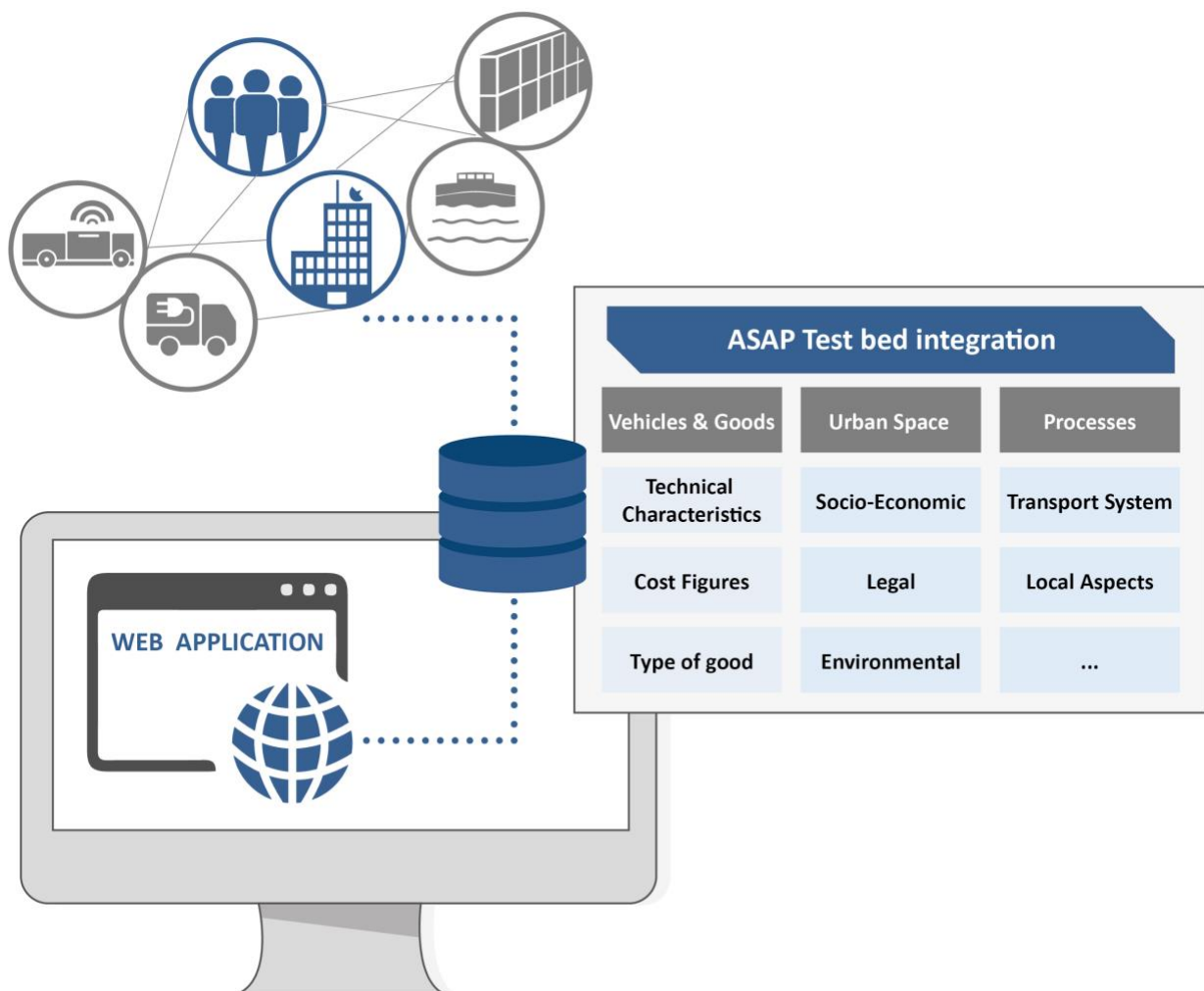


AWAKEN SLEEPING ASSETS PROJECT

D6.2 SDG Impact and Sulp Recommendation Report



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AWAKEN SLEEPING ASSETS PROJECT

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List of Acronyms

Acronym	Meaning
API	Application Programming Interface
ASAP	Awaken Sleeping Assets Project
C-ITS	Cooperative Intelligent Transport Systems
DT	Digital Twin
HLAG-ST	High Level Advisory Group on Sustainable Transport
IoT	Internet of Things
JPOI	Johannesburg Plan of Implementation
OECD	Organisation for Economic Co-operation and Development
SDGs	Sustainable Development Goals
SULP	Sustainable Urban Logistics Plan
UN	United Nations

Executive Summary

On September 25, 2015, the 2030 Agenda for Sustainable Development was adopted by all 193 member states of the United Nations General Assembly. This contains the 17 Sustainable Development Goals (SDGs), which cover social, environmental and economic aspects. The universality of the agenda means that all goals apply to all countries and can be seen as a global framework for sustainable development. Sustainable Urban Logistics Plans (SULPs) are a local framework/guideline/map designed to plan and develop the mobility needs of business/companies/industry/consumers (in terms of freight/cargo) in cities for a better quality of life, environment and service. These plans are more or less very specific and fit to the local requirements and conditions of a city. Accordingly, the combination of SDGs and SULPs represents an intersection of a universal and an individual level of consideration of sustainability goals. At the end of the day, local activities (SULPs) and plans should contribute to the global target system (SDGs) and their impact should therefore be visualizable. A combination of the two levels therefore seems sensible and will be undertaken in this deliverable with a focus on logistics. It shows the importance of transportation in the various SDGs, the SDGs on which logistics measures can have an impact and how a link can be established between SULPs and SDGs. This creates the basis for a holistic target definition, based on local SULPs, and shows their significance in the context of a global target (SDGs) and the other way round.

1. Introduction

1.1 The Awaken Sleeping Assets Project

Urban goods delivery and retail systems have changed significantly in recent years. Local retailing stagnates, while e-commerce keeps growing. This leads to massive growth in delivery trips, usually carried out by motorised fossil fuel vehicles – causing congestion, air pollution and other externalities. Especially at rush hours, these systems lead to a decrease of efficiency of logistics operators because they must share roads with other traffic participants. Furthermore, the degree of urbanisation is expected to keep on increasing in the next decade which will compound these problems. In a nutshell, the current urban goods supply, predominantly relying on fossil fuel vehicles, represents an unfriendly solution for residents due to local emission of noise and pollution. Beyond that, these practices are also problematic in the global context of climate change.

