air quality and municipal waste management.**

  Walking and cycling can reduce car trips, cut carbon emissions, improve air quality, and lower noise pollution, thereby making cities cleaner, healthier and more sustainable – see section 1.4.

- **SDG 13.2: Take urgent action to combat climate change, including integrating climate change measures into national policies, strategies, and planning.**

  Prioritizing walking and cycling as preferred modes of transport in national policies, strategies, and planning supports sustainable, low-carbon transport systems that can mitigate the impact of climate change and reduce dependency on fossil fuels – see section 1.4.

Creating safe, walkable, and cyclable communities also indirectly support many other SDGs by enhancing equitable access to health care, education, employment, and essential services, particularly for vulnerable groups. By prioritizing policies that promote walking and cycling, national governments, cities, and local municipalities can meet a wide range of policy goals. Collaborative efforts across disciplines and sectors are essential to maximize the impact of these actions, helping to create healthier, safer, and more sustainable communities.

1.2 Walking and cycling improve physical and mental health

Walking and cycling are two of the most effective and accessible forms of physical activity that can significantly improve both physical and mental health (Fig. 2) *(8)*. Unlike more structured forms of exercise, walking and cycling can easily be incorporated into daily routines, making them practical options for people of all ages and abilities. Walking is almost no cost, requires no special skills, and can be done alone or in groups, almost anywhere. Cycling can be low cost, requires only the skill to ride a bicycle, and can provide an enjoyable form of individual or group active recreation and exercise. These attributes make walking and cycling ideal activities for promoting widespread physical activity.

Regular physical activity, including walking and cycling, plays a critical role in preventing many of the leading causes of death, such as heart disease, stroke, cancer, and type 2 diabetes *(2)*. Walking and cycling can be powerful tools for reducing the growing mortality burden – currently 41 million deaths per year – caused by NCDs *(17)*. Studies estimate that 3 to 5 million premature deaths due to NCDs could be prevented each year if more people engaged in regular physical activity such as walking and cycling. Furthermore, recent analyses suggest that up to 500 million new cases of NCDs and mental health conditions could be prevented by 2030 through increased physical activity, potentially saving global public health systems up to US$ 300 billion *(18)*.

In addition to physical health benefits, walking and cycling can have a profound impact on improving mental health. They are known to reduce symptoms of anxiety and depression, improve mood, and boost cognitive function *(2)*. Both activities promote general well-being and can be especially beneficial for older adults by maintaining muscular strength and balance. The risk of falls and related injuries among older adults can be reduced by engaging in regular physical activity *(19)*.

Yet despite the numerous health benefits of walking, cycling, and regular physical activity, a third of adults *(20)* and four-fifths of adolescents *(21)* do not meet current physical activity guidelines. Women and girls are less active than men and boys in nearly all countries, further perpetuating health inequalities. Promoting walking and cycling as primary forms of physical activity can therefore help make a substantial impact on public health.

Fig. 2. ***Health benefits of walking and cycling***

Source: Adapted from Walking and cycling: latest evidence to support policy-making and practice. Copenhagen: WHO Regional Office for Europe; 2022.

1.3 Walking and cycling improve road safety

Road traffic crashes result in around 1.2 million deaths annually and injure up to 50 million people, making them the leading cause of death for young people aged 5–29 years *(4)*. In addition, road traffic deaths impact people during their most productive years, with approximately 66% of fatalities occurring among people aged 18–59 years. Globally, pedestrians (which 95% of people identify as at one time or another) *(5)*, cyclists, and powered two- and three-wheeler users together account for approximately half of these fatalities *(4)*. Notwithstanding this, in dense, urban areas with well-designed streets that provide a safe and secure infrastructure, trips made by walking, cycling, or public transport are significantly less likely to result in death compared to those made by car or motorcycle *(22)*.

The key to improving road safety for all road users, and specifically for pedestrians and cyclists, lies in using a safe systems approach to create urban environments where walking and cycling are safe and accessible *(3)*. This approach recognizes human error as inevitable and aims to design a mobility system that puts people and safety at its core. Instead of solely focusing on individual road user behaviour, a safe system approach ensures that the entire system – roads, vehicles, speed limits, and road users – works to minimize the risk of fatal and serious injuries, preferably separating motorized and non-motorized traffic *(4)*. Enforcing road safety laws, particularly those addressing distracted driving and driving under the influence of alcohol or drugs, is a crucial element of this. Lower speed limits combined with traffic-calming measures, especially in areas where pedestrians, cyclists, and vehicles share space, can significantly reduce the severity of crashes, making streets safer for everyone *(23–25)*.

Safety concerns form one of the main barriers to people cycling more often *(26)*, so addressing them is vital. Creating safe infrastructure and supportive policies and programmes can lead to safer streets for all and promote walking and cycling as safe and normal ways to travel. It can encourage more people to choose active transport, including multi-modal trips combined with public transport, thus reducing the number and dominance of motor vehicles, as well as traffic congestion. These benefits, in turn, can create a positive feedback loop: as more people walk and cycle, roads become safer as there are more cyclists and pedestrians (often referred to as "safety in numbers"), and this can increase the appeal and value of walking and cycling, contributing to healthier, more sustainable, and safer communities.

Globally, pedestrians make up 21% of road fatalities *(4)*

1.4 Walking and cycling help create healthy urban environments

Walking and cycling offer transformative environmental and health benefits. Every step or cycle ride taken instead of a car journey can help reduce traffic congestion and carbon emissions, improve air quality and lower noise pollution. By implementing policy actions to enable more people to walk and cycle more often, cities and communities can be cleaner, quieter, safer and more sustainable, vibrant and liveable for all *(27)*.

The potential impact of walking and cycling on reducing car trips is substantial. For example, in many cities, despite 35–45% of all trips (by all modes) being within walking distance (around 2 km) or biking distance (around 3–5 km) *(12, 13)* most of these short trips are nevertheless made by motorized vehicles. Replacing even a portion of these trips with walking or cycling could significantly reduce urban carbon emissions and contribute to global efforts to combat climate change, given that nearly a quarter of all carbon emissions come from vehicular transport *(28)*.

Air pollution is a major health threat worldwide, responsible for millions of premature deaths each year *(29)*. As walking and cycling are zero-emission modes of transport, more use of these modes for transport can contribute to improving air quality *(8, 30)*. Additionally, long-term exposure to traffic noise has been linked to negative health effects *(31, 32)*. Studies have shown that these unhealthy environmental conditions can be mitigated by mode shifts from motorized vehicles to walking and cycling for short trips *(33–35)*. For example in Delhi, India, up to 45% of air pollution was estimated to be caused by transport, with private cars and motorcycles accounting for most transport emissions *(33)*. Encouraging more people to walk or cycle can make urban areas more liveable, healthier and safer.

While not all short trips can be made on foot or by bike, the increasing availability of e-bikes and deliveries by bike couriers is expanding the potential to replace car trips with cycling. This is particularly effective for the "last mile" of deliveries to homes and businesses, where e-bikes offer a practical and sustainable alternative.

1.5 Walking and cycling can help tackle inequalities

Walking and cycling are often perceived as a matter of personal choice, particularly in high-income settings. However, in many parts of the world, especially in low-resource settings, personal motorized or public transport may not be affordable or available. For these communities, walking and cycling are essential modes of transport for reaching critical services and supplies such as water, fuel, food, health care, education, and workplaces. Providing necessary infrastructure and enabling safe walking and cycling is therefore an equity issue.

In communities with a lack of safe access to walking and cycling networks, this can widen inequalities. For example, in contexts where key services such as health, education and employment are not accessible due to distance and/or lack of safe footpaths and cycle lanes, residents face significant disadvantages, including being forced to risk their safety by walking or cycling on dangerous roads, enduring long distances, or relying on unreliable public transport services. These challenges can lead to adverse health, social, and economic outcomes *(36, 37)*. For instance, school children can suffer lower academic performance because of tiredness and absenteeism resulting from long and dangerous commuting routes.

Moreover, residents have to crowd into inadequate housing closer to essential services, spend resources on transport and miss out on employment opportunities, or miss out on health care services *(38, 39)*. Conversely, well-planned communities that prioritize walking and cycling can ensure that all residents, regardless of income, have safe and convenient access to essential services; economic and educational opportunities; and social connections contributing to improved health outcomes, stronger social integration, and enhanced economic prospects *(40, 41)*. By implementing policy options outlined in this toolkit that aim to remove barriers and address the specific needs of disadvantaged and marginalized communities, governments can reduce health, social, and economic inequalities.

This is particularly important given studies that show urban infrastructure improvements may predominantly benefit socioeconomically advantaged groups *(42)*. For example, a recent study showed that people with higher education had better access to cycling infrastructure and cycled more *(43)*. As the burden of chronic diseases is higher in more deprived communities, implementing policy options to improve opportunities for walking and cycling in marginalized neighbourhoods has great potential to deliver health equity gains *(44)*.

1.6 Walking and cycling can increase use of public transport systems

Promoting walking and cycling alongside public transport creates a powerful synergy for sustainable mobility. Walking and cycling serve as key components of almost every public transport journey and bridge the "first mile" and "last mile" *(45)*. By integrating these modes, cities can enhance the efficiency and reach of public transport systems, making them more convenient and attractive for users while building a comprehensive, sustainable transport network that improves public health and urban liveability.

Walking and cycling offer a flexible and cost-effective way to access public transport. They extend the range of public transport services by allowing people to easily travel to and from transit stops and stations, even if they are not within immediate proximity. This integration reduces the need for short car trips to reach public transport hubs, decreasing traffic congestion and lowering carbon emissions.

Furthermore, combining active travel with public transport can significantly reduce the environmental impact of urban travel. Public transport, when paired with walking and cycling, has a much lower carbon footprint compared to private car use. This helps to cut carbon emissions, reduce air pollution, and contribute to healthier, more sustainable cities *(46)*.

The availability of amenities such as secure bike parking, rental bikes at transit stations, and low-cost, convenient options to take bicycles on trains and buses can encourage more people to cycle as part of their journey. This not only promotes physical activity but also makes public transport a more viable and flexible option for a broader range of people, including those who may need to travel longer distances.

1.7 Walking and cycling make economic sense

Promoting walking and cycling offers not only health and environmental advantages but also delivers significant economic benefits. It can boost local economies, create jobs, enhance tourism, and lead to long-term savings in public health systems. This makes investing in walking and cycling a smart economic strategy for all communities.

When neighbourhoods are designed to support walking and cycling, they attract cyclists and pedestrians and draw more people to local shops, boosting small-business turnover and enhancing the vitality of local communities *(47)*. For example several studies have shown that in areas with improved walking and cycling infrastructure, retail sales increase – often contrary to the expectations of retailers who protested against measures aimed at restricting personal motorized vehicles *(47)*. However, one double-edged consequence of improving the walkability of an area can be that residential homes and retail property values rise more steeply compared to similar properties in less-walkable neighbourhoods *(48, 49)*. While this is often viewed as desirable, higher rent and house prices can reduce housing affordability and may negatively impact current residents' cost of living, and lead to some moving out of the area. Improvements to walking and cycling networks must therefore ensure reducing inequity is a priority consideration.

Investing in policy actions to support more walking and cycling can also create jobs. A recent analysis by the European Cycling Federation found that over 650 000 jobs in the EU-27 are directly linked to cycling, with the potential to create an additional 400 000 jobs if cycling rates were to double *(50)*. The Institute for Transport and Development Policy reported that bicycle infrastructure projects can yield more direct jobs (as opposed to indirect or induced jobs) than road projects, citing a study from the United States of America, which estimated 11 to 26 jobs at the state level could be generated for every US$ 1 million in revenue from bicycle-oriented businesses *(51)*. Job creation extends beyond infrastructure development to industries such as bike manufacturing, maintenance, and tourism.

Tourism is another sector in which walking and cycling can generate significant economic benefits. The market for holiday destinations that offer good amenities for walking and cycling is growing, attracting visitors who seek active travel experiences. For instance, a study in Europe found that cycle tourism generates €44 billion annually, revealing a substantial economic impact *(52)*. Another study in France reported cycle tourism generated €5.1 billion annually and had increased by 46% between 2010 and 2018, with even greater growth expected *(53)*. In Scotland, investment in walking and cycling networks was estimated to generate £1.9 billion for the Scottish economy, as well as supporting around 27 500 jobs and averting an estimated 19.5 million car journeys and around 7.1 million kg of carbon emissions. *(54)*

Reduced transport costs, reduced employee sick leave *(55, 56)* and health-care savings are additional economic benefits *(57)*. When more people walk or cycle, there is a decrease in the use of motorized transport, leading to reduced congestion and lower infrastructure maintenance costs.

In summary, investing in walking and cycling infrastructure can have far-reaching economic benefits. It can boost local economies, create jobs, enhance tourism, and lead to long-term savings in transport and health-care costs, making it a smart economic strategy for communities. More details on available tools for calculating the cost-benefits from increasing walking and cycling are provided in Section 3 of this toolkit.

Illustrative photo: pedestrian street in San Francisco de Campeche, Campeche, Yucatán, Mexico, by Kamnacestach/Shutterstock

Section 2: **Policy action areas to increase walking and cycling**

This toolkit outlines seven policy action areas to guide coordinated, cross-government action on enabling and increasing opportunities for safe walking and cycling for all. The seven action areas provide a flexible framework for implementation at national, subnational and local level, as policy alignment across these levels is needed to ensure consistency and achieve the greatest impact.

Each policy area contains a clearly stated policy objective, with a short rationale explaining why the policy is necessary and how it supports walking and cycling. Each policy area is accompanied by a set of practical steps to achieve the objective, and some actions are supportive of more than one policy. Case studies in this toolkit provide real-world examples of policy implementation and offer valuable insights.

Increasing walking and cycling requires a comprehensive approach; no single intervention is sufficient on its own. The seven policy actions are interconnected and will have the most substantial impact when implemented together. It is, therefore, the responsibility of all levels of government to identify and apply the combination of strategies needed to support walking and cycling in their local contexts.

Moreover, successful development and implementation of many of these policies requires collaboration across sectors beyond health, including civil society and community stakeholders. Establishing partnerships and ensuring coordination and alignment of actions across sectors leads to greater scale, resource sharing, policy coherence, and effectiveness.

The more these policy options are put into practice the more effective the efforts will be in promoting public health, environmental sustainability, economic benefits, and social equity.

Policy action area 1: **Integrate walking and cycling into all relevant policies**

Objective

To integrate walking and cycling into all relevant policies across all levels of government, including securing walking and cycling as priority modes of travel in transport policies as well as ensuring inclusion in policy across other related sectors such as sustainability, urban planning, health, education, sport, tourism, environment, and economic development.

Rationale

Strengthening the presence of walking and cycling in national and subnational policies enhances the visibility of these activities, which is vital to secure prioritization and funding. Unfortunately, even in transport policies, walking and cycling are often overshadowed by the dominant focus on planning and supporting motorized transport. This "car centric planning" has led to increasing traffic congestion, pollution, and health issues. Securing inclusion in all relevant policies, along with clear objectives and targets, is essential to shift government planning and policy from traditional mindsets (or "business as usual") towards bold policy actions favouring walking and cycling (see Fig. 3).

Securing the integration of walking and cycling in policies beyond transport is key to positioning walking and cycling as a solution for multiple government priorities. This in turn can encourage and develop a cross-government agenda on walking and cycling to achieve multiple government objectives (see case studies in Box A).

Government sectors that can benefit from walking and cycling policy integration

- **Transport and mobility:** Integrating walking and cycling into urban planning, transport, and road safety/mobility policies is crucial to ensure they are prioritized over personalized, motorized transport and integrated within well-planned public transport systems. This ensures political commitment, adequate resource allocation, and strong accountability mechanisms. The absence of walking and cycling from these policies often results in limited consideration and inclusion in urban infrastructure and transport projects, affecting resource mobilization through national and international financing mechanisms.
- **Health and well-being:** Walking and cycling objectives should be included in health policies, particularly those targeting NCDs, obesity prevention, mental health, and healthy ageing. Increasing physical activity through more walking and cycling can contribute significantly to achieving multiple health policy objectives and support building healthier societies.
- **Sport, recreation and leisure:** Walking and cycling are popular forms of leisure and are accessible to most people of all ages and abilities, and as such they should be core components within community sport, youth, leisure, and recreation policies. Setting objectives and targets for walking and cycling within these policies will ensure visibility and support allocation of resources.
- **Social inclusion and gender equity:** Walking and cycling are affordable and accessible modes of transport and recreation. As such, government policy objectives on inclusion and gender equity can be supported directly and indirectly by improving access to and participation in walking and cycling. Walking and cycling can also increase positive social interactions, which can add to feelings of community belonging and cohesion.

