How to future-proof urban logistics policies!?

ULaaDS D6.5: Take-aways for adaptive policy making in the context of UFT.

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Project abstract

ULaaDS sets out to offer a new approach to system innovation in urban logistics. Its vision is to develop sustainable and liveable cities through re-localisation of logistics activities and re-configuration of freight flows at different scales. Specifically, ULaaDS will use a combination of innovative technology solutions (vehicles, equipment and infrastructure), new schemes for horizontal collaboration (driven by the sharing economy) and policy measures and interventions as catalysers of a systemic change in urban and peri-urban service infrastructure. This aims to support cities in the path of integrating sustainable and cooperative logistics systems into their sustainable urban mobility plans (SUMPs). ULaaDS will deliver a novel framework to support urban logistics planning aligning industry, market and government needs, following an intensive multi-stakeholder collaboration process. This will create favourable conditions for the private sector to adopt sustainable principles for urban logistics, while enhancing cities' adaptive capacity to respond to rapidly changing needs. The project findings will be translated into open decision support tools and guidelines.

A consortium led by three municipalities (pilot cities) committed to zero emissions city logistics (Bremen, Mechelen, Groningen) has joined forces with logistics stakeholders, both established and newcomers, as well as leading academic institutions in EU to accelerate the deployment of novel, feasible, shared and ZE solutions addressing major upcoming challenges generated by the rising on-demand economy in future urban logistics. Since large-scale replication and transferability of results is one of the cornerstones of the project, ULaaDS also involves four satellite cities (Rome, Edinburgh, Alba Iulia and Bergen) which will also apply the novel toolkit created in ULaaDS, as well as the overall project methodology to co-create additional ULaaDS solutions relevant to their cities as well as outlines for potential research trials. ULaaDS is a project part of ETP ALICE Liaison program.

Keywords

SULP, SUMP, urban logistics, city logistics, urban freight, policy-making, adaptive capacity, uncertainty, future-proof, strategic planning

Copyright statement

URBAN LOGISTICS AS AN ON-DEMAND SERVICE

Executive summary

Guiding urban logistics towards sustainability is a journey filled with many and diverse stakeholders, unpredictable processes, and cutting-edge technologies. The interconnected logistics system poses unforeseen challenges, putting logistics policy-making to the test. Policymakers are well aware of the uncertainties that affect the Sustainable Urban Logistics Plan, yet with limited resources, data, and strategic insight in the future, their tasks remain challenging.

The adaptive SULP-cycle lends a helping hand to policymakers. With five strategic steps, it guides adaptive policy-making and equips decision-makers to maintain robustness and bolster responsiveness amidst unexpected changes. These strategies offer concrete actions and instil a mindset empowering policymakers to proactively address uncertainties, enhancing the adaptive capacity of SULP.

ADAPTIVE SUSTAINABLE LOGISTICS PLANS

- 5 Acting responsively and making adjustments if needed
- 1 Raising awareness about system's complexity
- Implementation & Monitoring
- Preparation & Analysis
- **SULP Cycle**
- Measure Planning
- Strategy Development
- 2 Mapping Uncertainties
- 4 Increasing robustness of policy measures
- 3 Adopting adaptive strategy principles

1 Be aware of the systems's complexity

Embrace the complexity mindset in urban logistics policymaking. It is a call for considering and addressing the multiple ways in which flows, actors, nodes, and policies interact with the urban logistics system and its interconnections with other systems. Dive into activities like stakeholder analyses, causal loop diagrams or storytelling, that can help to identify and unravel the complexities of urban logistics.

2 Map uncertainties

Invest in identifying a broad range of potential changes in the urban logistics system. Keep an eye on what's happening and understand how policies and innovations impact the SULP. You can use tools like forecasts, visual narratives, experiments or informal discussions with colleagues to unveil uncertainties in urban logistics.

3 Adopt adaptive strategy principles

Adopt these five adaptive principles at a strategic level to make SULPs and SUMPs really work in all sorts of situations: 1) Use visioning as a beacon in adapting to change, 2) Embrace openness in your city, 3) Take small steps consistently, 4) Experiment and learn from doing new differently, and 5) Strengthen resilience by involving stakeholders. These principles are your keys to success in navigating different and evolving circumstances.