Nevertheless, for most cities and their authorities, addressing this problem is simply too difficult and falls outside their direct obligations, and they often lack the resources to identify good practices in an easy way and adapt them to their local context. This is the main reason why Sustainable Urban Logistics Plans (SULPs) have not been very successful so far. Here we would like to define a Sulp as follows: A Sustainable Urban Logistics Plan (Sulp) is a strategic framework designed by cities and urban authorities to promote environmentally friendly and efficient logistics practices within urban areas. It aims to optimise freight and goods transportation while minimising negative impacts on the environment, such as noise and pollution. SULPs typically involve the identification and implementation of sustainable logistics solutions tailored to the specific needs and context of a city.

Beyond the internal challenges that each city encounters in implementing a Sulp, there exists a notable deficiency in collaboration between cities despite the shared nature of their challenges. ASAP aims to overcome these problems by demonstrating practical solutions and providing a Sulp-interaction platform as a comprehensive knowledge base.

1.2 The ASAP project Objectives

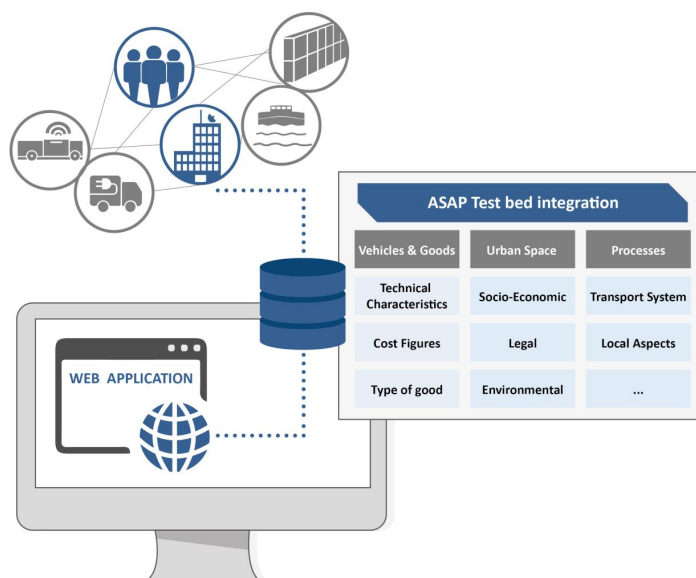
ASAP strikes new paths aiming for three overall goals:

- (1) to activate and promote underused or inactive infrastructure or resources for sustainable urban logistics.
- (2) to provide testing structures (testbeds) for innovative urban logistics systems.
- (3) to combine activities to build a new Sustainable Urban Logistics Planning platform (SULP-Platform)

The SULP-Platform was intended as an instrument that can help cities to contribute and activate sleeping assets and promote specific innovative urban logistics solutions. It will also provide help and support for cities conceiving their own SULP. On the one hand, this will foster a shift away from fossil fuel vehicles to non- or low-fossil alternative vehicles as well as the use of other modes of transport. On the other hand, this platform allows interested local authorities to easily find suitable urban logistics solutions corresponding to their own situation. Furthermore, they get the possibility to learn from existing testbeds and participants' expertise. By activating new sustainable urban logistics systems, the ASAP project aims to foster inhabitant friendly solutions to make the urban areas a more liveable space.

ASAP aims to create a centrally retrievable and bundled presentation of information that has a strong focus on real testbeds, user interaction, and long-term usability.

It will be based on testbeds that are activating underused assets within cities for the use by city logistics operations. These testbeds are pilot structures for Sustainable Urban Logistics Solutions that will be used to provide data on success and failure factors, framework conditions, and transferability information. The partner cities have acted as "lighthouse cities" showing the way and contribute 13 existing testbeds activating "sleeping" assets. In addition, the initiation of up to 11 concepts for new testbeds will be fostered within the project.



In general, we classify "sleeping assets" for sustainable urban logistics solutions as:

Figure 1: The ASAP Concept and Elements

- **Neglected Routes** – rivers, canals, tramlines, bus lanes with spare capacity that could be used for logistics activities, avoiding congested roads.
- **Under-Used Resources** – vehicles/infrastructures not used effectively either through inactivity or being active but under-loaded on some routes or at certain times.
- **Idle and new Infrastructure** – Vacant or underused buildings such as shops, transport hubs, car parks or new infrastructures such as micro-depots, tunnels, or smart loading zones.

The existing testbeds and innovative new testbeds to be initiated within the project are covering a broad range of solutions across all "Awaken Sleeping Assets"-classes.

2. Status Quo of SDGs and SULPs

2.1 SDGs: why cities should recognise their importance for logistics

Cities need to acknowledge the significance of **Sustainable Development Goals (SDGs)** that were set by the United Nations (UN) to address the urgent environmental, political, and economic challenges. Logistics urgently needs to embrace sustainability as a primary goal in the environmental, economic, and social aspects because it enables them to address urban challenges, enhance quality of life, foster innovation, engage in global collaboration, and promote long-term planning for more liveable cities of the future.

1. Firstly, SDGs offer a framework for advancing sustainable development encompassing economic growth, environmental protection, and social equity. **Integrating SDGs into logistics strategies aligns cities' efforts with broader sustainability goals.**
2. Secondly, **logistics profoundly impact urban environments, contributing to issues like traffic congestion and air pollution.**

By incorporating SDGs, cities can tackle these challenges more effectively and promote sustainable urban development. Moreover, sustainable logistics practices can enhance residents' quality of life by **reducing pollution** and **traffic congestion**. SDGs emphasise creating liveable cities conducive to **healthy and safe** living environments. Furthermore, SDGs encourage **innovation** and the **adoption of new technologies** to achieve sustainability objectives. Embracing SDGs in logistics planning stimulates innovation in areas like **alternative transportation** and **waste management**. Additionally, SDGs provide a common framework for global collaboration on sustainability issues. Recognizing their importance in logistics should encourage cities to participate in international initiatives, share best practices, and learn from others' experiences. Lastly, SDGs promote a **holistic approach to development**, encouraging cities to consider long-term impacts on economic, social, and environmental dimensions. By incorporating SDGs into logistics planning, cities can develop resilient and future-proof strategies. Nevertheless, any of the SULPs or similar strategic documents analysed during the ASAP project explicitly mention SDGs.

Transport's significance in sustainable development was recognized as early as the 1992 Earth Summit, with Agenda 21 highlighting its role. By 2002, the Johannesburg Plan of Implementation (JPOI) reiterated this importance, outlining sustainable transport considerations. In 2012, the Rio+20 conference emphasised transportation's centrality to sustainability, leading to the establishment of the High-Level Advisory Group on Sustainable Transport (HLAG-ST) in 2014. Today, sustainable transport is integral to the 2030 Agenda for Sustainable Development, intersecting with multiple Sustainable Development Goals (SDGs) such as food security, health, and economic growth. Efforts continue to ensure transportation systems are efficient, equitable, and environmentally friendly, addressing both people and goods transport.