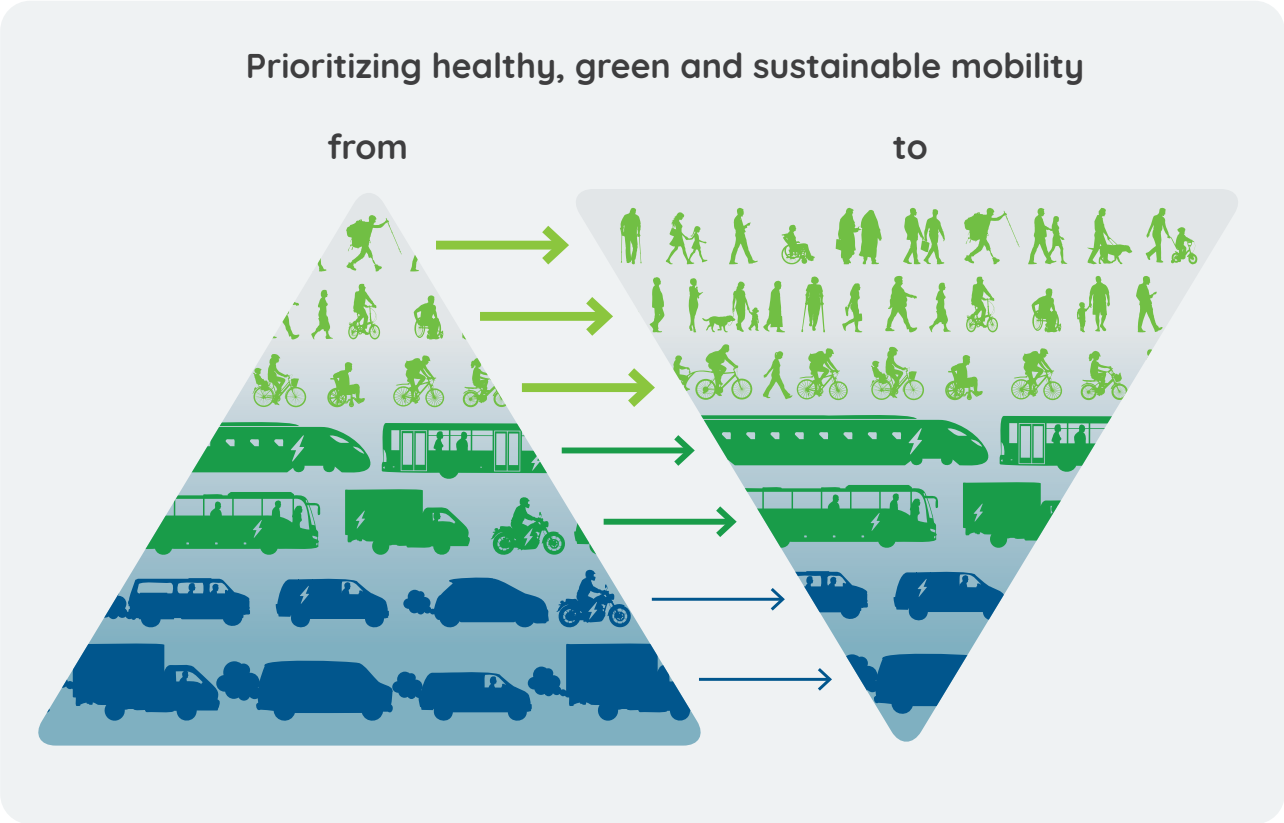
- **Crime prevention:** Policy actions to prevent crime are closely aligned to providing safe environments for walking and cycling. Fear of crime, as well as road safety, are two of the most frequently reported barriers to walking and cycling, especially at night and by vulnerable road users. Crime prevention policy objectives can be supported by providing good infrastructure that encourages more pedestrians and cyclists who provide additional street surveillance ("eyes on the street") that can help deter criminal activity and report suspicious activities.
- **Tourism:** Walking and cycling tourism can provide economic, environmental and social benefits by attracting visitors, reducing congestion, and promoting sustainable travel. Tourism policies that are supported by the development of well-connected walking and cycling infrastructure and good links to the public transport network can deliver enhanced visitor experience, making locations more attractive and accessible to a wider range of tourists and increase local business revenue.
- **Environmental and economic development:** Walking and cycling can help achieve policy objectives related to reduction in carbon emissions, as well as noise and air pollution. As such, targets to increase walking and cycling should be included in climate adaptation policy, as well as transport and economic development strategies and action plans.
- **Education:** Given the importance of developing independent mobility, as well as knowledge around road safety, education policy should include curricular objectives related to teaching children about safe walking and cycling, and policy objectives to ensure that the areas directly around schools (i.e. the catchment area) provide safe, accessible and well-connected walking and cycling routes to their premises.

Globally only 46 countries report having a national walking and cycling policy *(58)*

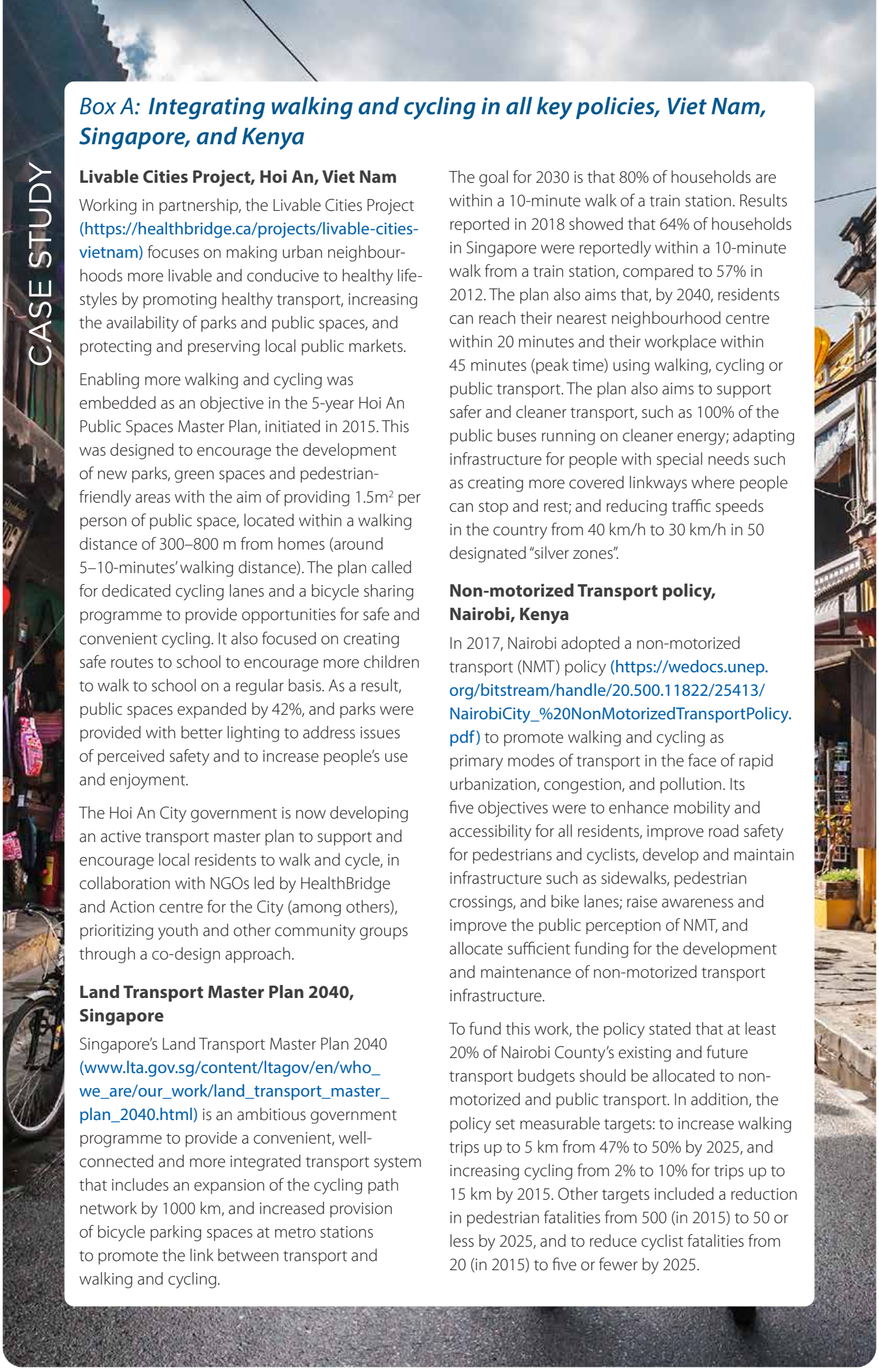
Key actions to take

1. **Review and integrate walking and cycling in all relevant policies:** Update and or strengthen the inclusion of walking and cycling in all relevant policy areas, and ensure there are clear policy objectives related to supporting, enabling and protecting safe walking and cycling; prioritize actions that favour increasing walking and cycling.
2. **Create a comprehensive understanding of the context (people and infrastructure):** Gather as much data as possible to assess and understand current walking and cycling levels among different groups, as well as the environmental, psychological and social-cultural factors that influence these behaviours; use so-called "behavioural insights" to inform policy objectives.
3. **Establish clear targets:** Policy objectives to increase walking and cycling need clear, time-bound targets, with specific actions and designated responsibilities. These measurable targets provide direction for the walking and cycling policy agenda, offering transparency and benchmarks for communities and countries to monitor and evaluate progress. Setting these targets within all relevant government policies empowers leaders and decision-makers to generate joint action, strengthen policy coherence, leverage regulatory approaches, and mobilize financing mechanisms.
4. **Establish a cross-government coordination mechanism and accountability framework:** With potential partners from different policy areas, it is essential to seek common ground in amplifying the effects of individual policies through walking and cycling. This can result in a specific standalone walking and cycling policy or a consolidated national implementation or action plan. The preferred option is to organize an ongoing governmental coordination mechanism based on a focused framework for cross-government policy objectives related to walking and cycling.
5. **Ensure monitoring and research:** If not yet in place, set up a monitoring system enabling relevant and ongoing data collection on walking and cycling. Conduct research to address knowledge gaps and increase understanding of enablers and barriers.

Fig. 3. ***Promoting sustainable mobility over motorized transport: a shift in mindset***



Source: Adapted from A handbook on sustainable urban mobility and spatial planning: Promoting active mobility. Geneva: United Nations Economic Commission for Europe; 2020.



CASE STUDY

Box A: ***Integrating walking and cycling in all key policies, Viet Nam, Singapore, and Kenya***

Livable Cities Project, Hoi An, Viet Nam

Working in partnership, the Livable Cities Project (https://healthbridge.ca/projects/livable-cities-vietnam) focuses on making urban neighbourhoods more livable and conducive to healthy lifestyles by promoting healthy transport, increasing the availability of parks and public spaces, and protecting and preserving local public markets.

Enabling more walking and cycling was embedded as an objective in the 5-year Hoi An Public Spaces Master Plan, initiated in 2015. This was designed to encourage the development of new parks, green spaces and pedestrian-friendly areas with the aim of providing 1.5m^2 per person of public space, located within a walking distance of 300–800 m from homes (around 5–10-minutes' walking distance). The plan called for dedicated cycling lanes and a bicycle sharing programme to provide opportunities for safe and convenient cycling. It also focused on creating safe routes to school to encourage more children to walk to school on a regular basis. As a result, public spaces expanded by 42%, and parks were provided with better lighting to address issues of perceived safety and to increase people's use and enjoyment.

The Hoi An City government is now developing an active transport master plan to support and encourage local residents to walk and cycle, in collaboration with NGOs led by HealthBridge and Action centre for the City (among others), prioritizing youth and other community groups through a co-design approach.

Land Transport Master Plan 2040, Singapore

Singapore's Land Transport Master Plan 2040 (www.lta.gov.sg/content/ltagov/en/who_we_are/our_work/land_transport_master_plan_2040.html) is an ambitious government programme to provide a convenient, well-connected and more integrated transport system that includes an expansion of the cycling path network by 1000 km, and increased provision of bicycle parking spaces at metro stations to promote the link between transport and walking and cycling.

The goal for 2030 is that 80% of households are within a 10-minute walk of a train station. Results reported in 2018 showed that 64% of households in Singapore were reportedly within a 10-minute walk from a train station, compared to 57% in 2012. The plan also aims that, by 2040, residents can reach their nearest neighbourhood centre within 20 minutes and their workplace within 45 minutes (peak time) using walking, cycling or public transport. The plan also aims to support safer and cleaner transport, such as 100% of the public buses running on cleaner energy; adapting infrastructure for people with special needs such as creating more covered linkways where people can stop and rest; and reducing traffic speeds in the country from 40 km/h to 30 km/h in 50 designated "silver zones".

Non-motorized Transport policy, Nairobi, Kenya

In 2017, Nairobi adopted a non-motorized transport (NMT) policy (https://wedocs.unep.org/bitstream/handle/20.500.11822/25413/NairobiCity_%20NonMotorizedTransportPolicy.pdf) to promote walking and cycling as primary modes of transport in the face of rapid urbanization, congestion, and pollution. Its five objectives were to enhance mobility and accessibility for all residents, improve road safety for pedestrians and cyclists, develop and maintain infrastructure such as sidewalks, pedestrian crossings, and bike lanes; raise awareness and improve the public perception of NMT, and allocate sufficient funding for the development and maintenance of non-motorized transport infrastructure.

To fund this work, the policy stated that at least 20% of Nairobi County's existing and future transport budgets should be allocated to non-motorized and public transport. In addition, the policy set measurable targets: to increase walking trips up to 5 km from 47% to 50% by 2025, and increasing cycling from 2% to 10% for trips up to 15 km by 2015. Other targets included a reduction in pedestrian fatalities from 500 (in 2015) to 50 or less by 2025, and to reduce cyclist fatalities from 20 (in 2015) to five or fewer by 2025.

Illustrative photo: pedestrian street in Hoi An, Viet Nam, by Romas_Photo/Shutterstock

Policy action area 2: **Provide safe and connected walking and cycling networks**

Objective

To ensure that all communities have convenient access to safe, well-connected walking and cycling networks; and to enable walking and cycling to be the preferred choice for short trips as well as for active recreation and exercise.

Rationale

Well-planned urban environments with high-quality walking and cycling infrastructure encourage more people to walk or cycle, thereby fostering healthier lifestyles. A well-connected network of paths providing safe access and convenient distances to key destinations used in daily living not only promotes increased physical activity but also reduces dependency on personal motor vehicles, helping to combat traffic congestion, pollution, and urban sprawl (see case studies in Box B). Yet research indicates that 80% of audited roads globally do not meet the recommended minimum 3-star rating for pedestrian safety standards, and a mere 0.2% are equipped with cycle lanes, leaving these road users dangerously exposed *(4)*. This lack of essential features – such as sidewalks, safe crossings, and a dedicated and well-connected cycling network – forces a substantial proportion of pedestrians and cyclists to navigate hazardous conditions, often sharing poorly surfaced roads with high-speed traffic.

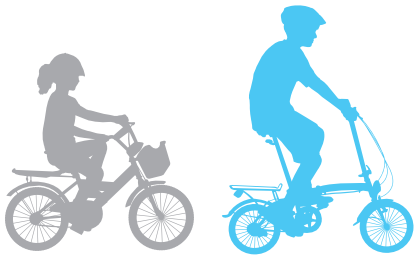
Aspects of urban environments that can promote safe and connected walking and cycling networks

- **Integrated networks:** Urban planning and design must prioritize walking and cycling networks that connect residential areas with key destinations such as commercial zones, public spaces, and health services. Concepts like "walkable cities" and "15-minute neighbourhoods" ensure essential services are easily accessible by walking or cycling, reducing reliance on cars. This approach is consistent with "transit-oriented development" and "smart growth" neighbourhoods aimed at environmentally sustainable development and reducing urban sprawl.
- **Compact, mixed-use neighbourhoods:** When key destinations like shops, schools, or workplaces are not easily accessible by walking, cycling, or public transport, people tend to rely on motor vehicles. This is often a result of land-use policies that separate residential areas from essential services, contributing to "urban sprawl". The increased use of private vehicles in such areas leads to higher carbon emissions, traffic congestion, and poorer air quality. In contrast, compact, mixed-use neighbourhoods bring these destinations closer, enabling more people to walk or cycle, which reduces environmental impacts, promotes sustainability, and supports healthier lifestyles. Compact planning can significantly lower carbon footprints and enhance urban living.
- **Improved access for all:** Poor walking and cycling infrastructure can disproportionately impact lower-income groups and people with disabilities, especially when there is also limited access to private or affordable public transport services. By improving walking and cycling networks, cities can help address social and economic inequalities and improve access to essential services (e.g. education, health, employment) for vulnerable populations.

- **Integrated green spaces:** Designing streets with greenery, linear parks, good lighting and access to nature can also enhance the appeal of walking and cycling by providing shade, reducing urban heat, and creating more pleasant environments. These green features also play a key role in climate mitigation by lowering carbon emissions and reducing noise pollution. Urban planning policies must prioritize equitable access to parks, rivers, and coastal areas by integrating walking, cycling, and public transport options. Zoning and land-use legislation and policies should focus on fairly distributing green spaces to all communities, aligning with SDG 11, to ensure universal access to public spaces, especially for vulnerable groups. This approach supports healthier lifestyles while promoting environmental sustainability and reducing reliance on private vehicles.

Key actions to take

1. **Reform land use policies:** Review and reform land use laws and policies to ensure that planned and existing land use plans and urban developments provide highly connected, safe walking and cycling networks. This includes minimizing distances between a diverse range of destinations to enhance accessibility and convenience.
2. **Strengthen transport and mobility policies:** Evaluate and strengthen transport, mobility and road safety laws and policies, as appropriate to context, to mandate the behaviourally informed design and provision of walking and cycling infrastructure. Ensure these infrastructures meet designated functions, road safety standards, and are suitable for the volume of vehicles on the road.
3. **Improve network connectivity:** Identify and prioritize enhancements to walking and cycling networks and end-of-trip amenities. Focus on increasing walkability and cyclability around key destinations and public facilities, such as educational institutions, public offices, health settings, and public open spaces.
4. **Ensure equitable access to green spaces:** Review laws and policies (including, for example, standards, orders and by-laws) related to the provision, distribution, and access to public and green open spaces by walking and cycling. Ensure these spaces are equitably accessible and of high quality for different communities and populations, considering factors such as age, sex, ability, and socio-economic status.
5. **Show impact through demonstration projects:** Select communities to implement demonstration projects aimed at creating more walkable and cycle-able neighbourhoods. Engage communities in co-design processes and conduct appropriate evaluations. Use the findings from these projects to inform policy changes and guide future investments.



CASE STUDY

Box B: ***Providing safe and connected walking and cycling networks, France, the Netherlands (Kingdom of the), and Norway***

Creating a "15-minute city", Paris, France

Since taking office in 2014, Paris Mayor Anne Hidalgo has worked towards making Paris a "15-minute city" (www.paris.fr/dossiers/paris-ville-du-quart-d-heure-ou-le-pari-de-la-proximite-37), remodelling the city with the aim to provide all residents with access to their places of work, education, shopping, health centres or recreation within 15 minutes their homes. The city plans included creating "a bike lane in every street" and removing 60 000 parking spaces for private cars. Paris' hosting of the 2024 Olympics Games served as a catalyst for improvements and extensions to the city's walking and cycling infrastructure. Some roads have been repurposed to be used for pedestrians and cyclists only, and open spaces have been repurposed for multiple users, for example school playgrounds becoming a sports facility for adults at night. By 2023, Paris had over 1000 km of cycling routes, including separate bike lanes, painted paths and converted bus lanes for cyclists. An old railway line was transferred into a green walking path. Additionally, the city expanded its bike-sharing programmes, introducing 3000 more pay-as-you-go bicycles.

Fast cycle route (RijnWaalpad), Arnhem-Nijmegen, the Netherlands (Kingdom of the)

The RijnWaalpad is one of several "fast cycle routes" contributing to lowering carbon emissions by promoting a shift from driving to cycling in the Netherlands (Kingdom of the) (www.gelderland.nl/themas/bereikbaar/fietsen/hoogwaardige-fietsroutes/netwerk-van-hoogwaardige-fietsroutes/rijnwaalpad). The 18 km path connects the cities Arnhem and Nijmegen with a 4.4 m wide cycle path allowing overtaking by cyclists travelling at different speeds. Opened in 2015, it was designed to maximize efficiency by providing a direct, safe, and comfortable commuting alternative to cars and public transport. The RijnWaalpad has led to a significant increase in bicycle use in the Arnhem-Nijmegen region, with cycling volumes almost doubling after 5 years. An evaluation of 15 Dutch cycle highways showed an increase in cycling to work by 10% for trips that benefitted from the construction of a cycle highway. Beyond its transport benefits, the RijnWaalpad contributes to sustainability goals by reducing car dependency and lowering CO_2 emissions.