4 Increase the robustness of policy measures

By planning adaptive actions to possible changes prior to the implementation of policy measures, SULPs or SUMPs can perform even in changing situations. The types of actions are to seize opportunities, maximize possibilities, prevent expected problems, and limit undesired effects. Think of it as having a roadmap with signposts – defining actions to seize opportunities and limit undesirable effects beforehand and keeping an eye on the progress helps to know when to make adaptive moves. This way, you are not just navigating change but also ensuring your policies stay effective.

5 Act responsibly and make adjustments if needed

Keep tabs on how your SUMP or SULP is performing and monitor the progress regularly. If an unexpected development pops up or policy measures need an adjustment, take action! Readjust the policy measure to the changed context, take advantage of possibilities to improve it, or reconsider policy objectives. Fine-tune your SULP on the fly, so the policy objectives and measures are a match with the changed situation.

Key investments to make for success

Incorporating adaptivity into SULPs is hard work. Expecting policymakers to strategically navigate unforeseen developments is only realistic when they have the time and resources to grasp potential changes, disruptions and events in urban logistics systems. This means regular talks with local stakeholders and experts, having reliable data on logistics movements, and creating future-proof policies. Also, policymakers should get the mandate to experiment, actively learn from it and make necessary adjustments accordingly.

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1. Introduction

Defining, designing and implementing a sustainable urban logistics plan which contributes to economic, social and environmental sustainability is highly challenging. The logistics system is coupled with many other systems (Browne et al., 2023) and logistics systems are open systems, which means that they are sensitive to changes in their context (Portugali, 2006; Batty, 2018). Due to the impact of contextual developments and the heterogeneous web of logistics stakeholders, unexpected opportunities and barriers for a policy plan may emerge over time, or policy measures prove to be less suitable or even counter-productive.

In developing Urban Sustainable Logistics Plans (SULPs), urban planners thus have the difficult task of finding an effective balance between setting direction while acknowledging and being responsive to the many uncertain developments that can potentially impact the planning process. ULaaDS Deliverable 6.4. points out that policymakers are well aware that their policy-making practices are confronted with uncertainties, and that different types of uncertainties are generally well-recognized. However, it also shows that the limited availability of resources (time, budgets, personnel) in combination with the lack of a systematic approach in dealing with change, puts further strain on local authorities' efforts to effectively plan for the future.

To keep SULPs effective under changing circumstances, we propose to expand existing SULP guidelines with steps that strengthen their adaptivity. The "adaptive SULP-cycle" is presented in Figure 1. Each phase of the existing SULP-cycle (see Aifandopoulou & Xenou, 2019), represented by the four blue quadrants, is complemented with strategies policymakers can deploy in dealing with uncertainties in guiding city logistics towards more sustainable futures and thus how to develop more adaptive Sustainable Urban Logistics Plans. The strategies include, 1) Raising awareness about the complexity of the urban logistics system, 2) Mapping uncertainties that may affect the urban logistics situation and the related policy goals, 3) Adopting adaptive strategy principles in the urban logistics policy design, 4) Increasing robustness of urban logistics policy measures, and 5) Acting responsively during policy implementation if needed.

This document outlines each of the five steps from the Adaptive SULP-cycle and explains why and how they might help SULPs or SUMPs become more adaptive. An extensive explanation and substantiation of the adaptive SULP-cycle can be found in ULaaDS deliverable 6.4.