In urban areas, Sustainable Urban Logistics Plans (SULPs) have gained traction. Nevertheless, none of the SULPs or similar strategic documents analysed during the ASAP project explicitly mention SDGs. To align SULPs with SDGs would optimise existing assets for sustainable logistics. These efforts are crucial in tackling inequality and climate change, requiring socially inclusive transport policies aligned with pandemic recovery strategies. Organisation for Economic Co-operation and Development (OECD)'s Transport Outlook 2021 underscores the importance of policy alignment with SDGs, emphasising the role of investments in decarbonization and digitalization for post-Covid-19 economic recovery. A unified approach is essential for harnessing transport's multifaceted contribution to sustainable development goals.

2.2 SULPs: their importance and difficulties in implementation

By definition a **Sustainable Urban Logistics Plan (SULP)** is a strategic document developed by local authorities and stakeholders to address the challenges of urban freight transport in a sustainable manner. The main goal of a SULP is to improve the efficiency, safety, and environmental performance of freight transport operations within urban areas while promoting economic development and social well-being. Ideally a SULP

should comprise several essential elements. Firstly, **Data Analysis**, where current freight transport patterns, volumes, and impacts within the urban area are assessed. Secondly, **Stakeholder Engagement** is crucial, to ensure that relevant stakeholders, including businesses, residents, local authorities, transport operators, and environmental groups, are involved in the planning process to incorporate diverse perspectives. Also, **Policy Development** should be undertaken to address challenges such as congestion, air pollution, noise, and road safety associated with urban freight transport. **Infrastructure and Technology** are important issues for urban logistics and should be examined to identify opportunities for improvement and innovation, such as optimising loading zones and implementing electric vehicles and smart logistics solutions. Additionally, the **Regulatory Framework** would need to be reviewed and adapted to support sustainable urban logistics, including measures like urban access restrictions and low-emission zones. Lastly, mechanisms for **Monitoring and Evaluation** should be established to track the plan's implementation and assess its effectiveness in achieving sustainability goals. By integrating these components, a Sulp could contribute to a more efficient, environmentally friendly, and socially inclusive urban freight transport system, thereby supporting the overall sustainability of the city or urban area.

While SulpS should offer a framework for addressing urban freight transport challenges sustainably, they usually encounter **several problems**, and many existing SulpS exhibit **weaknesses and gaps** that are based on the **essential elements** that they should contain and that are listed above. Urban logistics complexity, involving stakeholders, transportation modes, and regulations, complicates SulpS. Stakeholder engagement is crucial yet challenging due to conflicting interests and limited resources. Reliable data collection faces obstacles like limited methods and privacy concerns. Limited resources hinder ambitious Sulp implementation, especially in smaller cities. Adapting regulatory frameworks encounters resistance and legal barriers, complicating policy implementation. Technological advancements introduce uncertainty, requiring adaptation to existing infrastructure and regulations. Measuring Sulp effectiveness needs robust evaluation frameworks, but inadequate monitoring makes assessing impacts challenging. Overcoming these hurdles demands careful planning, collaboration, and ongoing evaluation for effective and sustainable SulpS addressing urban freight transport.

Another shortcoming is that SulpS usually do not take the importance of SDGs for logistics matters into consideration. The weaknesses of existing SulpS have been the topic of "Deliverable D2.2 Sulp Report: potential weaknesses and gaps, list of SDGs addressed in SulpS and their evaluation." This document is available on the ASAP website for interested readers.

3 SDGs in Logistics and urban transport

On September 25, 2015, the 2030 Agenda for Sustainable Development was adopted by all 193 member states of the United Nations General Assembly. This contains the 17 Sustainable Development Goals (SDGs), which cover social, environmental and economic aspects. The SDGs are divided into a further **169 targets** and include a new interconnected understanding of poverty, environmental degradation, inequality, production and consumption patterns and corruption, etc. The universality of the agenda means that all goals apply to all countries. The responsibility for implementing the goals therefore lies both at the national and international level. Urban logistics can contribute to achieving the SDGs in various ways and by impacting on different areas:

- **Efficient Supply Chains:** (Urban) Logistics plays a crucial role in ensuring the efficient movement of goods and services to customers. Efficient supply chains are essential for economic growth and development, which are central to many of the SDGs, including goals related to economic growth, poverty alleviation, industry innovation and gender equality.
 - SDG 1 - No poverty
 - SDG 5 - Gender Equality
 - SDG 8 - Decent Work and Economic Growth
 - SDG 9 - Industry, Innovation and Infrastructure

- **Good health and well-being:** By optimising delivery processes and reducing traffic congestion, urban logistics can help improve access to healthcare facilities and ensure the timely delivery of vital medicines.
 - SDG 3 - Good health and well-being
- **Economic Development:** Efficient urban logistics systems are essential for supporting local businesses, promoting entrepreneurship and facilitating economic growth within cities. By enabling timely and reliable delivery of goods, urban logistics can enhance the competitiveness of businesses, create job opportunities and stimulate economic activity in urban areas.
 - SDG8 - Decent Work and Economic Growth
- **Employment:** By creating jobs in the logistics sector and promoting innovation and technological advances, urban logistics can contribute to the economic development of cities and regions.
 - SDG 8 - Decent Work and Economic Growth
- **Social Inclusion:** Urban logistics can have social impacts, particularly on vulnerable populations such as low-income residents and marginalised communities. By ensuring equitable access to goods and services, including essentials like food and medicine, urban logistics can contribute to reducing inequalities and promote social inclusion.
 - SDG 10 - Reduced inequalities
- **Efficient Land Use:** Urban logistics can help to optimise land use within cities. Through minimising the space required for warehousing and distribution centres and utilising shared or multi-purpose facilities - both major pillars of the ASAP concept - urban logistics can contribute to creating more compact, walkable and accessible urban environments.
 - SDG 11- Sustainable Cities and Communities by promoting sustainable development.
- **Sustainable Cities and Communities:** Urban logistics can help reduce traffic in cities, improve air quality and reclaim public space by promoting efficient supply chains and the use of alternative means of transportation such as electric vehicles or bicycle courier services.
 - SDG 11 - Sustainable Cities and Communities
- **Environmental Impact:** Urban logistics activities such as first/last mile deliveries and freight transportation contribute to congestions, air and noise pollution. By aligning with SDG related to environmental sustainability urban logistics can adopt practices that minimise emissions, optimise routes, and promote the use of cleaner transportation modes, thereby reducing environmental degradation and promoting healthier urban environments.
 - SDG 11 - Sustainable Cities and Communities,
 - SDG 13 - Climate action and
 - SDG 12 - Responsible consumption and production
- **Resilience and Disaster preparedness:** Urban logistics plays a crucial role in disaster response and emergency management within cities. Although this aspect was less important to the ASAP concept it is clear that by ensuring the availability of essential supplies and facilitating rapid distribution during crises, urban logistics can enhance the resilience of urban communities.
 - SDG 11 - Sustainable Cities and Communities
 - SDG13 - Climate Action
- **Sustainable consumption and production:** Through efficient route management and the reduction of empty runs, urban logistics can help reduce waste and wastage of resources.
 - SDG 12 - Responsible consumption and production
- **Climate action:** Promoting environmentally friendly delivery methods and reducing greenhouse gas emissions in urban areas by using alternative fuels or consolidating deliveries can help combat climate change.
 - SDG 13 - Climate action