Fyllingsdalstunnelen – the world's longest bike tunnel: Bergen, Norway

The *Fyllingsdalstunnelen* in Bergen, Norway, is an example of repurposing infrastructure to support active travel (www.vestlandfylke.no/fylkesveg/fylkesvegprosjekt-i-vestland_ny/fyllingsdalstunellen). Originally designed as an escape tunnel for the light rail system, the tunnel has been transformed into a dedicated path for pedestrians and cyclists. The repurposed 2.9 km tunnel opened in April 2023 and features separate lanes for cyclists and pedestrians, with a 3.5-m wide cycle lane and a 2.5-m wide walking lane. The walking lane is covered with blue rubber flooring to enhance comfort, while the cycling lane is made of white asphalt. The tunnel's design includes art installations, colourful murals, and lighting features to create an inviting atmosphere. The tunnel is equipped with security cameras, emergency phones, and rest stops, ensuring safety and convenience for users.

The bicycle tunnel provides better connection for the Fyllingdalen neigbourhood to a new residential area, a university campus and the university hospital – one of the largest employers in the county. This initiative aims to encourage more people to choose walking and cycling over driving, thereby reducing traffic congestion and CO_2 emissions. The project is part of a broader effort to promote sustainable urban mobility in Bergen.

Illustrative photo: dual bicycle path and pedestrian path across a highway bridge, Poland, by Grand Warszawski/Shutterstock

Policy action area 3: **Design inclusive and safe streets for all**

Objective

Ensure that all streets are designed to be safe, inclusive, and accessible, to encourage walking and cycling by more people of all ages and all abilities.

Rationale

Many urban areas have prioritized motor vehicle traffic over walking and cycling, making streets less safe and accessible. Well-designed streets that cater to all modes of transport can improve safety, reduce traffic accidents, and make walking and cycling more appealing (see case studies in Box C). Street design guidance exists to enable this. For example, the Global Designing Cities Initiative's *Global street design guide* (Box 4), developed with input from 72 cities in 42 countries, offers technical details to inform street design that prioritizes pedestrians, cyclists, and public transport users *(59)*. It includes case studies and practical examples.

Conducting regular assessments of streets is essential to ensure they are designed and maintained according to desired safety standards – such as the safety star rating system developed by the International Road Assessment Programme (iRAP) *(60)*. A 3-star rating is widely accepted as the minimum acceptable rating for all users *(4)*. Despite this, data from iRAP show this standard is far from being met. For example, from an assessment of over 600 000 km across 88 countries, it was found that around 80% of roads do not meet the minimum recommended 3-star safety level for pedestrians or cyclists *(53)*.

Aspects of well-designed streets

- **Emphasis on road safety:** Well-designed streets contribute to reducing the speed of motorized vehicles, a leading cause of road crashes, injuries, and deaths. Establishing and enforcing street design guidelines is a core component of implementing a safe system approach to improving road safety (Box 5) *(59)*.
- **Inclusive design:** Well-designed streets meet the needs of all users, thereby encouraging more walking and cycling. Street design guidelines establish requirements that ensure inclusive access and user safety while enhancing comfort and enjoyment for everyone. Design standards should aim to minimize and, where possible, eliminate hazards for pedestrians and cyclists, and include specific guidance on standards for the placement, maintenance and use of walking and cycling paths.
- **Equity in access:** Poor street design disproportionately affects access and mobility for people living with disabilities, including with sensory or mobility limitations *(61)*. Poor maintenance of footpaths and cycle lanes is a particular deterrent for older adults, as it increases the risk of falls. Well-maintained infrastructure – such as clear paths and cycleways – enhances access and ensures streets are perceived as safe, particularly for children, families, women, and older adults.
- **Street amenities and environment:** Provision of street features such as lighting, seating, greenery, and cycle parking encourages more walking and cycling. Well-designed streets also foster social interaction and contribute to reducing the risk of social isolation and loneliness, particularly for older adults. Well-designed streets can also attract people to neighbourhoods, which can revitalize local economies.

Box 4. ***Global Street Design Guides***

The Global Street Design Guide (https://globaldesigningcities.org/publication/global-street-design-guide/) sets out key principles of good street design to ensure the safety and support of all uses, including pedestrians and cyclists. The guide provides detailed specifications for the provisions necessary to enable and encourage safe walking and cycling by all users. The guide is available for countries to adapt for use in local contexts and provides specifications for:

- walking infrastructure – including footpath location, width, kerb design, and other footpath design features;
- cycling infrastructure – including width, separation from motor vehicle traffic on streets with higher vehicle use and/or higher traffic speed limits, and other design features;
- safe intersections and pedestrian and cycling crossings;
- street lighting and other features that provide safety and comfort;
- traffic calming or other speed-control features;
- street furniture – such as seating, lighting, bus shelters, wayfinding signage and cycle racks; and
- green infrastructure (e.g. trees and other natural vegetation) as natural barrier against moving vehicles.

Building on the success of Global Street Design Guide, additional design guidance resources include Design Streets for Kids (https://globaldesigningcities.org/publication/designing-streets-for-kids/). This guide draws from international best practice and cities around the world to show how to design streets and public spaces for children of all ages and abilities that are safe, enjoyable, and inspirational for children and caregivers.

Box 5. ***Safe system approach***

WHO recommends that countries adopt a safe system approach, which puts people and safety at the core of mobility systems to create safer road environments for all users. This approach integrates a range of measures designed to minimize risk and reduce harm, recognizing that road transport operates as a complex system. By placing safety at its core, the safe system approach – central to the Decade of Action for Road Safety 2021–2030 – emphasizes the critical interaction between humans, vehicles, and road infrastructure, ensuring that these elements work together to achieve the highest possible level of safety for all. A safe system therefore:

- anticipates and accommodates human errors;
- incorporates road and vehicle designs that limit crash forces to levels that are within human tolerance to prevent death or serious injury;
- motivates those who design and maintain the roads, manufacture vehicles, and administer safety programmes to share responsibility for safety with road users, so that when a crash occurs, remedies are sought throughout the system, rather than solely blaming the driver or other road users;
- pursues a commitment to proactive and continuous improvement of roads and vehicles so that the entire system is made safe rather than just locations or situations where crashes last occurred; and
- adheres to the underlying premise that the transport system should produce zero deaths or serious injuries and that safety should not be compromised for the sake of other factors such as cost or the desire for faster transport times.

Source: (3)

Key actions to take

1. **Develop or adopt street design standards:** Develop or adopt best-practice street design standards, tailored to local contexts, and ensure their use in planning systems at all levels.
2. **Mandate compliance:** Enforce compliance with design standards through legal frameworks or as a condition of planning/development approval. Include these standards as a condition for financial investment and procurement contracts.
3. **Conduct regular street audits and assessments:** Establish and use a street assessment tool and regularly audit existing and new (proposed) streets to ensure compliance and identify areas for improvement, modification and maintenance.
4. **Prioritize street improvements:** Launch improvement programmes across neighbourhoods and cities, focusing on areas most in need of safer, more inclusive walking and cycling infrastructure.
5. **Encourage community involvement:** Engage communities in identifying existing barriers as well as potential opportunities and local needs for creating safer streets; encourage their participation in co-design processes and consultations.

Nearly 80% of all roads assessed do not meet a minimum 3-star rating for pedestrian and cycling safety *(60)*

CASE STUDY

Box C: ***Designing inclusive and safe streets for all, Colombia and the United Kingdom***

Manual for Sidewalks (Cartilla de Andenes de Bogotá), Bogotá, Colombia

The City of Bogotá has undertaken multiple initiatives to promote walking and cycling as alternative modes of transport. In 2000, led by the Secretary for Planning and a team of urban planners and mobility experts, the city adopted a street design decree to regulate the construction of sidewalks and public spaces in the city, and developed the accompanying "Manual of Sidewalks" to help implement the decree. Revisions were made in 2007 and 2015 and a new regulation (www.alcaldiabogota.gov.co/sisjur/normas/Norma1.jsp?dt=S&i=4543&utm) and manual (http://www.sdp.gov.co/sites/default/files/cartilla_andenes_modificacion_07-06-2018.pdf) were adopted in 2018. Together, the decree and the manual support the city's broader efforts to promote sustainable urban mobility, reduce reliance on motorized transport and improve public open spaces.

The Manual for Sidewalks is a comprehensive resource with specifications on the design, construction and maintenance of sidewalks to enhance safe and separated pedestrian use, including technical guidance on sidewalk widths, surface materials, kerb ramps and street furniture. It also emphasizes the importance of integrating public green spaces and ensuring proper lighting to enhance the overall pedestrian experience.

Today, every modification of public spaces for pedestrians in Bogotá must be developed in accordance with the guidelines and specifications of the manual. By doing so the city has significantly improved the quality of its sidewalks and reduced the risk of accidents, while making walking more enjoyable and accessible, including for people with disabilities.

Healthy Streets: London, United Kingdom of Great Britain and Northern Ireland

Healthy Streets sets out the Mayor of London's approach to putting people and their health at the centre of decisions on the design, management, and use of public spaces (https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets). The Healthy Streets approach was initiated as part of the Transport for London Transport Strategy in 2018 with the aim making streets safe and welcoming for everyone, creating a healthier, more inclusive city where people choose to walk, cycle and use public transport while improving air quality and reducing congestion.

To help implement Healthy Streets, resources were developed to provide guidance across the process, from initial street assessments, through to implementation and evaluation. These include a *Guide to the Healthy Streets Indicators* and the *Healthy Streets Check for Designers*. A *Healthy Streets Survey* is available to help planners capture the experience, perceptions and expectations of people and support engagement with local communities (all available using the link above). Collectively these tools can help measure the performance of streets across locations and over time. A Healthy Streets NGO was established to support implementation and provide additional resources and training.

Illustrative photo: cyclists on the Carrera Séptima cycling path alongside pedestrians in Bogota, Colombia, by Ol Franck Camhi/Shutterstock

Policy action area 4: **Improve safe road user behaviour**

Objective

To reduce the real and perceived risk of traffic collisions, road deaths, and injuries among pedestrians, cyclists, and other vulnerable road users by improving road user behaviour.

Rationale

Safety is the key factor influencing people's decisions to walk or cycle. More than half of global road fatalities involve vulnerable road users such as pedestrians and cyclists, with road traffic injuries being the leading cause of death for young people aged 5–29 years *(1, 3, 8)*. Parents, children, young people, women, and older adults are particularly affected by safety concerns. Enacting and enforcing laws that govern road user behaviour is critical for increasing road safety and encouraging more people to walk and cycle. Ensuring children and adults have the opportunity to learn cycling skills, as well as about traffic rules and road safety, is also key to a comprehensive approach to improving safe road user behaviour (see case study, Box D).

Key contributors to safer road use

- **Reduce speeding:** Speed is the leading cause of road deaths, presenting a significant risk to all road users, particularly pedestrians and cyclists *(4)*. The risk of serious injury and death increases with speed, and the chance of survival is minimal in collisions involving vehicles travelling over 50 km/h. Despite this, progress in enacting laws that meet WHO best practice criteria – that is the national speed limit includes an urban speed limit of 50 km/h or lower and the ability of local authorities to adapt speed limits to local context – has been limited. In 2023, of the 163 countries reporting laws on speeding, only 57 meet WHO best practice criteria *(4)*.
- **Eliminate driving under the influence:** Driving under the influence of alcohol or drugs significantly increases the risk of collisions *(62)*. Recent estimates suggest that 10% of road traffic deaths are related to drink-driving. Of the 166 countries with specific legislation on drink-driving, 48 already meet WHO best practice criteria. Legislation addressing these behaviours is crucial for improving road safety *(1)*.
- **Prevent distracted driving:** Distracted driving and cycling, such as driving while using a mobile phone, impairs drivers' abilities and poses a risk comparable to that of driving under the influence of alcohol *(63)*. Extending legislation to address this issue is essential to road safety.
- **Good road design:** Road infrastructure is a key determinant of safety, and roads should be designed and operated to eliminate or reduce risks for all road users. Street design and engineering standards provide guidance on effective and safe solutions to improve road user behaviour. Many examples of design solutions are available and adaptable for different contexts *(64)*.

Legislation and enforcement

Legislation and enforcement are vital tools for improving road safety and thereby encouraging walking and cycling – including legislation on cycle helmets (Box 6). The Decade of Action for Road Safety 2021–2030 emphasizes a safe system approach (see Box 5), which integrates a range of measures designed to minimize risk and reduce harm. These include legislation and public awareness/education to improve road safety through safe road user behaviour. Effective and efficient policing of road user behaviour is crucial, especially in low- and middle-income countries where more than 90% of all traffic deaths occur *(4)*, along with efforts to improve public perception of traffic police forces.

Key actions to take

1. **Strengthen legislation affecting road safety:** Introduce or reform legislation for safe road use (at national or subnational level, depending on legislative mandates), prioritizing legislation on speed limits, alcohol and drug consumption, and mobile phone use. Aim to meet WHO best practice criteria *(4)*, which include setting a maximum speed limit of 50 km/h in urban settings and enabling local authorities to further lower this limit where there is potential conflict with pedestrians and cyclists, such as around schools, in residential areas, and urban centres.
2. **Empower local authorities:** Enable and support local authorities to adjust or recommend speed limits where needed, prioritize walking and cycling when redesigning streets and restrict or ban motorized traffic in specified areas (e.g. city centres) to enhance safety for pedestrians and cyclists.

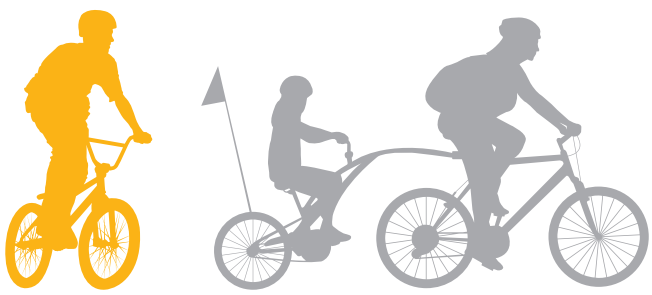
3. **Strengthen enforcement:** Enhance the enforcement of road safety legislation, and thereby safer user behaviours, through increased use of technologies such as automated speed cameras and manual checks (e.g. random breath testing, sobriety checkpoints, and roadside checks).
4. **Equip enforcement authorities:** Ensure authorities have the appropriate legal powers, functions, and training to enforce road safety rules effectively, allowing them to prosecute violations through meaningful penalties.
5. **Review and strengthen penalties:** Evaluate and, if necessary, adjust penalties for violations of road safety laws to ensure they are meaningful and effective. Use a range of penalties, such as administrative driver's licence suspension or revocation, fines, and demerit points, tailored to the country context and culture.

Box 6. ***Helmet legislation for cyclists***

A country's decision to mandate helmet use for non-powered bicycles is influenced by safety considerations and public health objectives. Evidence shows that wearing a cycle helmet significantly reduces the risk of severe head injuries in cycling accidents, which can lead to reducing the chances of disability or death *(65)*. But the availability of affordable helmets and the requirement for use may act as a barrier to cycling for some people. As a consequence, this could reduce the public health impact of active transport – indeed, available data on the benefits versus the disadvantages of promoting cycling in the absence of non-powered bicycle helmet legislation present a mixed picture. For users of powered two- and three-wheelers, WHO recommendations implementing a universal helmet law, applicable to all drivers and passengers, as head injuries are the main cause of death in most motorcycle crashes. Quality helmets reduce the risk of death by over six times, and reduce the risk of brain injury by up to 74%.

Ensuring effective helmet use requires measures such as developing and passing helmet-use legislation, public education, and active law enforcement *(66)*. Many countries that have introduced mandatory helmet laws for cyclists cite safety data as a key factor, particularly for children. For example, Australia was among the first to introduce nationwide helmet regulations in the early 1990s. Canada and Argentina enforce helmet use for cyclists in certain regions and the Netherlands (Kingdom of the) requires helmet use only for e-bikes that exceed the speed limit of 25 km. These policies are typically part of broader road safety strategies aimed at reducing traffic-related injuries.

Opposition to such legislation includes concerns that helmet laws are often poorly enforced, barriers such as hot weather, as well as preferences for other headwear (e.g. turbans). Misinformation can also contribute to non-use, such as myths that helmets are unsafe for children. More research is needed to inform policy decisions on this type of legislation and therefore, at this time, decisions to regulate helmet use depend on balancing available evidence, individual freedoms, and the public health benefits of cycling as a recreation and sustainable mode of transport *(67)*.



CASE STUDY

Box D: ***Improving safe road-user behaviour: road safety campaign benefits walking and cycling, Thailand***

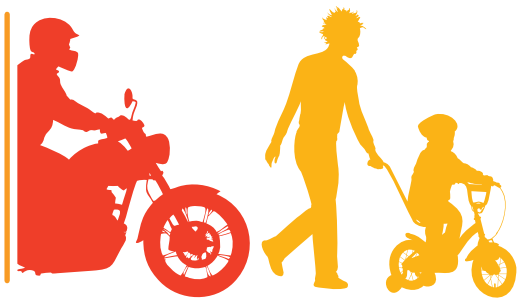
Since 2015, Thailand's road safety campaign has made significant strides in reducing road traffic fatalities and injuries. The initiative focuses on improving road infrastructure, reducing speed limits, enhancing law enforcement, and conducting mass media campaigns to raise awareness about road safety. Ongoing monitoring and data collection enable targeting of interventions and tracking progress. Over 450 specialists have been trained, and safety assessments of over 1 000 km of high-risk roads have led to targeted improvements.

Mass media campaigns have played a pivotal role in changing public perception, Highlighting the dangers of speeding, drink–driving, and the importance of helmet use has increased awareness and compliance.

Visible improvements in road safety, such as better lighting and safer intersections, have reinforced public trust in these initiatives. By creating safer pedestrian pathways and dedicated cycling lanes, the road safety initiative has encouraged more people to walk and cycle in Bangkok. The campaign, undertaken in collaboration with Bloomberg Philanthropies has led to a reduction in road traffic deaths and serious injuries from implementing a comprehensive municipal approach to road safety (www.who.int/docs/default-source/documents/the-power-of-cities/bangkok-case-study-final.pdf). In Thailand, road crash fatalities are reported to have decreased by approximately 6% per year between 2016 and 2021.

Illustrative photo: bike parking on the pavement alongside pedestrians, Bangkok, Thailand, by AlivePhoto/Shutterstock

Speed matters
Set speed limits to 30 km/h in areas where pedestrians, cyclists, and vehicles frequently mix *(68)*



Policy action area 5: **Protect and prioritize walking and cycling**

Objective

To optimize street use in ways that encourage more people to walk and cycle by creating safe, accessible, and attractive environments for all users while reducing the dominance of motorized vehicles.

Rationale

For many years, streets have been designed primarily to facilitate motor vehicle traffic, often neglecting the needs of pedestrians and cyclists. This has made urban areas less inviting, less safe and less accessible for non-motorized travel. Properly designed streets, supported by legislation and public communications, can reverse these trends, creating "people-friendly" spaces that encourage walking and cycling. Social movements and communities increasingly advocate for such changes (see case studies, Box E).

Ways to optimize streets for the benefit of walking and cycling

- **Prioritize walking and cycling:** Legislation that limits vehicle access and creates environments where walking and cycling are prioritized over motorized vehicles can make streets safer and more welcoming for those on foot or bicycle. Legislative measures can set clear priorities for pedestrians and cyclists, especially in busy urban centres and areas around key destinations.
- **Maintain safe and accessible pathways:** Wide, smooth, and unobstructed paths are essential for safe walking and cycling. Activities like street vending and outdoor cafés should be regulated to avoid obstructing these pathways. For example, legislation should ensure that outdoor seating maintains enough space for pedestrians, including those using mobility aids, to pass safely. In addition, construction sites should be required to maintain the provision of adequate, safe cycling and walking facilities.
- **Regulate parking and reducing vehicle traffic:** Enforcing parking legislation, including the incursion of vehicles on pedestrian footpaths or cycle lanes, and reducing vehicle traffic through pricing measures or congestion charges helps preserve space for pedestrians and cyclists while reducing air pollution and noise. Additionally, providing safe, easy, accessible bicycle parking near key destinations and public transport hubs can increase use for the "first" and "last" mile connectivity, and further reduce car use *(69, 70)*.
- **Implement access restrictions and car-free zones:** Restricting vehicle access, especially through pedestrianization and car-free zones, promotes cleaner, quieter streets and is an effective tool for encouraging walking and cycling while discouraging short car journeys. These measures can be tailored to limit specific types of vehicles, based on criteria such as fuel type or emissions levels, further improving the urban environment by reducing air and noise pollution. The most impactful strategies involve permanently closing roads to motorized traffic and creating pedestrian-only zones. These "car-free" areas are increasingly popular in cities worldwide, as they create safer, more accessible spaces for people, enhance public health, and contribute to a more sustainable urban lifestyle.

Key actions to take

Regulatory frameworks and access restrictions

1. **Review legislative frameworks:** Assess, and where needed update, existing legislation, regulations and local by-laws to introduce vehicle access restrictions. These could include limits based on fuel types, emissions levels, or road-user charges for peak times, with the goal of reducing private vehicle access and prioritizing walking, cycling, and public transport options.
2. **Strengthen parking legislation:** Implement legislative measures and introduce or adjust parking fees, penalties, and enforcement to reduce illegal parking that obstructs walking and cycling paths. Where possible, direct revenue from parking violations to improving pedestrian and cyclist infrastructure, including secure bike parking.
3. **Facilitate temporary street closures:** Support community-driven, temporary street closures to create vehicle-free areas for activities such as active play, urban sports, community markets, or other events. These closures could be one-off or regular, such as weekend pedestrian zones or school-area restrictions.

Street design and infrastructure

4. **Redesign street networks:** Repurpose road space to prioritize walking and cycling. Guided by established street design standards this could include converting traffic lanes into cycle lanes, widening footpaths, adding street furniture, greenery and cycle parking, and creating permanent car-free zones.

Maintenance and accessibility of footpaths and cycleways

5. **Regulate activities on footpaths and cycleways:** Ensure legislative measures prevent activities such as street vending or encroachments from obstructing pedestrian and cycling paths. Properly manage these activities to maintain safe, clear pathways.
6. **Maintain street infrastructure:** Regularly inspect and maintain footpaths and cycleways to address surface issues, lighting, and any impediments or hazards. Ensure responsible authorities have sufficient capacity and resources to carry out timely maintenance.
7. **Implement garbage disposal and collection:** Implement effective systems for regular waste disposal and cleaning in areas with heavy pedestrian or cycle traffic, especially in retail, restaurant, and street-vending areas.

Ensuring accessibility: Vendors and cafés with outdoor presentation of goods or seating should maintain a minimum width of footpaths to ensure clear passage for pedestrian traffic, including those using mobility aids.

CASE STUDY

Box E: ***Protect and prioritize walking and cycling, Brazil and Spain***

City of People (*Cidade da Gente*), Fortaleza, Brazil

The city of Fortaleza, Brazil, initiated the "City of People" initiative to enhance road safety and promote walking and cycling by reclaiming public spaces from motor vehicles. Launched in 2017 with the "Cidade 2000" project, the programme started with the temporary repurposing of underused streets and parking areas, using low-cost materials such as paint, cones and benches. Many initial interventions, such as reduced speed limits to 30 km/h in some zones, kerb extensions, redesigned intersections, and expanded pedestrian zones have since become permanent.

Between 2012 and 2023, Fortaleza's cycling network expanded five-fold, from approximately 70 km to more than 400 km, with 40% of residents living within 300 m of a cycle path. Pedestrian activity has surged, with walking increasing by 109% in redesigned areas. Children's outdoor play more than doubled in some locations, reinforcing the social benefits of safer streets. These impacts have been achieved in collaboration with Bloomberg Philanthropies Initiative for Global Road Safety (www.bloomberg.org/public-health/improving-road-safety/#progress) and NACTO's Global Designing Cities and the Streets for Kids Initiative (https://globaldesigningcities.org/streets-for-kids).

Restricting cars in the city centre for 20 years, Pontevedra, Spain

The city of Pontevedra, northwest Spain, transformed from a congested and polluted area into a pedestrian-friendly environment by restricting vehicle access to essential services and residents' vehicles only, and decreasing speed limits. Around 3 km of car-free space around the historic city centre and other key areas has significantly enhanced the walkability and liveability of the city (www.politico.eu/article/pontevedra-city-pioneer-europe-car-free-future).

Pedestrianization was complemented by widening the sidewalks and creating pedestrian plazas to enhance walkability. One of the key enablers of the city's car-free strategy was encourage the public to view cars as "guests on the streets" rather than vehicles to which the streets belong.

Illustrative photo: bicycles parked in Fortaleza, Brazil, by Windwalk/Shutterstock

Policy action area 6: **Facilitate integrated transport options**

Objective

To provide equitable, safe, and efficient public transport options that integrate cycling, promoting multi-modal travel for sustainable mobility.

Rationale

Most public transport journeys involve some walking, but by adding bike-friendly infrastructure – such as parking and bicycle rentals at stations or allowing bicycles on buses and trains – cycling can be incorporated into long-distance trips. Integrating walking and cycling with public transport offers a flexible solution for trips that are too long for these modes alone *(6)*. This approach encourages greater public transport use by making stations and stops more accessible without the need for private vehicles. However, it is estimated that only about half of the world's population have access to public transport, though there are wide regional variations *(71)*.

Facilitating multi-modal transport promotes equitable mobility, especially for those without access to cars, while reducing traffic, pollution, and carbon emissions. A seamless connection between walking, cycling and public transport ensures reliable and active transport options for more people. The walking and cycling distance to the transport hubs – the "catchment area" – strongly influences frequency of public transport use. SDG 11 recognizes the importance of public transport, aiming to provide universal access to safe, affordable, and sustainable systems, particularly benefiting vulnerable populations.

High-quality, comprehensive public transport services, particularly those with trains or dedicated bus lanes, can shift travel preferences away from private cars. Indeed, the quality of public transport, including travel times and the frequency of services, is a key driver of its use. Travel time differences between public transport versus private vehicles are particularly important for those who have a choice. For those dependent on public transport, improving frequency and reducing travel time are essential to access education, jobs, and improve quality of life (see case study, Box F).

Key actions to take

1. **Enhance public transport services:** Review public transport services to ensure they offer a competitive alternative to private motorized vehicles. Focus on safety, cleanliness, efficiency and affordability to encourage more usage. Introduce priority lanes for public transport and align action and funding to contribute to achieving SDG 11, which calls for making cities and human settlements inclusive, safe, resilient and sustainable.
2. **Introduce incentives for public transport use:** Explore potential incentives to encourage public transport use, such as free travel for children and older adults, free travel to sporting or cultural events, or free travel on certain days (e.g., weekends). Pilot these incentive schemes to assess their effectiveness before wider implementation.
3. **Implement bike-share schemes:** Assess the need and opportunities for introducing bike-share or bike-hire schemes in designated areas to provide efficient, affordable, and user-friendly services. This can encourage cycling for short trips and support integrated multi-modal transport *(72, 73)*.
4. **Improve intermodal integration:** Evaluate the level of support for integration between all public transport modes, including bike-share schemes where available. Aim to provide seamless connectivity, such as through integrated ticketing systems, to make multi-modal travel more convenient.
5. **Facilitate carriage of bicycles on public transport:** Review current provisions for allowing bicycles to be carried on trains, buses, and trams. Assess relevant legislation, space availability at peak times, pricing, and ease of use. Also, review end-of-trip facilities, such as bike storage and bike rentals, at public transport hubs.
6. **Improve access to public transport services:** Assess the "walkability" and "cycleability" of access to public transport services to identify opportunities for improving "first" and "last mile" connectivity. Evaluate walking and cycling catchment areas[1] to public transport hubs and ensure the availability of secure cycle parking, in line with the principles of transit-oriented development. Improving access to public transport must also consider access for people living with disability, older people, or those with mobility issues.

1 *Geographic zones around transit stations or stops that can be conveniently accessed on foot or by bicycle within a reasonable time or distance. These areas define the potential user base of a transport hub and are typically measured as 400-800 m radius for walking and 2–5 km radius for cycling.*

CASE STUDY

Box F: ***Walking and cycling integrated with public transport, Dar es Salaam, United Republic of Tanzania***

To enhance urban mobility, the city of Dar es Salaam, United Republic of Tanzania, has strengthened the integration of public transport with walking and cycling as part of the Bus Rapid Transit (BRT) system. The new corridors are designed with parallel, well-connected bike lanes and improved wide sidewalks, ensuring safe and convenient access for pedestrians and cyclists. Phase 1 opened in 2016, with 29 buses and five terminals. Since opening, the BRT has reduced travel times and improved safety for commuters, cutting a 20 km, 3-hour journey to around 45 minutes and reducing car use and emissions by providing affordable, inclusive and safe travel for the city's more than 8 million residents.

In addition, the United Republic of Tanzania, in collaboration with the World Bank and the International Road Assessment Programme (iRAP) under the Bloomberg Initiative for Global Road Safety, undertook "star rating" assessments of existing roads prior to the BRT's construction to provide baseline data and inform development (https://irap.org/2024/02/tanzanias-brt-transformation-celebrated/). This assessment showed that existing roads were rated 2-stars or worse for 92% of pedestrians and 66% of bicyclists – aligning with recorded crash data showing pedestrian fatalities represent almost 60% of all road user fatalities.

Safer Roads Investment Plans were developed to further enhance safety with prioritized and cost-effective counter-measures to prevent fatalities and serious injuries over the 20-year life of the infrastructure.

Illustrative photo: pedestrians and public transport near the Ilala central business district in Dar es Salaam, United Republic of Tanzania, by Andy Soloman/Shutterstock

Policy action area 7: **Promote and incentivize walking and cycling**

Objective

To inspire individuals and foster a cultural shift towards walking and cycling by promoting the health, environmental, and community benefits of these activities, and addressing barriers.

Rationale

Positive and encouraging community-wide public education and awareness campaigns are a vital part of a comprehensive strategy to increase walking and cycling as viable forms of transport, both as enjoyable exercise and as active recreation (see case studies, Box G). Campaigns can address perceived barriers as well as benefits, be tailored to the target audience and link to local opportunities and programmes. Well-designed campaigns can build knowledge, address misinformation, increase awareness and shift attitudes by highlighting the benefits of regular walking and cycling and building positive social norms. Using multiple traditional and social media communications channels can also effectively inform all road users about safe road use behaviours and the penalties for non-compliance with traffic rules, contributing to road safety. Campaigns can also be used to build public support for policy changes aimed at creating safer roads and investment in walking and cycling infrastructure.

Schools and workplaces are ideal for promoting walking and cycling and integrating it into daily routines, fostering lifelong habits, especially in children and their caregivers. Well-planned campaigns and initiatives in these key settings can encourage active travel and should be developed with community engagement and linked to wider local, city-wide and national initiatives.

Promotional events, such as "car-free" days, give people the chance to experience walking and cycling in safe, enjoyable environments and can foster confidence and inspire people to incorporate walking and cycling into their daily lives. Temporary street closures also highlight the potential for alternative uses of public spaces and help generate public support for policies and initiatives aimed at reducing vehicle traffic and making streets more inviting for walking and cycling. Financial incentives, such as subsidies for bike purchases or tax incentives for active commuting can further encourage behaviour change and reduce car dependency.

Key actions to take

Public education, knowledge and awareness

1. **Generate behavioural insights:** Inform the planning and design of campaign content with good information on the psycho-social determinants of walking and cycling in the target audience and local context. This enables campaigns to effectively address any existing biases and knowledge gaps while strengthening desired social norms.
2. **Conduct regular campaigns:** Conduct sustained public education and awareness campaigns highlighting the mental, physical, environmental, and economic benefits of walking and cycling. Educate the public about road safety, relevant legislation, and penalties for non-compliance, promoting a culture of health and safety for all road users.
3. **Engage the media:** Raise awareness of the benefits, existing barriers and policy solutions to increasing safe walking and cycling by briefing journalists, influencers, and community champions to effectively widen the reach of messages.
4. **Conduct community training programmes:** Assess the needs for cycle training of key population groups, e.g. training children in safe cycling, and training cyclists and motorists on road rules and cyclist and pedestrian safety.

Community events and initiatives

5. **Organize promotional days:** Organize promotional events such as "car-free" days and "open streets" to encourage walking and cycling, helping residents explore alternative travel arrangements and shifting mindsets away from regular motorized transport use.

School and workplace programmes

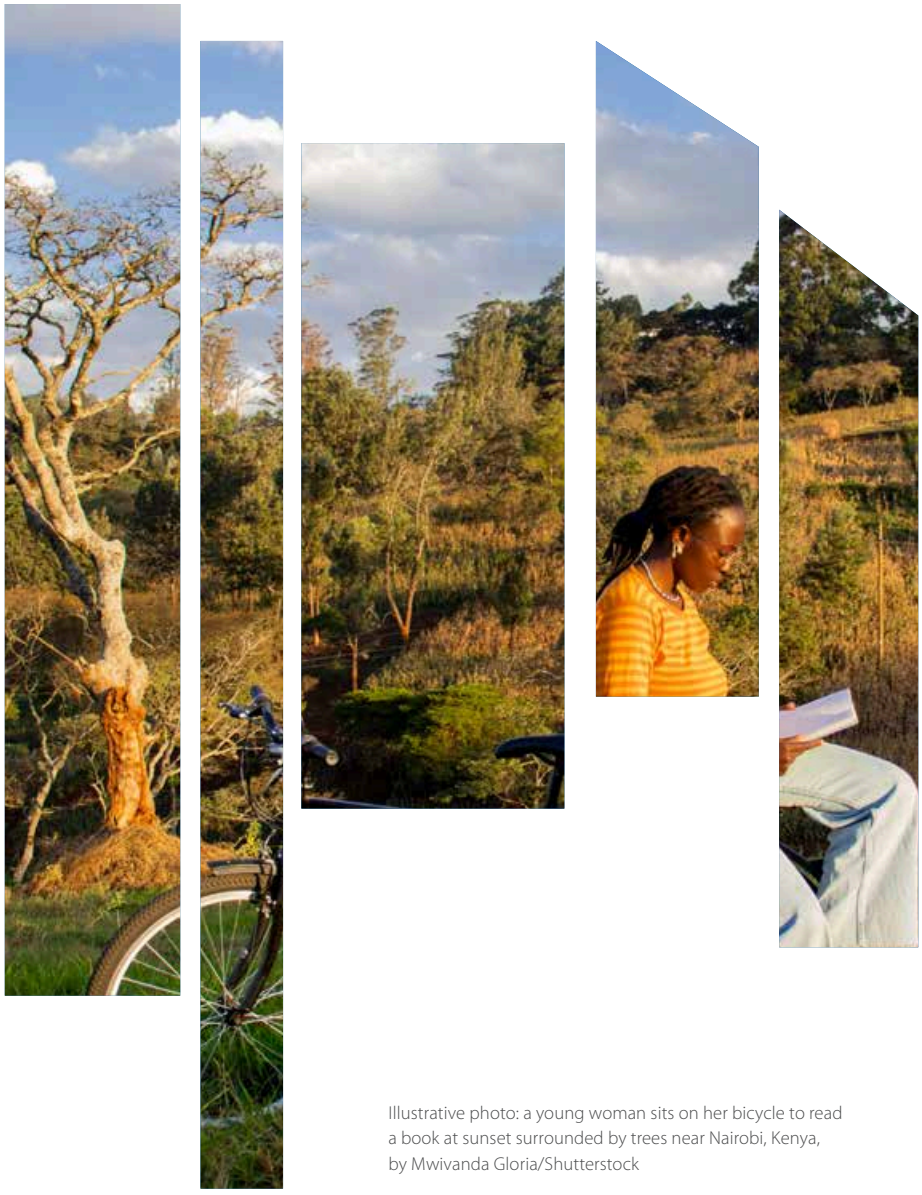
6. **Implement active travel plans in education settings:** Develop and implement travel plans that encourage students and staff (role models) to walk or cycle all or part of the way, including those with limited mobility. This may include initiatives like supervised "walking buses" or "cycle trains" and school-based education to help children acquire safe walking and cycling skills.
7. **Improve end-of-trip facilities:** Provide sufficient end-of-trip facilities at schools and workplaces, including secure cycle parking, changing rooms and showers if required (depending on climate, distances etc.) to support and encourage cycling. Work with local authorities, neighbouring businesses, and other partners to improve walking, cycling, and public transport to workplaces.
8. **Provide staff incentive programmes:** Develop and promote programmes that subsidize access to bicycles for short-distance business travel or offer discounted cycle purchases, such as cycle-to-work programmes. It is important to include local staff members in communication campaigns as local role models to indicate that this is not only for people in other cities or areas, but it also for (senior) leadership within their own organization.