These are just a few examples of how urban logistics can contribute to achieving the SDGs. By enabling the efficient and sustainable supply of goods and services in urban areas, it can help to create a liveable and sustainable environment for people locally in cities and worldwide. A combination of SDGs and logistics results in added value and a set of arguments in equal measure. The contribution of logistics to SDGs can be derived

and thus forms a basis of argumentation for the discussion of SULPs. This provides the basis for a structured discussion and merging of the two subject areas.

3.1 Development of Transport as important SDG topic

The role of transport was first recognized at the 1992 United Nation's Earth Summit and reinforced in its outcome document – Agenda 21. In 1997, the UN General Assembly further noted that, over the next twenty years, transportation would be expected to be the major driving force behind a growing world demand for energy.

In 2002, at the World Summit on Sustainable Development, the role of transport was once again captured in the outcome document - JPOI (Johannesburg Plan of Implementation), which provided multiple anchor points for sustainable transport. This included considerations for infrastructure, public transport systems, goods delivery networks, affordability, efficiency, and convenience of transportation, as well as improving urban air quality and health, and reducing greenhouse gas emissions.

In 2012 (Rio +20), it was acknowledged that transportation and mobility are central to sustainable development. Subsequently, in 2014, a High-Level Advisory Group on Sustainable Transport (HLAG-ST) was established to further address these issues.

Now, in the 2030 Agenda for Sustainable Development, sustainable transport is mainstreamed across several Sustainable Development Goals (SDGs) and targets. This integration extends to areas such as food security, health, energy, economic growth, infrastructure, and cities and human settlements. Recognizing the pivotal role transportation plays in shaping the sustainable future of our planet, efforts continue to be made to ensure that transportation systems are efficient, equitable, and environmentally friendly.

"[...] efforts continue to be made to ensure that transportation systems are efficient, equitable, and environmentally friendly": **This approach applies equally to people and goods/freight/cargo, as efficient access to everyday goods contributes to fair and sustainable social development.** In this context, sustainability means that a balance between economic, ecological and social aspects should be maintained or established. These goals are also anchored in logistics and are reflected in sustainable urban logistics. Current concepts and plans of cities all over the world are explicitly dedicated to the topic of "logistics", as it has been recognized in many places that the transport sector and the freight traffic it contains has a considerable share of emissions and immissions. **Logistics was therefore recognized as a relevant urban issue and has been actively addressed and further developed ever since.** In the meantime, the concept of the Sustainable Urban Logistics Plan (SULP) has become widely established. In these plans, overarching sustainability goals are broken down to urban freight transport and operationalized in the form of measures.

If these goals are combined with ASAP's objective of using existing assets for new logistics concepts, sustainability and efficiency are optimally combined. Cities are confronted with high traffic volumes and increasing vacancy rates. As more and more people are living in cities and need to be supplied, it makes sense to intersect SULPs with SDGs and thus demonstrate the target contribution of sustainable urban logistics using existing assets.

Addressing both inequality and climate change concurrently is a paramount concern on a global scale. This endeavour **necessitates the advancement of environmentally sustainable and socially inclusive transportation systems, underpinned by effective transport policies.** Given the ubiquitous impact of the transportation sector, which transcends political and geographical boundaries, policymakers face substantial challenges in implementing transformative measures. Hence, transport-related climate and equity policies must be not only politically viable but also socially embraced and trusted. Specifically, these policies should fulfil three key criteria: alignment with **strategies for pandemic recovery**, a shift towards enhancing **access to opportunities**, and facilitation of **intersectoral collaboration** to dismantle existing silos.

The ITF Transport Outlook 2021 by the Organization for Economic Co-operation and Development (OECD) emphasizes the **importance of aligning transport policy with the Sustainable Development Goals (SDGs)**. Transport policy can either serve as a catalyst for positive change or exacerbate conflicts, especially as broader issues of climate change and inequality escalate. Public support for measures promoting sustainable mobility hinges on their perceived fairness and minimal burden on the average citizen. Conversely, policies perceived as limiting affordable access and contributing to growing economic disparities can fuel social and political tensions. Ensuring policy alignment is essential for effectively allocating funding in the upcoming years. While the financial costs of decarbonization may appear daunting, these investments can stimulate job creation, reduce healthcare expenses, and safeguard biodiversity.

Research conducted by Fulton et al. (2017) demonstrates that prioritizing investment in public transport over private car transport is likely to yield savings exceeding the associated costs. Investments in decarbonization and digitalization technologies have the potential to lower expenses and yield long-term net benefits, offering a promising avenue for post-Covid-19 economic recovery.

Adopting a unified, coordinated, and holistic approach will not only advance the broader agenda of the United Nations Sustainable Development Goals (SDGs) but also harness transport's multifaceted contribution to these objectives. Transport intersects with numerous SDGs, explicitly or implicitly, underscoring its pivotal role in sustainable development endeavours (see following figure developed by OECD).



Figure 2: The relevance of transport for the United Nations Sustainable Development Goals (OECD)¹

Since its establishment, the 2030 Agenda for Sustainable Development, along with its **17 Sustainable Development Goals (SDGs)**, has been perceived as interconnected and indivisible. However, significant progress in these areas can only be achieved through the transformation of systems that link across the SDG goals and targets, as emphasized in the 2019 Global Sustainable Development Report (GSDR). The GSDR identified six key 'entry points' where action is crucial for systemic transformation towards sustainable development. Many of these entry points, such as human well-being, energy, cities, and food systems, are

¹ Source <https://www.oecd-ilibrary.org/sites/801f7dba-en/index.html?itemId=/content/component/801f7dba-en>

closely linked to sustainable transport, highlighting its potential as a catalyst for achieving the SDGs and successful climate action across sectors. Specifically, **certain SDGs are directly associated with sustainable transport through targeted objectives and indicators**, including road safety, infrastructure development, and accessibility of transport systems. Additionally, many other SDGs are indirectly influenced by the enabling role of sustainable transport.