Road safety

9. **Conduct road safety campaigns:** Conduct public communication campaigns and community engagement strategies to raise awareness of the primary causes of road deaths and injuries and increase understanding of safe road user behaviour. Ensure these campaigns support road safety legislation, highlight enforcement measures, and foster community compliance.

Incentivize active travel

10. **Assess financial incentives:** Assess opportunities for implementing financial incentives such as subsidies for purchasing bicycles, tax breaks for commuters who walk or cycle, reimbursements for cycling equipment, or financial rewards for meeting walking- or cycling-trip goals. Consider testing and evaluating their impact through implementation across government authorities as well as encouraging private sector organizations to support more active transport on the part of employees and within their supply chains.



Illustrative photo: a young woman sits on her bicycle to read a book at sunset surrounded by trees near Nairobi, Kenya, by Mwivanda Gloria/Shutterstock

CASE STUDY

Box G: ***Promote and incentivize walking and cycling, Austria, Colombia, India, and Saudi Arabia***

The Year of Walking, Vienna, Austria

In 2014, the City of Vienna set a goal that by 2025 at least 80% of journeys in the city would be made by public transport, or walking and cycling. To help kickstart this ambition, Vienna declared the 2015 the "Year of Walking", dedicating the year to promoting the initiative, raising awareness and providing behaviour change opportunities to its citizens. Initiatives included mass distribution of maps of walking paths to show the city from a pedestrian perspective, and the development of a mobile app called *"Wien zu Fuß"* (Vienna by foot), providing a city walking guide and highlighting short routes by interests, distance and time (www.wienzufuss.at/wp-content/uploads/sites/3/2018/10/WzF_E_Report_2018_final.pdf).

The app also featured an activity-based reward system to encourage participation, and accumulated steps could be exchanged for vouchers redeemable at over 40 retailers and museums. Other features included a treasure hunt game where digital diamonds were hidden across the city, and by finding them a prize would be unlocked (such as a lottery ticket). Over 60% of the population considered the initiative "a good idea", with the app downloaded almost 12 000 times and over 194 million steps taken by participants.

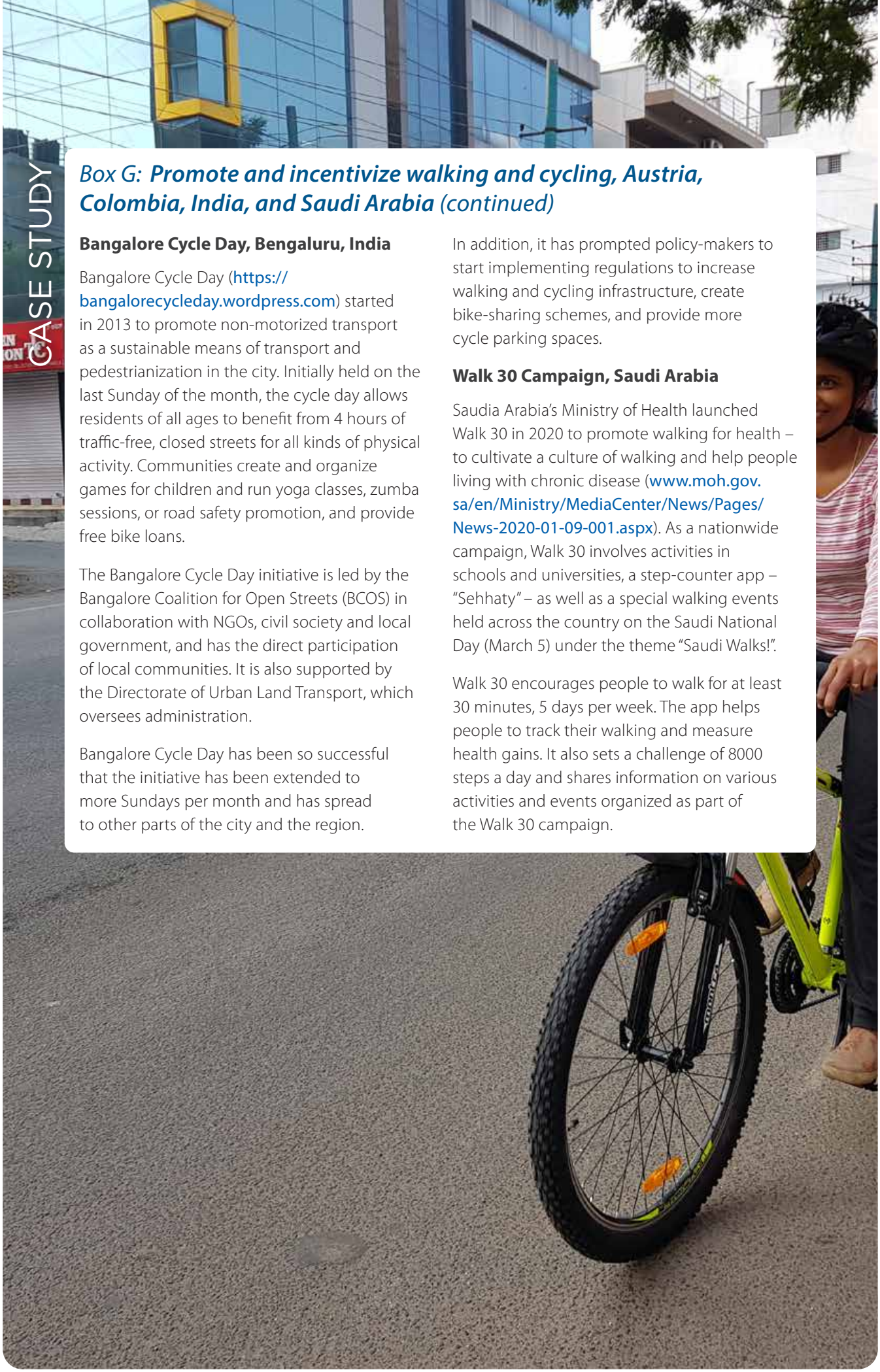
Ciclovía bicycle Sundays, Bogotá, Colombia and Latin America

In 2024, Bogotá's CycleWay (Ciclovía) celebrated 50 years of providing local communities (each Sunday and on some public holidays) with one of the largest regular opportunities for car-free walking and cycling. Across the city, 127 km of main streets are closed to traffic to promote walking and cycling and other active recreation, including dance and fitness classes (such as yoga, pilates and zumba) in the more than 20 parks linked by the Ciclovía. Free bike rental encourages participation by people of all ages, while local vendors (often from low-income populations) take the opportunity to trade along the Ciclovía, benefitting economically. Evaluations of the Ciclovía estimate an average of 1.5 million participants per day in Ciclovía through cycling, walking, roller skating and other active pursuits. It has been estimated that every US$ 1 invested in Bogotá's Ciclovía generates US$ 3 in savings in terms of the health benefits associated with physical activity, projecting a net annual saving of US$ 13 million (www.weforum.org/stories/2024/11/50-years-ciclovia-open-streets-cycling-cars).

Cycling for daily transport has also increased, particularly since the COVID-19 pandemic, due to the city's efforts to make cycling routes more accessible and safer for everyone. This included providing protected cycle lanes in the city's main thoroughfare, Avenida Séptima, which has seen an increase from 35 to 1800 cyclists during peak hours.

Since the inception of the Ciclovía in Bogotá, mayors and cycle advocates in more than 400 cities have adopted the idea including Los Angeles, Santiago de Chile, Jakarta, and San Francisco (https://ciclopistas.com/en/blog/red-de-ciclovias-recreativas-de-las-americas-who-are-they). Opening streets for Ciclovía or similar initiatives requires collaboration across government jurisdictions (local and city) as well as departments – health, transport, sport and youth, and local communities.

Illustrative photo: a woman cycles on the road early in the morning on an empty road in Bangalore, India, by Kaarthikeyan.SM/Shutterstock



CASE STUDY

Box G: ***Promote and incentivize walking and cycling, Austria, Colombia, India, and Saudi Arabia*** *(continued)*

Bangalore Cycle Day, Bengaluru, India

Bangalore Cycle Day (https://bangalorecycleday.wordpress.com) started in 2013 to promote non-motorized transport as a sustainable means of transport and pedestrianization in the city. Initially held on the last Sunday of the month, the cycle day allows residents of all ages to benefit from 4 hours of traffic-free, closed streets for all kinds of physical activity. Communities create and organize games for children and run yoga classes, zumba sessions, or road safety promotion, and provide free bike loans.

The Bangalore Cycle Day initiative is led by the Bangalore Coalition for Open Streets (BCOS) in collaboration with NGOs, civil society and local government, and has the direct participation of local communities. It is also supported by the Directorate of Urban Land Transport, which oversees administration.

Bangalore Cycle Day has been so successful that the initiative has been extended to more Sundays per month and has spread to other parts of the city and the region.

In addition, it has prompted policy-makers to start implementing regulations to increase walking and cycling infrastructure, create bike-sharing schemes, and provide more cycle parking spaces.

Walk 30 Campaign, Saudi Arabia

Saudia Arabia's Ministry of Health launched Walk 30 in 2020 to promote walking for health – to cultivate a culture of walking and help people living with chronic disease (www.moh.gov.sa/en/Ministry/MediaCenter/News/Pages/News-2020-01-09-001.aspx). As a nationwide campaign, Walk 30 involves activities in schools and universities, a step-counter app – "Sehhaty" – as well as a special walking events held across the country on the Saudi National Day (March 5) under the theme "Saudi Walks!".

Walk 30 encourages people to walk for at least 30 minutes, 5 days per week. The app helps people to track their walking and measure health gains. It also sets a challenge of 8000 steps a day and shares information on various activities and events organized as part of the Walk 30 campaign.

Illustrative photo: a woman cycles on the road early in the morning on an empty road in Bangalore, India, by Kaarthikeyan.SM/Shutterstock

Illustrative photo: green traffic lights for pedestrians and cyclists with green trees in the background, by BTL/Shutterstock

Section 3: **Key enablers for successful implementation**

This section outlines a set of key enabling factors essential for the successful implementation of the policy options provided in this toolkit. Because implementation requires actions across multiple sectors, no single enabler will be effective in isolation from others. Instead, securing and strengthening each enabler will yield the greatest results. Users of this toolkit should evaluate their current situation in relation to the enabling factors outlined in this section to determine which are most crucial in their specific context and which need enhancing to advance provision of safe and enjoyable walking and cycling environments for all.

A significant barrier to implementing some of these recommendations is that it might require "undoing" existing infrastructure. Identifying entry points is a critical first step – this may involve eliminating outdated policies and practices to make room for new approaches that put active transport as a priority. The COVID-19 pandemic demonstrated that change is possible, and cities showed it can happen rapidly. In response to the need for physical distancing, many cities introduced temporary measures such as pop-up cycle lanes, and pedestrianized streets, alongside incentives for bicycle purchase and repair. The challenge now is to make these changes permanent, creating environments where walking and cycling are integral to daily life.

Governance and coordination

Strong leadership at all levels of government is essential for ensuring that walking and cycling are prioritized in policy decisions and resource allocation. Leaders should advocate for the multiple benefits these activities provide, as well as equity, and encourage a shift away from the traditional dominance of motorized transport in decision-making processes.

To achieve this shift, it is necessary to change perceptions and values around walking and cycling. This requires political leadership, including visible support and bold decision-making. Leadership from nongovernmental entities can also play a crucial role in building this support.

Good governance refers to the mechanisms and processes to support and sustain effective selection, implementation and evaluation of policy options. Effective governance mechanisms should be established to coordinate actions across multiple sectors and stakeholders over time and be designed according to local contexts. They should also aim to perform the following key functions:

- **Setting objectives and targets and reporting progress against them:** Walking and cycling should be integrated into all relevant policy and strategy documents across multiple sectors to create a coherent and aligned framework. Establishing time-bound, measurable targets and key performance indicators is crucial for tracking progress. These metrics ensure transparency and accountability, and help to monitor the successful implementation of policies and the growth in walking and cycling activity.

- **Strengthening leadership and clarifying roles:** Developing leadership from across all sectors and levels of government to broaden the support base for policy actions can ensure their successful implementation and long-term sustainability. Additionally, clearly defining the roles and responsibilities of each government department and nongovernmental stakeholder is crucial for coordinated action. This ensures all entities understand their contributions, leading to more effective and cohesive policy implementation.
- **Aligning and coordinating stakeholders:** Good governance requires a participatory approach and places importance and value on fostering a sense of ownership and contribution from each sector. It also means engagement with government, community and private sector stakeholders and efforts to align their respective interests. This requires identifying the interests and concerns of partners and working collectively to define priority policy options, objectives, and desired outcomes. Effective communication and coordination among stakeholders are equally important to facilitate knowledge exchange and sustain coherent policy implementation.
- **Regular reporting:** Promoting joint efforts and consistent reporting on policy progress and implementation across all government levels will maintain visibility and momentum. Promoting and sharing knowledge and local case studies can illustrate impact and encourage broader support.
- **Engaging civil society:** Involving civil society and local community representatives in the policy process can help leverage local knowledge and networks, fostering ownership and enhancing the effectiveness of policies. This is critical for successful policy implementation and is addressed in more detail in the next subsection.

At a pan-regional level, countries and stakeholders can collaborate to promote walking and cycling, leverage synergies, and benefit from sharing experiences and solutions to common challenges. In the European region, a Pan-European Master Plan for Cycling Promotion *(74)* was developed in 2021 and a Pan-European Master Plan on Walking *(75)* in 2024 (see Box H).

CASE STUDY

Box H: ***Pan-European master plans for cycling and walking, European Region***

The 2021 Pan-European Master Plan for Cycling Promotion (https://unece.org/sites/default/files/2023-03/MASTERPLAN_2021-05-20-II_BF%203%20June_0.pdf) and the 2024 Pan-European Master Plan on Walking (https://unece.org/sites/default/files/2024-12/BMK_THE_PEP_MP_Walking_UA.pdf) are examples of regional collaboration to support national and subnational policy development and action on walking and cycling.

They were developed under the framework of the Transport, Health and Environment Pan-European programme (www.who.int/europe/initiatives/transport-health-and-environment-pan-european-programme-(the-pep) (The PEP) with support from Austria, France and Netherlands (Kingdom of the), and UNECE Sustainable Transport, the Environment Division, the World Health Organization Regional Office for Europe, the EU Commission's Directorate-General for Mobility and Transport (DG MOVE) as well as national experts and non-government organizations such as the WALK 21, the European Cyclists' Federation (ECF) and private sector through the Confederation of the European Bicycle Industry (CONEBI).

Both plans aim to promote walking and cycling as clean, safe, healthy, active and inclusive forms of mobility and transport, and thereby contribute to building sustainable livelihoods, a better environment, greater social inclusion and economic prosperity, and overall improve the quality of life of citizens across Europe.

Both masterplans provide a set of practical recommendations to help countries develop and implement national policies for walking and cycling respectively. In order to track progress, a common methodology is proposed, alongside a minimum set of comparable, reliable and harmonized indicators, including modal share of cycling and walking, number of national cycling and walking plans, and number of fatalities and serious injuries of cyclists per kilometre cycled annually, using 2020 as the baseline year.

Illustrative photo: a cyclist rides along a scenic mountain path in the Dolomites, Italy, by Tunatura/Shutterstock

Community and civil society engagement

Meaningful community engagement is an essential enabler for the successful implementation of policies that affect local environments in which people live, work and play. Engaging key community leaders and networks helps build the broad support that is often necessary for policy success. So, in addition to partnerships across government agencies – such as health, transport, urban planning, roads, regional development, and local municipalities – other sectors, including civil society, the private sector, academic institutions, and advocacy groups, should be actively involved.

Governance mechanisms for community and civil society engagement must be mindful of stakeholders with vested interests or potential conflicts of interest. For example, private commercial entities may influence policy directions in ways that conflict with public health or environmental objectives. Careful evaluation of these interests, coupled with transparent decision-making processes, helps anticipate challenges and ensures alignment with policy goals.

Appropriate timing of consultation is key to effective community and stakeholder engagement. Legal or procedural requirements may dictate when to consult across government agencies, other stakeholders, or the general public. Clear, fair, and inclusive procedures should be established to manage conflicts of interest and support meaningful engagement throughout the policy cycle. This includes opportunities for participation at every stage, from planning and programme design, to implementation and evaluation.

The approach to community engagement will vary based on local context, culture, and community networks. NGOs can provide valuable resources and strategies to enhance engagement efforts. Regular communication channels, such as coordination meetings and updates on national and local progress, can help foster collaboration, sustain engagement, and strengthen collective ownership of policy implementation. Identifying allies and champions at the community, political (e.g., ministers or city mayors), and operational levels can further drive momentum and ensure commitment to policy goals.

Effective partnerships, collaboration, and community engagement are essential to achieving the policy objectives outlined in this toolkit. These efforts promote integrated and sustainable outcomes, ensuring walking and cycling are supported by diverse stakeholders dedicated to creating safer, healthier, and more sustainable environments.

Knowledge, skills and capacity

Enhancing knowledge, skills, and capacity across sectors is essential for improving environments that support and promote walking and cycling. This includes equipping professionals with the technical knowledge needed to design and implement effective policy actions.

For example, urban and transport planners, who play a central role in land use and infrastructure development, require the skills, knowledge, and resources to prioritize walking and cycling within broader urban development projects and multimodal transport systems. Training should focus on understanding the barriers and needs of pedestrians and cyclists, including the use of behavioural insights and how to effectively integrate these priorities into planning and design.

The health sector plays a complementary role by advocating for the physical and mental health benefits of walking and cycling. Health-care professionals can promote these activities as preventive measures against NCDs and mental health challenges. To do so effectively, they need training on how to advocate for active transport policies across sectors and how to integrate walking and cycling promotion into public health campaigns and clinical practices.

Conducting in-service training workshops can help strengthen multisectoral collaboration and effective community engagement, as well as develop technical skills in the use of data and evidence in policy decision-making, communications, and advocacy. Training can increase knowledge on the multiple health, environmental and economic benefits of joined-up policy actions on walking and cycling, and can strengthen the use of technical tools such as how to conduct cost-benefit analyses of active transport initiatives using the WHO Health and Economic Assessment Tool (HEAT) *(76)* for walking and cycling (Box 7).

Box 7. WHO Health Economic Assessment Tool (HEAT) for Walking and Cycling

Estimating the economic value of investing in walking and cycling is vital for decision-makers and for evidence-based advocacy. The WHO Health Economic Assessment Tool (HEAT) (https://iris.who.int/handle/10665/379361) helps policy-makers at all levels assess the cost-benefit of increasing walking and cycling in a defined population. HEAT helps users, including those without expertise in health or environmental assessments, to calculate the economic cost saving of averting deaths due to NCDs and road crashes as well as savings due to reduced carbon emissions through fewer motor-vehicle trips.

HEAT is based on robust scientific evidence, transparent assumptions, and adaptable parameters, making it suitable for diverse local contexts. It can be used to:

- estimate the economic value of current or past levels of walking and cycling;
- assess the benefits of planned interventions (e.g., a new bike network) by comparing "before and after" scenarios;
- model future scenarios to guide investment decisions.

This tool is available for use by transport planners, public health officials, and environmental experts, and offers valuable insights to support policy, planning, and investment decisions. Initially designed for Europe, HEAT now includes a global version tailored to low- and middle-income countries, and since 2021, the model also incorporates the health effects of air pollution and carbon emissions.

WHO has complementary tools for assessing air quality impacts, such as AirQ+ and CaRBonH, which can be used alongside HEAT for a comprehensive analysis of health and environmental benefits that can be found in Annex 2.

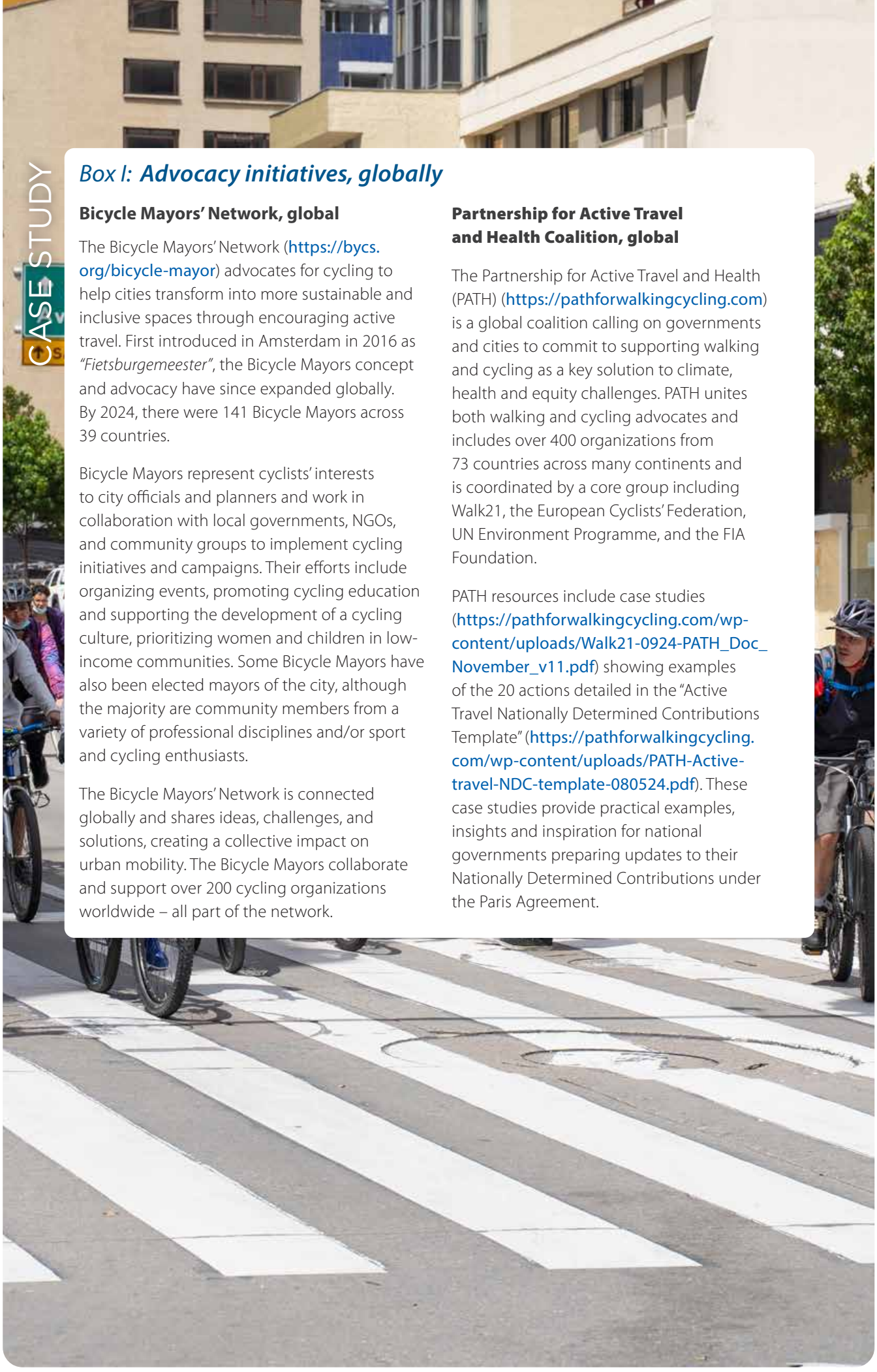
Advocacy

Clear and consistent advocacy messages about the benefits, challenges and policy solutions related to walking and cycling are crucial enablers of progress.

Advocacy encompasses both individual and collective actions designed to secure political commitment, policy support, and cross-sectoral collaboration. The aims of advocacy include shifting public and political opinion on the value of walking and cycling, achieving policy change, and securing relevant stakeholder and community support and participation. NGOs, action groups, and local campaigners play central roles. At the global level, the Partnership for Active Transport and Health (PATH) Coalition has brought advocates from both walking and cycling communities together to form a larger and unified advocacy forum. Recent PATH publications include Active Transport National Country Study Actions, and templates to assist countries that include walking and cycling initiatives in their national climate action plans in submissions of their Nationally Determined Contributions (a requirement of the Paris Agreement) *(77)*.

Professional bodies in medicine, public health, and transport also wield considerable influence and can use their platforms to advocate for the wide-ranging benefits of walking and cycling while promoting key policy initiatives. To be able to do so effectively, these groups require access to good data to support their advocacy of the health impacts of walking and cycling, and associated benefits such as reduced air and noise pollution, eased traffic congestion, and improved economic and social outcomes. Providing evidence-based materials, such as policy briefs on local context and cost-benefit analyses of infrastructure investments, is essential.

Coordinated advocacy campaigns and events can significantly shape social and political attitudes, generating stronger support for walking and cycling initiatives. Engaging ambassadors or "champions", alongside allies with shared interests, can amplify the impact of advocacy efforts. This approach has been effective in other public health initiatives, such as promoting seat-belt legislation, smoke-free environments, and free school meals. Leveraging community networks, organizations and stakeholders at all levels using traditional media and social platforms can create momentum for policy change, ensuring that walking and cycling are prioritized on public agendas (see case studies, Box I). Key advocacy strategies that can build support for walking and cycling initiatives while fostering an environment conducive to policy change and community engagement are detailed in Box 8.



CASE STUDY

Box I: ***Advocacy initiatives, globally***

Bicycle Mayors' Network, global

The Bicycle Mayors' Network (https://bycs.org/bicycle-mayor) advocates for cycling to help cities transform into more sustainable and inclusive spaces through encouraging active travel. First introduced in Amsterdam in 2016 as *"Fietsburgemeester"*, the Bicycle Mayors concept and advocacy have since expanded globally. By 2024, there were 141 Bicycle Mayors across 39 countries.

Bicycle Mayors represent cyclists' interests to city officials and planners and work in collaboration with local governments, NGOs, and community groups to implement cycling initiatives and campaigns. Their efforts include organizing events, promoting cycling education and supporting the development of a cycling culture, prioritizing women and children in low-income communities. Some Bicycle Mayors have also been elected mayors of the city, although the majority are community members from a variety of professional disciplines and/or sport and cycling enthusiasts.

The Bicycle Mayors' Network is connected globally and shares ideas, challenges, and solutions, creating a collective impact on urban mobility. The Bicycle Mayors collaborate and support over 200 cycling organizations worldwide – all part of the network.

Partnership for Active Travel and Health Coalition, global

The Partnership for Active Travel and Health (PATH) (https://pathforwalkingcycling.com) is a global coalition calling on governments and cities to commit to supporting walking and cycling as a key solution to climate, health and equity challenges. PATH unites both walking and cycling advocates and includes over 400 organizations from 73 countries across many continents and is coordinated by a core group including Walk21, the European Cyclists' Federation, UN Environment Programme, and the FIA Foundation.

PATH resources include case studies (https://pathforwalkingcycling.com/wp-content/uploads/Walk21-0924-PATH_Doc_November_v11.pdf) showing examples of the 20 actions detailed in the "Active Travel Nationally Determined Contributions Template" (https://pathforwalkingcycling.com/wp-content/uploads/PATH-Active-travel-NDC-template-080524.pdf). These case studies provide practical examples, insights and inspiration for national governments preparing updates to their Nationally Determined Contributions under the Paris Agreement.

Illustrative photo: cyclists ride along streets of the city that are closed to cars to allow bicycles to circulate freely in Bogota, Colombia, by Matthieu Cattin/Shutterstock

Box 8. ***Key advocacy strategies for walking and cycling***

- **Appoint ambassadors or champions:** Engage influential figures, such as political leaders, community advocates, or sports personalities to champion the walking and cycling agenda. They can lead advocacy efforts, raise public awareness and position walking and cycling as national and local priorities.
- **Disseminate evidence:** Build knowledge by sharing information on the multiple benefits of walking and cycling for short trips, exercise, and active recreation. Tailor information for different audiences, for example develop position statements, speak at conferences, contribute to community newspapers, newsletters and professional journals, and use traditional and social media to reach diverse audiences.
- **Conduct policy briefings:** Organize briefings for government ministries (e.g., health, transport, planning, finance) to demonstrate the social and economic returns on investments in walking and cycling. Utilize tools like the WHO Health and Economic Assessment Tool (HEAT) to showcase the impact.
- **Engage local communities:** Promote the benefits of walking and cycling to build support at local level. Increase public knowledge of necessary policy changes and actions by gaining better understanding of communities' perceptions of barriers to walking and cycling.
- **Encourage public debate:** Facilitate discussions in local forums, media, and public spaces to address concerns and diverse views within the community.
- **Highlight social and economic impacts:** Share evidence of the social and economic effects of walking and cycling. Use findings from environmental and economic impact assessments to demonstrate the outcomes of policy options and planning proposals.

Legislation

Legislation is a powerful tool that governments can use to enable and promote safe walking and cycling. Law formalizes obligations and rights, creating a legally binding framework that can apply to everyone. In the context of walking and cycling, legislation can often be used to ensure that provisions such as safe pathways, connected cycling networks, and pedestrian-friendly street designs are not just optional but are mandatory. This helps shift the conversation from approaches that are "nice to have" to those that are essential for public health and mobility.

Laws of different types (including a range of legal instruments such as national constitutions, statutes or legislation, regulations, standards, administrative or executive orders and local by-laws, defined in the Glossary as "legislation") create underlying structures that govern the policy options available to decision-makers, and can be used to bring specific policy options into effect (see case studies, Box J). Law is relevant to many of the recommendations in this toolkit, including in:

- establishing rules governing road use, including when walking, cycling or using a motorized vehicle;
- establishing rules governing street design;
- establishing priorities or factors to be considered by decision-makers in planning or other approval processes administered by government.

The law can also help change attitudes and behaviours. For example, prohibiting parking or other obstructions on footpaths and cycling lanes through legislation and issuing penalties or fines for violations can change public behaviour and expectations around road use. Similarly, setting and enforcing lower speed limits in areas with high pedestrian and cycling traffic can change driver behaviour, making roads safer and encouraging more people to choose active modes of transport.

Public health interventions such as tobacco control show how legislation can have a profound impact. Countries that have applied tobacco control laws in accordance with WHO's Framework Convention on Tobacco Control (WHO FCTC) *(78)* have seen significant reductions in smoking prevalence. This success illustrates how well-crafted laws, paired with robust enforcement, can promote healthier behaviours and protect public health.

In some countries, constitutions enshrine the right to the highest attainable standard of health, imposing a duty on the state to take actions to protect citizens. Laws that support safe walking and cycling, such as mandating the development of appropriate infrastructure and ensuring inclusive street design, contribute to fulfilment of this right. This rights-based framing underscores government responsibility to protect public health and safety through appropriate interventions. Even where the right to the highest attainable standard of health is not specifically recognized, a constitution may provide that the protection of public health is an objective or duty of government and afford the government powers to meet that objective.

However, for law to be effective, it must be backed by enforcement mechanisms. Meaningful provisions for enforcement should be built into legislation, with clear designation of agencies responsible for monitoring compliance and prosecuting violations. These agencies should have adequate authority to investigate breaches and apply meaningful penalties for non-compliance, including (to use road safety laws as an example), fines, licence suspensions, or even custodial sentences where appropriate. Funding and resources for enforcement are critical, as is ensuring that enforcement is carried out fairly, equitably and without discrimination.

At both national and subnational levels, governments can enact laws that promote walking and cycling by creating safer, more accessible public spaces and by changing road user behaviours through enforceable rules. Ensuring that these approaches are supported by adequate enforcement will enable a shift toward healthier, more sustainable modes of transport and contribute to broader public health, environmental, and social equity goals.

CASE STUDY

Box J: ***Enabling legislation, Mexico and Switzerland***

Rights to safe mobility and safe roads, Mexico City, Mexico

Until 2020, safe mobility and road safety were the exclusive domain of state and municipal governments. But in 2020 this changed when Mexico declared access to safe mobility a human right and Congress passed a constitutional amendment on the "Right to Safe Mobility and Road Safety" – the first of its kind in the region – which was quickly ratified by a majority of Mexican states (www.wri.org/insights/safer-streets-pedestrian-mobility-mexico). The amendment required the National Congress to adopt a comprehensive national law to protect that right, and so, in 2022, Mexico passed its "General Law on Mobility and Road Safety" (www.advocacyincubator.org/case-studies/mexicos-mobility-and-road-safety-law), incorporating speed management provisions consistent with WHO best practice, along with provision for child restraint systems, reducing drink–driving, and promoting helmet use and seat-belt use. This new law marked a major step forward by creating the legal framework necessary to advance road safety laws at national, state and municipal levels, while also raising minimum vehicle safety standards.

In 2023 the National Strategy for Mobility and Road Safety 2023–2042 was launched to ensure proper interpretation, regulation and application of the General Law on Mobility and Road Safety at the national level. Multiple states have updated their state laws on mobility and road safety to better comply with the general law.

Bicycle Path Law (Veloweggesetz), Switzerland

In 2018, Switzerland included cycle paths in Article 88 of the Swiss Constitution, also known as the "Velo Article", which originally only addressed constitutional provisions for footpaths and hiking trails. The aim was to create a comprehensive, connected network of cycle paths across Switzerland, promoting cycling as a sustainable mode of transport. Expanding on this, in 2023 the Swiss federal government added a specific Bicycle Path Law ("Veloweggesetz", www.pro-velo.ch/de/themen/velopolitik/veloweggesetz). It mandates a nationwide network of bike paths ensuring that cycling progress as seen in cities like Bern can be replicated across Switzerland. This law aims to create safer and more connected cycling environments and demands cantons (subnational level of governance) and the federal government to take responsibility in this. In Bern, initiatives aimed at enhancing cycling infrastructure and promoting cycling as a sustainable mode of transport led to a 35% increase in cycling in the period 2014–2017.

Illustrative photo: busy pedestrian walkway and cycle paths with parked bicycles in the Alameda Central, Mexico City, Mexico, by Santiago Castillo Chomel/Shutterstock

Funding and financing mechanisms

Long-term resourcing is essential to ensure sustained investment in implementing policy to enable safe walking and cycling opportunities for people of all ages and abilities. The costs associated with the walking and cycling infrastructure (i.e. footpaths and cycle lanes providing an interconnected network) are usually the most costly. Infrastructure also requires funding across the full project lifecycle, from the planning stage through to building and on-going maintenance. However, despite clear health and environmental benefits, funding for promoting walking and cycling, and particularly funding for infrastructure, remains inconsistent and often inadequate. This challenge is particularly pronounced in many countries where car-oriented transport policies dominate, and infrastructure for walking and cycling is seen as secondary rather than essential.

Governments (at all levels) play a key role and can use a wide variety of funding and financing mechanisms. In general, funding is about the source of funding provided by governments (national, city or local) or from other public entities. Examples of typical funding sources include tax revenues, user fees, and grants. Dedicated taxes like congestion charges and carbon levies, such as those introduced in London since 2003, can create stable funding streams. Funds from these taxes have been used to support expansion and improvements in the public transport service, contributing to a shift from private car use to public transport, walking and cycling in central and inner London.

Solutions to inconsistent and insufficient government funding include defining and ring-fencing budgets for walking and cycling to help protect the agenda when financial pressures arise. In Kenya, the Nairobi City Council Government indicated that at least 20% of existing and future transport budgets would be allocated to fund the council's non-motorized policy, including infrastructure and public transport services *(79)*. Other examples exist, including in Ireland where a commitment to allocate 10% of the transport budget to walking and another 10% to cycling was made in 2021 *(80)*. A subsequent change in government in late 2024 may however lead to some modifications (see case studies, Box K).

Financing mechanisms refer to raising upfront capital that is repaid over time, and are usually required for high-cost projects such as large-scale urban renewal and transport projects. Examples of financing mechanisms include loans, bonds, and public-private partnership models. These approaches can be developed by governments (at all levels) and involve collaborations with national and international development banks, international finance organizations, public capital markets and philanthropic bodies. Public-private financing models can attract investment in exchange for revenue-sharing agreements, sponsorships, branding, and maintenance contracts. International development and climate funds can also be pursued for support active transport efforts. While these sources can provide crucial support, they are not always sustainable or widely available. Local governments may also rely on ad hoc funding streams that can be unpredictable and lead to uneven infrastructure development.

Long-term, strategic approaches to funding walking and cycle policy actions are needed to achieve health and environmental gains. To support countries to explore opportunities and learn from recent efforts from across the world, WHO's report, *Investing in walking and cycling: learning from six city case studies*, provides further insights and six in-depth city case studies that showcase different approaches taken towards investing in walking and cycling policy action and infrastructure *(81)*.