Numerous countries have recognized and utilized the connections between transport and the SDGs, particularly concerning climate action (SDG 13). The illustration below depicts **how countries have linked transport infrastructure and services to various SDGs**, as evidenced in their voluntary national reviews (VNRs) submitted to the High-level Political Forum (HLPF) in 2021. The primary interlinkages reported were between transport and SDG 9 (infrastructure), SDG 11 (urbanization), SDG 13 (climate action), SDG 3 (health), and SDG 7 (energy). While progress in urban transport, railways, shipping, and aviation was frequently reported, relatively less attention was given to active mobility and rural transport.

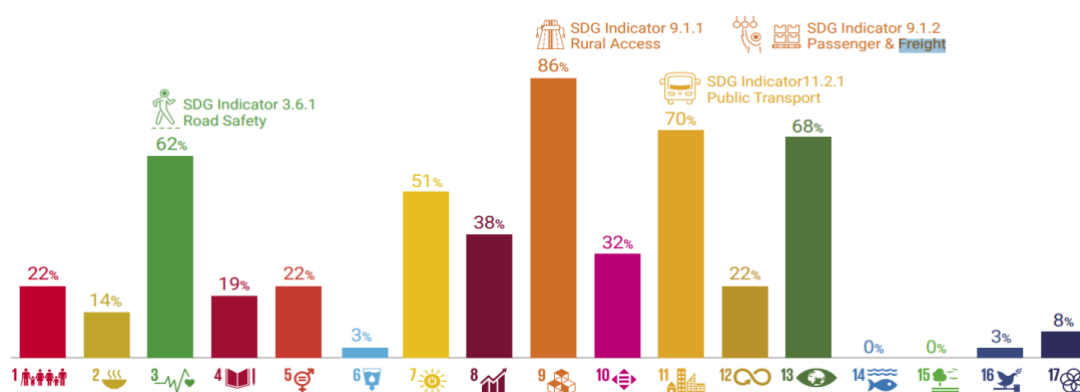


Figure 3: Percentage of voluntary national reviews connecting transport with different SDGs (UN)²

Given the integrated nature of the SDGs, significant progress towards sustainable transport not only relies on advancements in other areas but also impacts them, including renewable energy, energy efficiency, urban planning, infrastructure, and technology development. Therefore, **a thorough understanding of the transport needs of diverse population groups and sectors is essential**, with their inputs actively sought for sound transport planning and policy formulation. Many countries are integrating the SDGs into national sustainable development plans and strategies, adopting a whole-of-government approach, and establishing multi-stakeholder consultation mechanisms, as indicated by the Compendium of National Institutional Arrangements for Implementing the 2030 Agenda for Sustainable Development. This trend should be encouraged and extended to sustainable transport. Cities could initiate efforts to map existing policies, institutions, and key stakeholders to address challenges and opportunities in delivering sustainable transport, integrating these efforts into local plans or strategies like Sustainable Urban Mobility Plans (SULPs).³

3.2 Contribution of ASAP to SDGs

A complete overview of the contribution of the ASAP project and the included sleeping assets to different SDGs is already given in D2.2 Sulp Report: potential weaknesses and gaps, list of SDGs addressed in SULPs and their evaluation. As ASAP also focuses on SULPs, it is important to explicitly highlight the intended/specific contribution of the project to the individual SDGs here. SULPs should show a path towards sustainable urban logistics and should therefore also refer to the SDGs. The review of the various SULPs in D2.2 has shown that most of them do not refer to or at least mention the SDGs. ASAP aims to provide guidance/inspiration to link

² Source: https://sdgs.un.org/sites/default/files/2021-10/Transportation%20Report%202021_FullReport_Digital.pdf

³ Source: https://sdgs.un.org/sites/default/files/2021-10/Transportation%20Report%202021_FullReport_Digital.pdf

smart urban logistics to specific SDGs. The potential contribution of ASAP or ASAP activities to all SDGs is listed below:

- **SDG 1 End poverty in all its forms everywhere:** ASAP employs the use of cargo bikes; they are a particularly low-level entry point for persons that cannot afford cars or have no driving licence. This all contributes to ensure jobs for all levels of society and thus can contribute against poverty. This is connected to targets 1.1 and 1.4 of this SDG.
- **SDG2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture:** ASAP deals with the sustainable care of people. Logistics enables easy and affordable access to supplies, including food. Processes, infrastructures and means of transport contribute significantly to a functioning supply.
- **SDG 3 Ensure healthy lives and promote well-being for all at all ages:** ASAP employs the use of cargo bikes, zero emission delivery and sustainable urban logistics solutions. This contributes to more active mobility among logistics workers and less emissions and increased safety all leading to more good health and wellbeing. (Connection to the following targets of this SDG: 3.6, 3.9/d)
- **SDG 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all:** ASAP and the use of the ASAP concept should lead to new technologies and new job possibilities and might also provide the possibility of new start-ups. This all can contribute to target 4.4. of this SDG.
- **SDG 5 Achieve Gender equality and empower all women and girls:** Many of the measures in the various ASAP testbeds are not like usual logistics solutions (less heavy work, more technology) and thus also offer more opportunities for females in the job market. Also, further research will be needed and the number of women in academia is increasing and supported. Also, with regard to cargo bike riders – there are more women riders than among usual CEP drivers. This is connected to target 5.6a/b/c of this SDG.
- **SDG 6 Ensure availability and sustainable management of water and sanitation for all:** ASAP pushes the use of existing structures and infrastructure and the use of alternatively powered vehicles. This also reduces the man-made impact on nature and thus also protects soil and groundwater.
- **SDG 7 Ensure access to affordable, reliable, sustainable and modern energy for all:** ASAP measures will help to increase energy efficiency and lower energy consumption, they will make processes more efficient and use more clean energy (or zero emission) options. This is connected to the target 7.3 / a of this SASAP measures will help to increase energy efficiency and lower energy consumption, they will make processes more efficient and use more clean energy (or zero emission) options. This is connected to the target 7.3 / a of this SDG.
- **SDG 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all:** ASAP and the use of the ASAP concept should lead to new technologies and new job possibilities and might also provide the possibility of new start-ups (see incharge).
- ASAP employs the use of cargo bikes; they are a particularly low-level entry point for persons that cannot afford cars or have no driving licence. This all contributes to ensure jobs for all levels of society and thus can contribute against poverty. This all can contribute to target 8.3, 8.5, 8.6 and 8.7 of this SDG.
- **SDG 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation:** ASAP measures strongly contribute to the development of innovative, reliable, sustainable and resilient urban logistics solutions. The concept offers opportunities for innovative start-up and more research and facilitates resource efficiency. This contributes to the following targets of this SDG: 9.1, 9.3, 9.4, 9.5
- **SDG 10 Reduce inequality within and among countries:** ASAP and the use of the ASAP concept should lead to new technologies and new job possibilities (lower entry level) and might also provide the possibility of new start-ups. This contributes to the following targets connected to this SDG: 10.2, 10.3
- **SDG 11 Make cities and human settlements inclusive, safe, resilient and sustainable:** The ASAP concept is based on the idea to activate, use and promote underused or inactive infrastructure and resources in cities for urban logistics purposes. This will lead to an increased quality of life and more safety. This basically contributes to all the targets of this SDG.
- **SDG 12 Ensure sustainable consumption and production patterns:** ASAP will also try to improve reverse logistics and waste management. It therefore also has a connection to targets 12.2, 12.4 and 12.6
- **SDG 13 Take urgent action to combat climate change and its impacts:** ASAP measures enable cities to use sustainable urban logistics solutions that will have a particular connection to targets 13.2 and 13.3 and b.