CASE STUDY

Box K: ***Funding and financing mechanisms to promote walking and cycling, Ireland and the United Kingdom***

Investing in active travel, Ireland

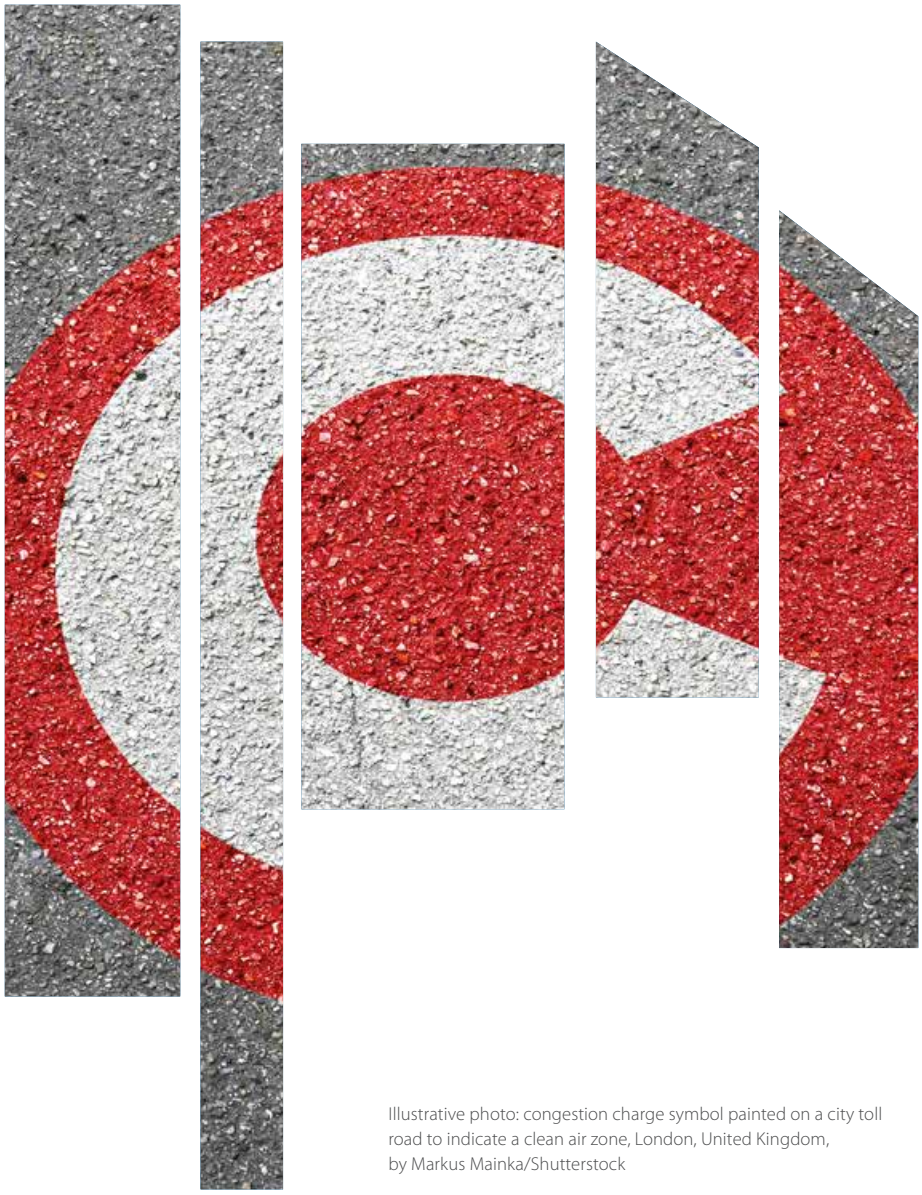
In 2022, Ireland's new National Sustainable Mobility Policy set out a strategic framework for active travel (walking and cycling) and public transport journeys to help Ireland meet its climate obligations. The policy aims to deliver at least 500 000 additional daily active travel and public transport journeys by 2030 and a 10% reduction in the number of kilometres driven by fossil-fuelled cars. The policy was accompanied by the Sustainable Mobility Policy Action Plan 2022–2025 (www.gov.ie/en/publication/848df-national-sustainable-mobility-policy) and significantly increased government funding – including a commitment to allocate 20% of the transport capital budget (approximately €360 million annually) to cycling and pedestrian projects over the lifetime of the government.

To provide funding support, in 2024, the National Transport Authority implemented an investment grant scheme for local authorities. This scheme supported approximately 800 active travel projects, contributing to the development of 1 000 km of new and improved walking and cycling infrastructure. Expenditure on active travel is estimated to reach nearly €1 million per day across whole-of-government spending to deliver nationwide walking and cycling infrastructure, including greenways, amounting to €3.6 billion over 10 years. An additional 248 staff across local authorities will help ensure these projects are delivered and that they meet the needs of the communities they serve.

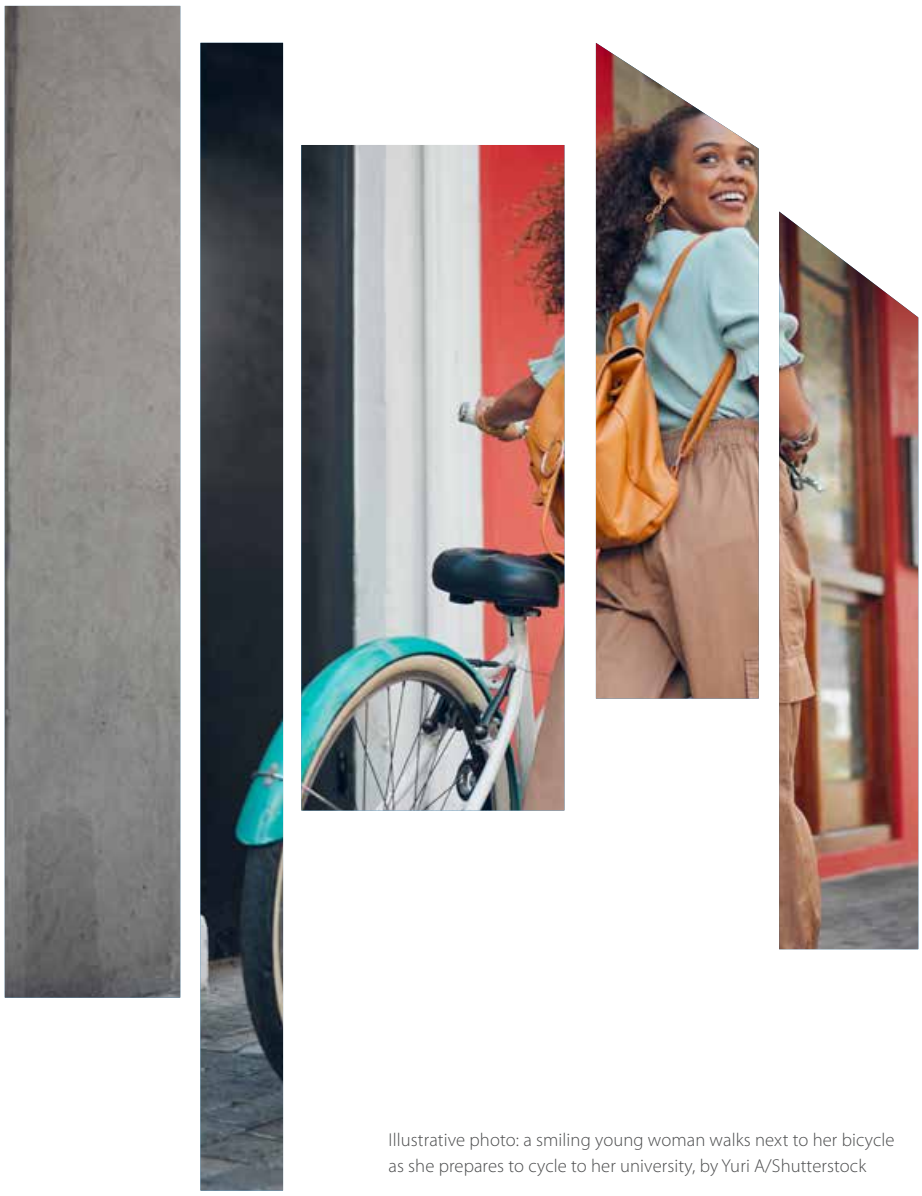
Safer Streets, London, United Kingdom of Great Britain and Northern Ireland

In 2017, the Mayor of London's Transport Strategy set the goal of achieving 80% of trips to be made by walking, cycling or public transport by the year 2041. To support this, the Liveable Neighbourhoods Programme (https://tfl.gov.uk/info-for/boroughs-and-communities/liveable-neighbourhoods) was established, under which boroughs could apply grants worth up to £10 million to implement long-term changes in town centres and surrounding residential areas. The programme supported the aims of the Mayor's Transport Strategy by funding local schemes to reduce car trips and improve neighbourhoods for walking, cycling and public transport. Although the Liveable Neighbourhoods Programme ended in 2024, to continue to improve road safety and improve public transport services, Transport for London have made £80 million of funding available through the Borough Safer Streets and the Better Bus Partnership programmes.

Illustrative photo: congestion charge and Ultra Low Emission Zone (ULEZ) warning signage in central London, United Kingdom, by Lorna Roberts/Shutterstock



Illustrative photo: congestion charge symbol painted on a city toll road to indicate a clean air zone, London, United Kingdom, by Markus Mainka/Shutterstock



Illustrative photo: a smiling young woman walks next to her bicycle as she prepares to cycle to her university, by Yuri A/Shutterstock

Section 4: Monitoring progress

Decision-makers rely on robust data to make evidence-based policy and funding choices. Regular collection and reporting of data set the foundation for successful monitoring and evaluation of policy and programmes. Data on travel behaviour, perceptions of safety and attitudes towards walking and cycling, for instance, can provide valuable insights for tracking progress and ensuring effectiveness, while an adequately funded, well-coordinated evaluation plan, aligned with clear policy objectives, is critical to capturing both intended and unintended impacts. This process should use a combination of qualitative and quantitative data, supported by relevant information systems.

Systematic, standardized data-collection mechanisms are crucial for ensuring accuracy, reliability, and comparability over time, providing a solid basis for decision-making and fostering confidence among stakeholders. Consistent data allow for the identification of trends, assessment of long-term impacts, and promotion of walking and cycling. Evidence generated through regular data collection can highlight the health, environmental, and economic benefits of these activities, strengthening advocacy efforts and securing ongoing support and investment. Key metrics to track include changes in behaviour, health outcomes, environmental impacts, and economic benefits. Below is a list of key elements on which to consider collecting data as part of ongoing monitoring and evaluation.

Tracking population levels of walking and cycling and travel behaviour

Collecting data on population levels of walking, cycling and travel behaviour is essential for monitoring trends and evaluating the effectiveness of policies. This data can be gathered through, for example, personal travel diaries, transport surveys, household or health surveys, or focused surveys on physical activity and active transport. Regardless of the method used, it is critical to design survey instruments with appropriate questions and response scales to ensure reliable and meaningful data. Regular data collection through, for example household travel, national health and transport surveys, and school-based surveys can provide valuable insights into attitudes towards walking and cycling as well as data to help track trends. They allow for the assessment of changes in activity levels, distances travelled, trip durations, and the share of walking and cycling in overall transport. These surveys can also identify short journeys that could potentially be shifted to walking or cycling, informing targeted policy and investment decisions. To date there is no global standard for the collection of data on levels of walking and cycling. Countries and regions collect data using different instruments and questions, which prevents comparability. The lack of reliable, consistent and comparable data worldwide should be addressed through international collaboration involving relevant UN agencies and stakeholders.

Community knowledge, attitudes, and perceptions surveys

Capturing local perspectives on the availability, safety, and appeal of walking, cycling, and public transport provide valuable insights into psychological, social and perceived environmental factors that encourage or discourage people from using these modes for travel and/or recreation. While perceptions and intentions may not always align with actual behaviour, these data can help decision-makers understand the motivations behind travel and recreation choices, and can, in turn, help demonstrate (where generated) community support for walking and cycling policies and initiatives. Questions can be included in national or subnational surveys, and/or data can be collected through community consultations and focus group discussions. The choice of methods should be aligned to the purpose of the data and local context.

Street-level monitoring of usage

Automated on-street counts provide precise data on changes in walking and cycling over time, offering a geographical context for assessing policy impact across different areas. These measurements can also capture details such as traveller demographics, trip purposes, and journey start and end points. Additionally, tracking use of other transport modes, such as private vehicles, taxis, or public transport, contributes to a comprehensive understanding of travel patterns.

Monitoring infrastructure quality

Regular evaluation of the provision and quality of walking and cycling infrastructure is crucial for understanding current conditions and identifying risks and areas for improvement. Using street design standards as a framework, on-the-ground street assessments can highlight priority areas and opportunities to create safer, more comfortable, and inclusive environments for walking and cycling. These data, collected and reported systematically, can guide infrastructure investments to ensure they meet the needs of all users.

Road traffic injuries and deaths

Regular evaluation and reporting on road traffic injuries and deaths are essential for developing strategies to enhance the safety of walking and cycling. While most countries collect data on road traffic fatalities, nonfatal injuries are often underreported or inconsistently recorded *(4)*. To effectively prioritize road safety activities, data should be disaggregated by mode of travel, age, sex, and the specific circumstances of the injury. Additionally, injuries from slips, trips, and falls on footpaths and streets, especially among older people or those who are frail, should be included *(82)*. However, data on injuries and fatalities alone do not provide a comprehensive picture of the dangers faced by pedestrians and cyclists. It is important to complement this with data on the perception of safety and "near-miss" situations. For instance, the absence of recorded incidents on streets perceived as dangerous might not indicate safety but rather that people avoid walking or cycling on these streets.

Air quality and noise pollution

Monitoring and reporting on air quality and noise pollution are important to understand the health risks faced by pedestrians and cyclists. These data help assess the impact of environmental factors on street users and how these risks change with the implementation of different policy actions. Combining data on street environments, public perceptions, travel behaviours, and road traffic injuries provides a comprehensive dataset to inform strategic decisions for increasing walking and cycling.

Global tracking and indicators

At the global level, WHO's *Global status report on road safety (4)* is the main mechanism for monitoring progress of the Decade of Action for Road Safety. Information is collected through a road safety survey administered by WHO to Member States in which they provide details on the number of traffic deaths and injuries; status of traffic laws and their enforcement; as well as other indications of progress aligned with global policy recommendations. In addition, WHO conducts a regular survey of Member States on policy actions related to physical activity as part of tracking progress on the prevention of NCDs and the implementation of policy recommendations outlined in the Global Action Plan on Physical Activity *(1)*. In 2022 the first *Global status report on physical activity (58)* combined data from both of these sources to present a comprehensive overview of Member States' progress on walking, cycling and physical activity. Combining data from these existing global data collection systems provides an initial monitoring framework for tracking progress on many, if not all, of the policy options outlined in this resource. A summary of key indicators related to walking and cycling from the *Global status report on physical activity (58)* is presented in Annex 3.

Further development of this set of indicators is likely in the coming years to address gaps. A list of the six voluntary performance targets adopted for the Decade of Action for Road Safety and which are directly or indirectly relevant to the provision, protection and enabling of safe walking and cycling is also provided in Annex 3.

Clearly set targets and agreed indicators are fundamental to tracking progress and strengthening government and stakeholder accountability. Monitoring progress of the policy options outlined in this resource will require further collaboration as well as investment in research and development to address the limitations of existing data and expand the scope to include new policy areas. Robust standardized instruments and data collection protocols are needed. The majority of countries will need to strengthen data and information systems to support implementation of the policy options outlined in this resource through stronger decision-making, effective resource allocation and monitoring of impact.

Illustrative photo: a woman walks with trekking poles beside a tranquil water body on a bright day in the Ebro Delta natural park, Tarragona, Catalonia, Spain, by Carlos I Vives/Shutterstock

Section 5: **Putting the toolkit into action**

This toolkit brings together the knowledge, strategies, and inspiration needed to make walking and cycling a safer, more accessible part of daily life. But its real value lies in how it is used. The actions, ideas, and examples shared throughout are not just for reference – they are a springboard for action.

The case for walking and cycling is compelling. These are simple, affordable, sustainable ways to move that improve health, reduce emissions, support equitable access to jobs and services, and bring life back to our streets and public spaces. But change does not happen automatically – it takes intention, coordination, and sustained effort.

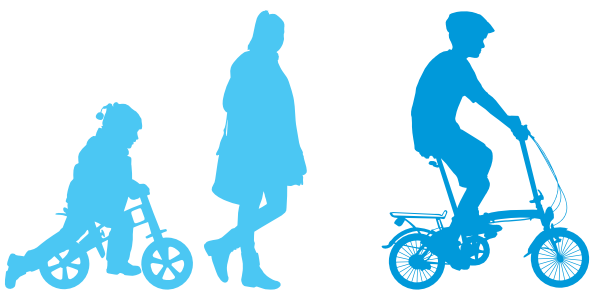
The policy options outlined in this toolkit are practical, scalable, and adaptable (see summary Fig.). Each country, city, or community can start from where they are by reviewing current policies, identifying gaps, and prioritizing actions that reflect local needs and realities. Every improvement, such as reducing speed limits, rethinking street lighting, or reallocating road space, can deliver tangible benefits and trigger broader transformation.

What matters is getting started – testing, learning, adapting, and scaling up what works. With political will, community input, and collaboration across sectors, even modest actions can help change how people move, how streets are designed, and how cities function.

Setting goals and tracking progress is a key part of the process. Knowing where you started, measuring what is being done, and sharing results help maintain momentum, build trust, and show the real-world impact of policy choices.

This toolkit offers a roadmap and aims to support users on all stages of the journey. We hope it will be used to challenge business as usual, to advocate for change, and to guide decisions – from the national policy table to the neighbourhood street corner.

Walking and cycling not just modes of transport but are also essential ways to create healthier, fairer, more resilient communities. Now is the time to take the next step – from intention to implementation. The opportunity is here to put this toolkit to work.



Summary of policy actions for promoting walking and cycling

1 Integrate walking and cycling into all relevant policies

1.1. Review and integrate walking and cycling in all relevant policies
1.2. Create a comprehensive understanding of the context (people and infrastructure)
1.3. Establish clear targets
1.4. Establish a cross-government coordination mechanism and accountability framework
1.5. Ensure monitoring and research

2 Provide safe and connected walking and cycling networks

2.1. Reform land use policies
2.2. Strengthen transport and mobility policies
2.3. Improve network connectivity
2.4. Ensure equitable access to green spaces
2.5. Show impact through demonstration projects

3 Design inclusive and safe streets for all

3.1. Develop or adopt street design standards
3.2. Mandate compliance
3.3. Conduct regular street audits and assessment
3.4. Prioritize street improvements
3.5. Ensure community involvement

4 Improve safe road user behaviour

4.1. Strengthen legislation affecting road safety
4.2. Empower local authorities
4.3. Strengthen enforcement
4.4. Equip enforcement authorities
4.5. Review and strengthen penalties

5 Protect and prioritize walking and cycling

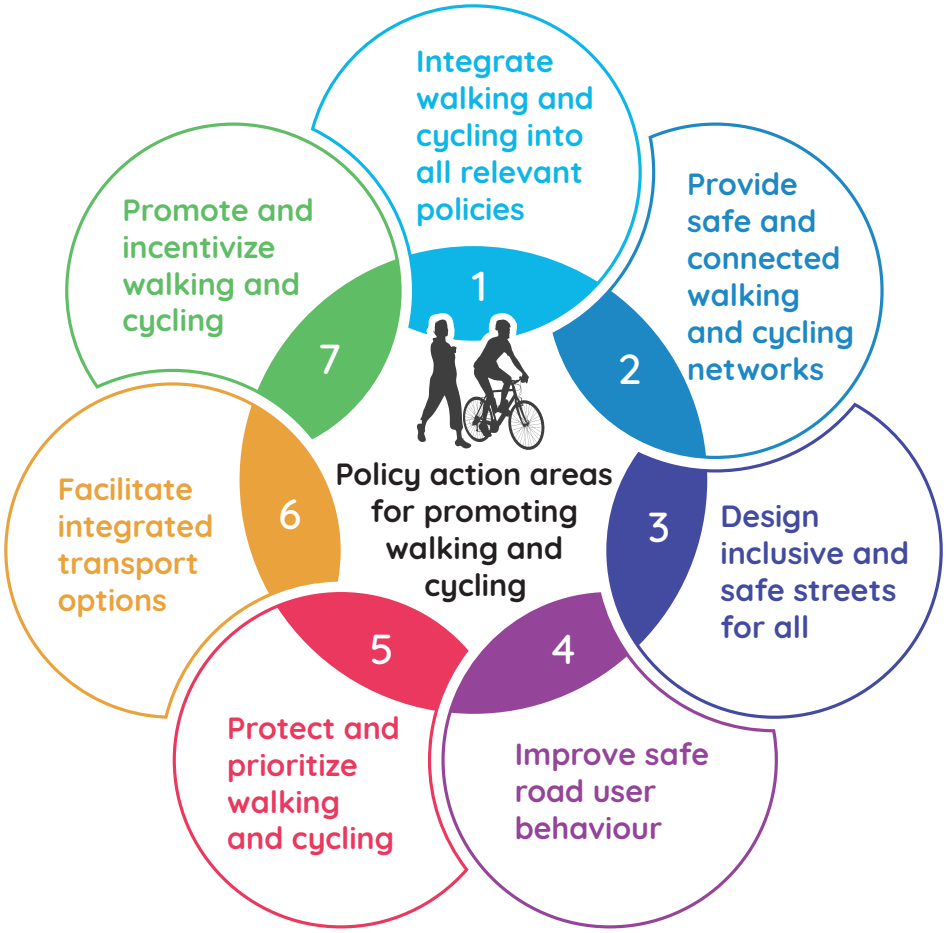
5.1. Review legislative frameworks
5.2. Strengthen parking legislation
5.3. Facilitate temporary street closures
5.4. Redesign street networks
5.5. Regulate activities on footpaths and cycleways
5.6. Maintain street infrastructure
5.7. Implement garbage disposal and collection systems

6 Facilitate integrated transport options

6.1. Enhance public transport services
6.2. Introduce incentives for public transport use
6.3. Implement bike-share schemes
6.4. Improve intermodal integration
6.5. Facilitate carriage of bicycles public transport
6.6. Improve access to public transport services

7 Promote and incentivize walking and cycling

7.1. Generate behavioural insights
7.2. Conduct regular campaigns
7.3. Engage the media
7.4. Conduct community training programmes
7.5. Organize promotional days
7.6. Implement active travel plans in education settings
7.7. Improve end-of-trip facilities
7.8. Provide staff-incentive programmes
7.9. Conduct road safety campaigns
7.10. Assess financial incentives


Integrate walking and cycling into all relevant policies
1
Provide safe and connected walking and cycling networks
2
Design inclusive and safe streets for all
3
Improve safe road user behaviour
4
Protect and prioritize walking and cycling
5
Facilitate integrated transport options
6
Promote and incentivize walking and cycling
7
Policy action areas for promoting walking and cycling

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Annex 1:
Development of this toolkit

This resource is one in a series of resources developed to support implementation of the policy recommendations outlined in the Global Action Plan on Physical Activity (GAPPA) *(1)*. GAPPA presents a comprehensive whole of government or "systems' approach to policies required to increase physical activity and outlines a large set of policy recommendations relevant to a range of audiences, across different sectors. This toolkit has extracted from GAPPA the key policy recommendations focused specifically on increasing opportunities for safe walking and cycling which is one specific policy objective within GAPPA. Other published toolkits supporting GAPPA have addressed specific settings (e.g., schools, primary healthcare) and specific populations (e.g., older adults). In each case, the policy recommendations developed for, and published in GAPPA serves as the anchor document.

GAPPA was developed through an extensive consultation process involving scientific experts, civil society and Member States, culminating in its adoption at the World Health Assembly through Resolution WHA71.6. It sets out four strategic policy areas and over 50 policy recommendations for implementation by Member States with support from WHO, and stakeholders. Since publication in 2018, a series of ACTIVE toolkits, have been developed to help a key audiences identify those policy actions most relevant to their areas of influence and implementation.

This toolkit on walking and cycling was conceptualized in 2019 and developed to highlight the collective action required to achieve the co-benefits of increasing active transport across health, sustainable mobility, urban design, and environmental agendas. Its purpose is to provide targeted audiences with a consolidated compendium, in a user-friendly format, of the specific policy actions from GAPPA that promote more safe walking and cycling for people of all ages and abilities. It also provides relevant cross linkages to other relevant UN and WHO policy frameworks *(2–14)* (e.g., road safety, air pollution, urban health).

As part of the process, an expert meeting was convened by WHO in November 2019 to assess stakeholder interest in a consolidated resource on walking and cycling policy actions and scope the structure of this compendium. Participants strongly endorsed developing this toolkit, emphasizing the value of positioning active transport policies as cross-cutting "win-win" strategies for both NCD prevention and road safety, in alignment with the UN Decade of Action for Road Safety. The document was shared externally with relevant individuals (see Acknowledgements section) who were experts in public health, physical activity, road safety and active transport, who reviewed the draft and provided feedback on its clarity and content. This thorough process ensured that the final publication was comprehensive and embodied a broad spectrum of expert perspectives. Where required, declaration of interest forms were completed and assessed, adhering to WHO standards. None of the individuals who supported this toolkit declared any significant conflict of interest relevant to the subject at hand.

The country case studies included in the toolkit provide examples of policy options and have been chosen with consideration of diversity both in terms of country income levels and geographic distribution. Each is referenced with links to publicly available information used to develop the example.

Table A1.1 summarises the GAPPA policy recommendations which can be addressed by the implementation of the seven policy options contained in this toolkit.

Table A1.1 ***Extract of key policy recommendations from Global action plan on physical activity***

Policy Action	Policy recommendation	Policy options in this toolkit aligned to implementation
Create active societies		
1.1	Implement best practice communication campaigns, linked with community-based programmes, to heighten awareness, knowledge and understanding of, and appreciation for, the multiple health benefits of regular physical activity and less sedentary behaviour, according to ability, for individual, family and community well-being.	#3 #6
1.2	Conduct national and community-based campaigns to enhance awareness and understanding of, and appreciation for, the social, economic, and environmental co-benefits of physical activity, and particularly more walking, cycling and other forms of mobility involving the use of wheels (including wheelchairs, scooters and skates), and thereby make a significant contribution to achievement of the 2030 Agenda for Sustainable Development (Sustainable Development Goals SDG2, SDG3, SDG4, SDG5, SDG9, SDG10, SDG11, SDG13, SDG15 and SDG16).	#6
Create active environments		
2.1	Strengthen the integration of urban and transport planning policies that prioritize the principles of compact, mixed land use, at all levels of government as appropriate, to deliver highly connected neighbourhoods that enable and promote walking, cycling, other forms of mobility involving the use of wheels (including wheelchairs, scooters and skates) and the use of public transport, in urban, peri-urban and rural communities.	#1 #2 #5
2.2	Improve the level of service provided by walking and cycling network infrastructure, to enable and promote walking, cycling, other forms of mobility involving the use of wheels (including wheelchairs, scooters and skates) and the use of public transport, in urban, peri-urban and rural communities, with due regard for the principles of safe, universal and equitable access by people of all ages and abilities, and in alignment with other commitments.	#2 #3 #6
2.3	Accelerate implementation of policy actions to improve road safety and the personal safety of pedestrians, cyclists, people engaged in other forms of mobility involving the use of wheels (including wheelchairs, scooters and skates) and public transport passengers, with priority given to actions that reduce risk for the most vulnerable road users in accordance with the safe systems approach to road safety, and in alignment with other commitments.	#3 #4 #5 #7
2.4	Strengthen access to good-quality public and green open spaces, green networks, recreational spaces (including river and coastal areas) and sports amenities by all people, of all ages, and of diverse abilities in urban, peri-urban and rural communities, ensuring design is consistent with these principles of safe, universal, age-friendly and equitable access with a priority being to reduce inequalities.	#1 #2 #3
2.5	Strengthen the policy, regulatory and design guidelines and frameworks at the national and subnational levels, as appropriate, to promote public amenities, schools, health-care, sports and recreation facilities, workplaces and social housing, that are designed to enable occupants and visitors with diverse abilities to be physically active in and around the buildings, and prioritize universal access by pedestrians, cyclists and public transport.	#2 #3 #5 #6 #7

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3. Walking and cycling: latest evidence to support policy-making and practice. Copenhagen: World Health Organization Regional Office for Europe; 2022 (https://iris.who.int/handle/10665/354589, accessed 8 April 2025).
4. Make walking safe: a brief overview of pedestrian safety around the world. Geneva: World Health Organization; 2013 (https://iris.who.int/bitstream/handle/10665/82271/WHO_NMH_VIP13.02_eng.pdf, accessed 9 April 2025).
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Annex 2:

WHO assessment tools

AirQ+ software tool for health risk assessment of air pollution

AirQ+ is a software tool to assess the health risks associated with air pollution exposure. It allows policy-makers, researchers, and public health professionals to quantify the impacts of air pollution on health, estimating the number of deaths and cases of diseases attributable to different pollutants (e.g., PM10, PM2.5, NO2, O3). The results offer valuable insights into the burden of diseases related to air pollution and can evaluate the health benefits of improving air quality in various scenarios.

AirQ+ can also be used to estimate the economic costs of air pollution on health systems, complementing the WHO-developed CLIMAQ-H (see next tool). While it focuses on health risks, AirQ+ can be employed alongside other tools, such as the Health Economic Assessment Tool (HEAT), to provide a more comprehensive understanding of the environmental, health, and economic benefits of air quality interventions. The tool is designed to help guide evidence-based decision-making by public health authorities, urban planners, and environmental agencies.

To find out more:
www.who.int/tools/airq

Achieving health benefits from carbon reductions: CLIMAQ-H calculation tool

Climate change mitigation, air quality and health (CLIMAQ-H) is WHO software for quantifying the consequences for human health (and related costs) of improving national air quality by reducing domestic carbon emissions. The tool is used to analyse policies for mitigation of carbon emissions reported in nationally determined contributions submitted by the Conference of the Parties to the United Nations Framework Convention on Climate Change.

CLIMAQ-H can be used to assess the outcome of climate policies and to facilitate decision-making in settings with limited data availability. The methods used are based on evidence from epidemiological studies that show relations between average long-term air pollution concentrations and the mortality and morbidity risks of exposed populations. Assessment of the impact of carbon-reduction scenarios is relevant for evaluating the consequences of policies or for screening hypothetical scenarios. (This tool replaces the earlier CaRBonH calculation tool.)

To find out more:
www.who.int/europe/publications/i/item/9789289060196

GreenUr: the Green Urban spaces and health tool

To quantify the impacts of green spaces at urban scale, WHO's GreenUr prototype tool measures availability and accessibility of green spaces in cities and calculates their potential direct health effects. While it does not provide economic assessments, the tool includes algorithms that calculate the potential direct health benefits of green spaces, such as improvements in mental health, and indirect effects via ecosystem services (e.g., air-quality enhancement, cooling effects). The tool is designed for local authorities, urban planners, NGOs, students and researchers, but can also serve as an educational, communication and scientific support. The tool is highly adaptable for a range of city contexts, helping users visualize spatial data related to green spaces and make informed planning decisions.

To find out more:
www.who.int/europe/tools-and-toolkits/greenur--the-green-urban-spaces-and-health-tool

Annex 3:
Global indicators and targets

This annex provides a list of the key indicators tracked and reported upon by WHO at global, regional and national levels to monitor policy progress towards achieving a 15% relative reduction in levels of physical inactivity in adults and adolescents by 2030 through implementation of the policy recommendations set out in the Global Action Plan on Physical Activity 2018–2030. The list below is a subset of the (currently) 36 indicators used for monitoring, showing only those most relevant to walking and cycling.

Data are collected from all Member States by WHO through two global surveys designed to monitor country progress on improving road safety, and the prevention and management of NCDs. Details of the latest surveys are available from WHO.

Reporting on the indicators in Table A3.1 is available in the *Global status report on physical activity*, and for some indicators also in the periodic *Global status report on road safety*.

Table A3.1 ***Global indicators used to track country progress related to walking and cycling***

National communication campaign on physical activity (which can include a focus on walking/cycling)
National mass-participation events (which can include a focus on walking/cycling)
National policy on walking and cycling
National policy on public transport
National road design standards for: • separated infrastructure for pedestrians and cyclists • safe crossings for pedestrians and cyclists • management of safe speed • *all three* road safety features
National road safety strategy
National road safety strategy that is fully funded
National road safety assessment of all new roads
National assessment of road safety of existing roads for all road users
National legislation on: • speed limits meeting best practice • drink–driving meeting best practice • distracted driving due to use of mobile phone • distracted driving due to use of drugs
National promotion of walking and cycling providing opportunities and/or programmes for physical activity

The target set for the Global Plan of the Decade of Action for Road Safety (2021–2030) is to reduce road traffic deaths and injuries by at least 50%. To reach this goal, 12 voluntary road safety performance targets were set, adopted in 2017 and 2018. Six of them are directly or indirectly relevant to providing, protecting and enabling safe walking and cycling. These are presented in Table A3.2. Together with the indicators outlined in Table A3.1 and the global target set for reducing physical inactivity, they provide a framework of accountability.

Table A3.2 ***Global voluntary road safety performance targets related directly or indirectly to walking and cycling***

Target 1	By 2020, all countries establish a comprehensive multisectoral national road safety action plan with time-bound targets.
Target 3	By 2030, all new roads achieve technical standards *for all road users* that take account of road safety or meet a three-star rating or better.
Target 4	By 2030, more than 75% of travel on existing roads is on roads that meet technical standards *for all road users* that take account of road safety.
Target 6	By 2030, halve the proportion of vehicles travelling over the posted speed limit and achieve a reduction in speeding-related injuries and fatalities.
Target 9	By 2030, halve the number of road traffic injuries and fatalities related to drivers using alcohol, and/or achieve a reduction in those related to other psychoactive substances.
Target 10	By 2030, all countries have national laws to restrict or prohibit the use of mobile phones while driving.

Annex 4:

Additional WHO resources related to policy options on walking and cycling

This annex presents a selection of key resources from across WHO regions related to policy action at national and subnational levels to support countries in providing safe walking and cycling. In addition, and to offer a broader perspective, some publications from other UN organizations are included as well as resources on related health topics. Please note, this list is not exhaustive and new resources are frequently published.

African Region

- *PAN African action plan for active mobility: a commitment towards better walking and cycling environment for people and the planet*. UN Habitat, UN Environmental programme and World Health Organization, 2024.
- *Status report on road safety in the WHO African Region 2023*. WHO Regional Office for Africa, 2024.
- *Health and Economic Impact Assessment of Walking and Cycling Interventions in Accra, Ghana: an investment case using the WHO HEAT tool*. WHO Ghana Office & WHO Physical Activity Unit, 2023.
- *Walking and cycling in Africa: evidence and good practice to inspire action*. UN Habitat, UN Environment Programme and Walk21, 2022.
- *Promoting physical activity in the African Region*. WHO Regional Office for Africa, 2022.
- *Why infrastructure matters: active mobility, public transport, and economic growth in African cities*. ITDP, UN Environment and UN Habitat, 2022.
- *Framework for the implementation of the global action plan on physical activity 2018–2030 in the WHO African Region: report of the Secretariat*. Regional Committee for Africa, 2020.
- *Streets for walking and cycling: designing for safety, accessibility and comfort in African Cities*. UN Habitat and ITDP, 2018.

Region of the Americas

- *Leading causes of death and disease burden in the Americas, Noncommunicable diseases and external causes*. PAHO, 2024.
- *Salvar vidas promoviendo un enfoque de sistemas de tránsito seguros en las Américas* [Saving lives by promoting a safe transit systems approach in the Americas]. PAHO, 2024.
- *Convergent agenda for sustainable mobility and health – reference document*. PAHO/WHO Brazil, 2022.
- *Strategy and plan of action on health promotion within the context of sustainable development goals 2019–2030*. PAHO, 2022.
- *Bicycle-sharing Systems across the United States of America*. PAHO, 2020.
- *Noncommunicable diseases in the era of COVID-19 and building back stronger NCD Programs*. PAHO, 2021
- *Status of road safety in the region of the Americas*. PAHO, 2019.
- *Good road safety practices in the Americas: action-oriented data and stories*. PAHO, 2019.
- *Active Living in the Washington, D.C., Metropolitan Area*. PAHO, 2017.

South-East Asia Region

- *Roadmap for implementation of health promoting schools in the South-East Asia Region*. WHO Regional Office for South-East Asia, 2022.
- *Status report on physical activity and health in the South-East Asia Region*. WHO Regional Office for South-East Asia, 2018.
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European Region

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  - ***ACTIVE** Promoting physical activity for older people: a toolkit*
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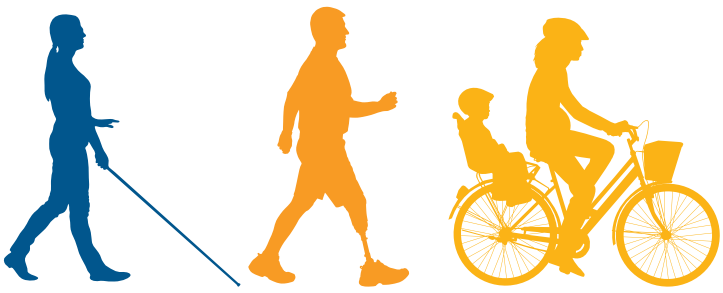

For further information, contact:

Department of Health Promotion
World Health Organization
20 avenue Appia
1211 Geneva 27
Switzerland
Website: www.who.int