- **SDG 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development:** ASAP deals with the holistic view of logistics and thus also with the potentials of the return transport of packaging materials. In this way, the responsible use of resources and the avoidance of uncontrolled disposal can be increased.
- **SDG 15 Protect, restore and promote sustainable use of terrestrial ecosystems:** The use of already available resources and infrastructure in ASAP that have so far not been used for logistics purposes will prevent more public space to be used for such purposes and thus will probably enable cities to use public space for recreational purposes and reduce and hopefully reverse the degradation of natural habitats by restoring or implementing more green spaces. Thus, there is a connection to targets: 15.1, 15.5 and 15.9.
- **SDG 16 Promote peaceful and inclusive societies for sustainable development:** ASAP focuses on sustainable development. Accordingly, jobs and business relationships should also be fair. Furthermore, decision-making and processes for shaping the future should be transparent and inclusive.
- **SDG 17 Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development:** The ASAP concept is strongly based on the building up and strengthening of multi-stakeholder partnerships and therefore connects to targets 17.14 (Enhance policy coherence for sustainable development), 17.16 (6 Enhance the global partnership for sustainable development, complemented by multistakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries) and 17.17 (Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships).

The linking of ASAP and SDGs in the list above highlights that it is possible to work out connections between smart urban logistics or the use of sleeping assets and the targets of sustainable development goals. As mentioned earlier to break down global strategies to local measures to make them more tangible for city decision makers. As a result, it is recommended to integrate SDGs into SULPs for bridging the different levels of strategies.

A direct connection between the SDG- and the Sulp approach is given exemplarily for the ASAP cities (Hamburg, Paris and Stockholm) the show the status and highlight the potential of the integration SDGs into SULPs. Vienna is not directly included as their concept of the city of Vienna will be presented in summer 2024.

4 Sulp Implementations in ASAP Cities

4.1 ASAP Cities Sulp

Cities often carry out a Smart Urban Logistics Plan (Sulp) to make logistics in urban areas more sustainable. This is done for several reasons:

- **Environmental protection:** by reducing traffic emissions and air pollution, cities can reduce pollution and help combat climate change.
- **Traffic relief:** An efficient and sustainable logistics plan can help to reduce traffic in urban areas and thus reduce congestion and traffic overload.
- **Economic efficiency:** Sustainable logistics can improve efficiency in the supply chain, which can lead to cost savings for businesses. This can also have a positive impact on the local economy.
- **Quality of life:** Better logistics planning can help improve the quality of life in urban areas by reducing noise pollution and increasing safety for pedestrians and cyclists.
- **Urban planning:** By integrating sustainable logistics into urban planning, cities can improve their infrastructure in the long term and shape urban development in line with environmental goals.

A Sulp can be seen as a multi-target plan that helps to address the challenges associated with urban logistics and create a more sustainable and liveable urban environment. The Variety of theory and practice of SULPs is comprehensively shown in ASAP D2.2 Sulp Report: potential weaknesses and gaps, list of SDGs addressed in SULPs and their evaluation.

Within the ASAP projects the cities of Paris, Hamburg, Stockholm and Vienna are directly involved. For this reason, their SULPs are analysed more closely in the context of SDGs. The focus is on the strategies and targets the cities followed in their SULPs. The cities have different documents with different titles or names. None of them is explicitly called a Sulp. A common aspect is that the term SDG cannot be found in any of the documents. The City of Vienna is currently (as of April 2024) working on a master plan for urban logistics. Completion is expected in the third quarter of 2024. Accordingly, it is not possible to make any statements about this document at the time this report was elaborated.

Paris, Hamburg, Stockholm and Vienna are four European cities that have special characteristics from a logistics perspective. Each of these cities has unique approaches and challenges to urban logistics that set them apart.

Paris:

Paris is characterized by its dense development and historic city centre, which brings logistical challenges. The city has taken measures to reduce traffic and improve air quality. These include strict regulations on the access of delivery vehicles, particularly in the central zones, and the promotion of electric mobility. Paris relies on micro-hubs and cargo bikes to make the “last mile” of deliveries more efficient and environmentally friendly. Another important aspect is the use of the Seine for the transportation of goods, which reduces road traffic.

Hamburg:

Hamburg is known for its large port, which is one of the most important logistics hubs in Europe. The port of Hamburg plays a central role in international trade and has a strong influence on urban logistics. The city is investing in modern infrastructure and digital technologies to increase the efficiency of port operations and optimize logistics chains. Hamburg relies on intelligent traffic control systems and innovative concepts such as urban distribution centres to relieve urban traffic. In addition, the integration of rail, road and waterways plays an important role in the city's multimodal logistics strategy.

Stockholm:

Stockholm is characterized by its focus on sustainability and innovative logistics solutions. The city has ambitious targets for reducing emissions and promotes the use of environmentally friendly means of transportation. Stockholm is focusing on the comprehensive digitalization of urban logistics to increase efficiency and minimize environmental impact. One example of this is the so-called “Urban Consolidation Centre”, which bundles the flow of goods and thus reduces the number of trips into the city. Stockholm's geographical location, surrounded by water, also makes it possible to use boats to transport goods within the city.

Vienna:

Vienna has a special position due to its central location in Europe and its historically evolved urban structure. The city relies on a combination of modern and traditional logistics solutions. A special feature is the promotion of rail freight transport to relieve road freight traffic. Vienna is investing in logistics centres close to the city and wants to use urban micro-depots to shorten delivery routes and reduce traffic. The city is also striving to promote electromobility in the logistics sector to improve air quality and reduce CO₂ emissions.

Differences:

The main differences between these cities lie in their geographical location, historical development and specific logistics challenges and solutions. Paris focuses strongly on reducing inner-city traffic and using alternative means of transportation. Hamburg uses its port as a central logistics hub and relies on multimodal solutions. Stockholm is a pioneer in terms of sustainability and the digitalization of logistics processes, while Vienna seeks a balance between traditional and modern logistics approaches and relies heavily on rail freight transport. These differences reflect the individual strengths and challenges of each city and show how diverse urban logistics solutions can be. However, it also underlines the need for standards to make measures and their impact measurable and comparable. In this way, individual efforts can be reduced and “learning from each other” can

be strengthened. Both SULPs and SDGs offer a city-wide and internationally recognized framework that makes this possible.

4.2 Interlinking SULPs and SDGs

An analysis of the strategic orientation and objectives of the SDGs by the UN and **OECD clearly shows the potential of transportation issues to achieve the goals**. Transport is explicitly mentioned as a topic and mentioned in the context of key elements of the SDGs. The list of possible contributions from ASAP's perspective also shows that transportation/logistics and SDGs are interlinked. It can be deduced from this that there is a meaningful and derivable connection between SDGs and logistics in any case. This also suggests that the integration of SDGs into SULPs is important. In this way, local measures and plans can be translated into global strategies and their contribution to the goals can be visualized.

In none of the documents analysed was there any indication that the different SDGs played a role in the development of the strategy documents related to logistics and freight strategies. However, in interviews with the city of Stockholm, it was confirmed that it is the city's policy to always **use the urban mobility strategy as the basis of development for new planning documents** and the various SDGs are integrated into the mobility strategy in Stockholm (see also ASAP D2.2 Sulp Report: potential weaknesses and gaps, list of SDGs addressed in SULPs and their evaluation).

The link between the Sustainable Development Goals (SDGs) and the Sustainable Urban Mobility Plans (SULPs) is crucial as they both aim to promote sustainable development, especially in an urban context. The SDGs provide a comprehensive framework for promoting economic growth, social justice and environmental protection worldwide by 2030 and address a wide range of challenges, including poverty, inequality, climate change, clean water and sustainable cities and communities. SULPs, on the other hand, are specific planning instruments that aim to improve mobility in urban areas by promoting the use of sustainable modes of transport, optimizing traffic flows and increasing the quality of life in cities. **By linking SDGs and SULPs, cities can align their mobility strategies with the overarching Sustainable Development Goals** and ensure that their transport infrastructure and services contribute to achieving a wide range of SDGs. A coordinated approach to the planning and implementation of freight-mobility solutions in urban areas will thus help to achieve the SDGs more effectively while improving the lives of citizens.

Conversely, the reference to the SDGs in a Sulp helps to create an argument or legitimization for the development of a Sulp itself. Cities must meet climate targets, and in many cities freight transport accounts for a relevant proportion of emissions. This closes the gap between the potential and added value of SDGs and SULPs. On an international level the OECD provides a guideline or checklist for public decision makers to guide using SDGs. The checklist aims to guide policymakers at all levels of government move from recommendations to concrete actions to achieve the SDGs. It can also be used for public authorities to translate the SDG idea into their specific Sulp-strategy. Therefore, it is recommended to also consider the OECD checklist when developing a Sulp. OECD checklist for public action to localise the SDGs:⁴

- **policies & strategies:** use the SDGs to define and shape local and regional development visions, strategies, plans, and re-orient existing ones.
- **multi-level governance:** use the SDGs as a framework to align policy priorities, incentives, objectives across national, regional and local governments as well as to manage trade-offs and promote synergies across policy areas.
- **financing & budgeting:** mainstream the SDGs in budgeting processes to ensure adequate resources are, allocated for the implementation of the 2030 Agenda and to foster policy continuity.
- **data & information:** leverage SDGs data and localised indicator systems to guide policies and actions to better people's lives and to showcase the performance of cities and regions.

⁴ Source OECD: https://www.oecd.org/cfe/5_years_of_a_Territorial_Approach_to_the_SDGs.pdf

- **engagement:** use the SDGs to enhance accountability and transparency by engaging all territorial stakeholders, including civil society, citizens, academia and private companies, in the policy making process.

Public action can result from “pull” or “push”. This means that a measure is implemented **based on a strategy** or **in response to a target**. In both cases, a target system is required into which the measure is incorporated. The target system serves both to quantify and legitimize the effects associated with the measures. In any case, public action must be anchored in overarching policies and strategies. These define the direction and how defined visions are to be achieved. In this way, the measures can be anchored and operationalized at the various political and administrative levels.

Accordingly, this also legitimizes the allocation of budgets necessary for implementation in the city. The evidence base must not be forgotten. A strategy and vision are important, but the corresponding evidence base in the form of data security is essential. Without a data basis, there is a risk of making arbitrary decisions. Their impact may or may not be reflected in the target system. The reverse is also true, of course. In terms of transparency and therefore also the participation of all stakeholders, a comprehensible data basis is essential. If strategy, commitment, funding and data transparency are in place, measures can be developed and implemented in a participatory and inclusive manner. If the local contribution is also linked to overarching goals such as the SDGs, both understanding and the willingness to jointly support the measures are strengthened.

5 Recommendations and Conclusion

5.1 Recommendations

A practice-oriented guide ensures that the plans and strategies developed can be implemented in the real world. It offers concrete steps and examples that are understandable and feasible for those responsible in the cities and municipalities.

1. **efficiency and effectiveness:** practice-oriented approaches avoid the development of theoretical models and strategies that cannot be implemented in practice. A practical guide helps to use resources efficiently and to develop measures that actually lead to an improvement in urban logistics.
2. **participation and acceptance:** a guideline that takes practice into account can better incorporate the various interests and perspectives of the actors involved, including city administrations, companies, citizens and other stakeholders. This leads to greater acceptance and cooperation in the implementation of the measures.
3. **flexibility and adaptability:** practice-oriented guidelines are often more flexible and can be better adapted to specific local circumstances and challenges. This is particularly important as urban logistics has different requirements and conditions in every city.
4. **sustainability and the long term:** a practical guide helps to develop sustainable solutions that have a long-term impact and reduce environmental pollution. Specific recommendations for action ensure that the measures not only achieve short-term success but are also sustainable in the long term.
5. **knowledge transfer and best practices:** practice-oriented guidelines can integrate best practices and successful case studies from other cities and projects. This enables knowledge transfer and helps cities to learn from the experiences of others and adopt best practices.

A practice-oriented guide for the development of a Sulp is crucial to ensure that theoretical concepts are translated into concrete, actionable measures. It helps to increase the effectiveness and efficiency of urban logistics systems, promote stakeholder acceptance and cooperation, and ultimately create sustainable and long-term solutions. Accordingly, the following **Practical Guide** was developed with the involvement of the ASAP cities. Practical Guide for concept development and implementation:

- **Understand and define** (1st thoughts and steps): WHY is a SULP needed
 - Create common understanding + general agreed definition of SULP (Enclose, Novelog und Eltis)
 - Define city objectives and goals, legal framework assessment and strategic anchoring and data availability
 - SULP CHECKLIST: components, scope (topics, geographic, financial etc.), schedule, liability: requirements at meta level (see D5.2)
- **Assess and analyse:** WHAT is the basis of a SULP
 - Assign responsibilities and team (creation of an internal responsibilities)
 - Consider city policy, documents and characteristics: other city policies and documents (SUMP, STEP etc), structure, logistics flows, actors etc
 - SDG relation - define potential SDGs and impact of planned measures
- **Involve and define:** HOW do we develop a SULP
 - Stakeholder involvement and actors (multi stakeholder platform and partnership agreements)
 - Topics and measures contributing to SULP targets project plan (time, responsibilities, formats, steps etc.)
 - Receive and analyse data regarding freight transport (volumes, impacts, routes)
- **Measure and monitor:** WHAT should be measured by WHOM and WHY is the information important
 - Criteria definition for documentation, evaluation and establishment of other testbeds
 - Regular audits with stakeholder groups from politics, administration, trade, logistics and the population
 - SDG relation check (see Bypad)
- **Implement and reference:** WHERE should we implement WHAT kind of testbed and HOW should it be done
 - Selection of accorded fact-based testbeds
 - Operation of testbeds and continuous improvement of processes
 - Documentation and transfer of learnings for improvement
- **Reflect and exchange:** WHO does WHAT and HOW and WHY should we have an eye on it
 - Establish regular quadruple helix city exchange
 - Establish regular experience exchange with other cities
 - See | listen | learn and transfer learnings and testbeds
 - Review SDG integration and contribution

A practice-oriented guide for the development of a Sustainable Urban Logistics Plan (SULP) is important for several reasons. First, it **provides a structured approach that helps municipalities and urban planners to systematically tackle the complex challenges of urban logistics**. By taking into account specific local conditions and needs, tailor-made solutions can be developed that meet the individual requirements of cities. Such a guideline facilitates the identification and prioritization of relevant measures that support both economic and ecological goals. This is particularly important to achieve a balance between efficient distribution of goods and minimizing negative environmental impacts such as air pollution and traffic noise.

Furthermore, a practice-oriented guideline **helps to involve all relevant stakeholders - from logistics companies to local authorities and citizens - in the planning process**. This promotes acceptance and cooperation, which is crucial for the successful implementation of the measures. By providing clear instructions and best practice examples, cities can draw on proven methods and promote innovation at the same time. This increases the efficiency of implementation and makes it possible to avoid mistakes and inefficient approaches that may have led to problems in the past.

Another important aspect is the promotion of sustainability. A SULP based on a practice-oriented guideline can **help reduce the carbon footprint of urban logistics, optimize energy consumption and improve the quality of life in cities**. Sustainable urban logistics solutions can be realized through targeted measures such as the use of environmentally friendly means of transport, the improvement of logistics infrastructure and the promotion of technologies to reduce emissions. Overall, a practice-oriented guideline for the development of a SULP enables more efficient, sustainable and inclusive planning and implementation of urban logistics strategies.

5.2 Conclusions

The optimization of urban logistics is becoming a central concern of urban planning and programmes in order to achieve the goals set in terms of climate neutrality, environmental protection and energy efficiency. Functioning logistics are a basic prerequisite for this, especially in an urban environment. Sustainable logistics can create an attractive living, working and supply environment for the population and thus not only enable a comparatively climate-friendly life in cities, but also make it desirable for everyone.

Efforts are required for the development and actual operational implementation in order to achieve the ambitious objectives. According to the current view, “Sustainable Urban Logistics Planning” (SULP) is a sub-component of “Sustainable Urban Mobility Plans” (SUMP). These are seen by the European Commission as a key lever for achieving traffic emission-neutral cities. **The topic is constantly evolving, and now it is time to get the implementation of the operational concepts in the cities**. This requires the development of specific logistics action plans to supplement the respective (mobility) concepts with increased binding force and the involvement of all key stakeholders in the conception and implementation of measures. This is the only way to ensure broad acceptance and a focus on implementation. **Approaches developed purely from the city's perspective run the risk of overshadowing the interests of logistics stakeholders** (deliberately formulated in this way, as these can be diverse). The goals must be ambitious and at the same time feasible within realistic time frames. This balancing act is not easy, but it is essential for success.

SDGs form a global basis and the framework for sustainability goals for all kinds of initiatives and activities. SULPs form the basis and structure for cities and stakeholders to align urban logistics in a sustainable way. **Linking the goals targeted by a SULP to the SDGs underlines the importance of the measures/goals set out in a SULP and their contribution in a global context**. This helps both those who “enforce” the SULP and those who are to implement the measures it calls for to argue and legitimise their actions. The goals and the associated framework are both a curse and a blessing. On the one hand, it is a kind of framework that can also be seen as a guideline; on the other hand, this circumstance also makes it easier to a certain extent, as it is possible to fall back on or refer to existing information.

In the daily work of city administrations, there is often not enough time for an in-depth examination of logistics issues. Logistics is often seen as a sub-topic of mobility and receives corresponding attention. This makes it all the more **important to prepare information and basic principles for logistics in a way that is easy to understand and apply**. The more concrete and applicable the information and recommendations are, the easier it is to integrate them into daily work. This principle is followed in the preparation of the ASAP deliverables. A comprehensive processing of all theoretical findings can already be found in other works/projects. The focus here is on **operationalisation and target-group-oriented preparation**.

In the long term, the combination of SDGs and SULPs means that SULPs and the measures set out in them are more comparable with each other, making them easier to transfer. Every city is different and cannot be compared as a whole with another city. Rather, a city is the sum of many individual streets, neighbourhoods and districts. Their **diversity makes up a city as a whole and makes it only comparable in its entirety to a limited extent**. This fact has to be considered during the individual design of the Sulp. However, the link to specific SDGs makes it possible to compare the intended impact across cities within a uniform framework. This is the added value of the link.

A comprehensive analysis of a city's underlying logistics requirements forms the basis for understanding the topic. The involvement of all relevant stakeholders in the development process of a Sulp is the key to its acceptance. Embedding the objectives pursued with the Sulp in overarching goals creates security and orientation at a strategic level. The contribution of local measures to a global target system creates planning security for decision-makers. The **formulation of concrete measures that can be implemented realistically over time (not just low hanging fruits, otherwise there will be no change) is essential for the operationalization and implementation** of the measures. These principles must be observed if a Sulp is to become more than just a theoretical concept. A practical guide has been defined for this purpose in this deliverable. This contains both theoretical findings from the review of existing SULPs and SDG activities as well as practical experience from the perspective of city administrations and implementation processes.