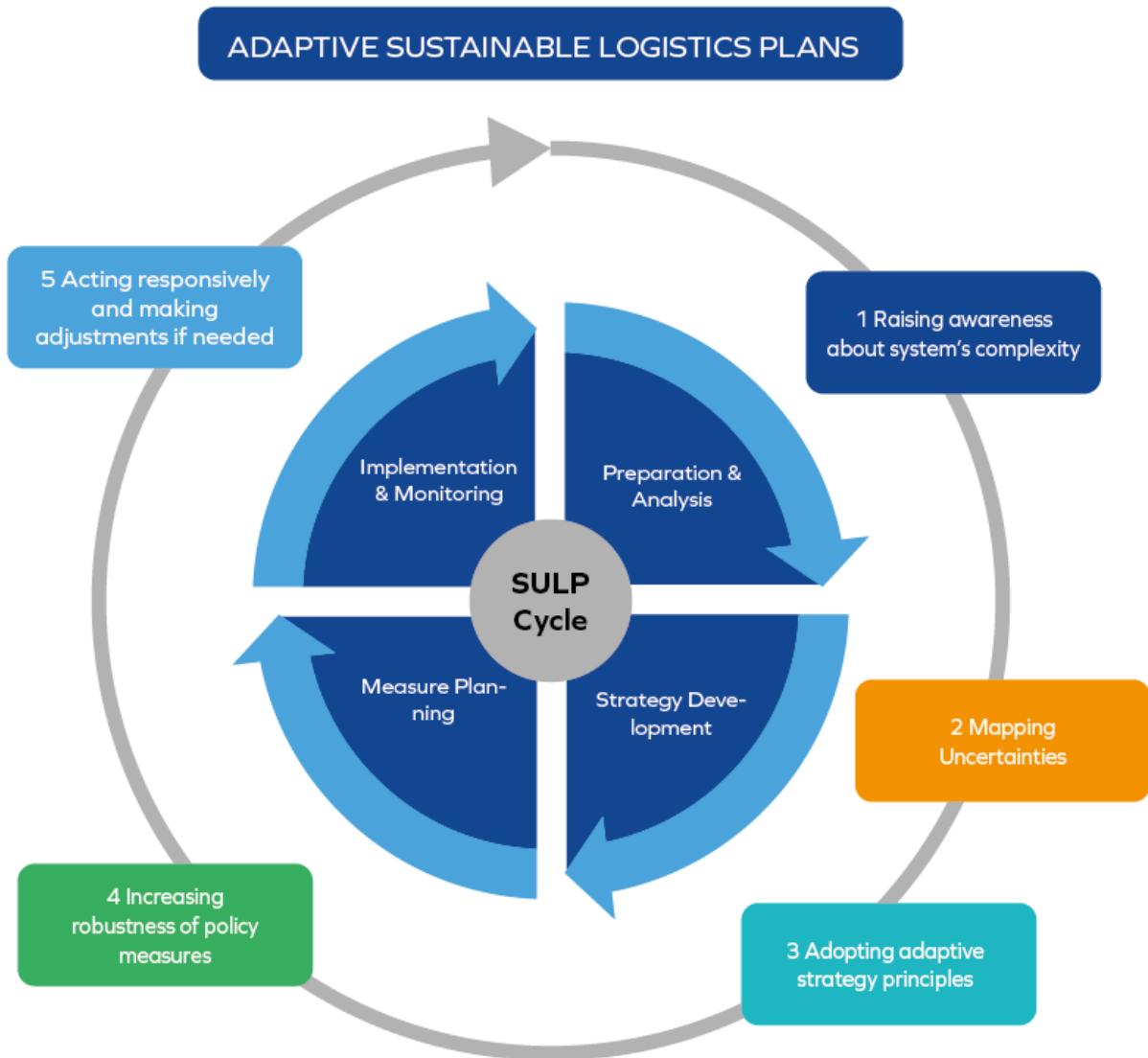Figure 1 The adaptive SULP cycle, proposing 5 strategies to enhance the adaptive capacity of Sustainable Urban Logistics Plans.

2. Raising Awareness about the Sytems's Complexity

2.1 Why is this step important?

An increased awareness about the system's complexity enables policymakers to communicate about the interconnectedness of urban logistics demands, flows and effects with policy target groups and can set the stage for adaptive actions. It contributes to a policy approach and mindset in which investing in the capacity to map and deal with unforeseen processes, events, or innovations is not seen as something extra. Instead, acknowledging complexity comes with the realization that adaptability is a crucial element in robust and effective urban logistics policies in the long run (c.q. Kupers & Colander, 2014).

Raising awareness about the complexity of the urban logistics sector is about explicating the connection of urban logistics systems with many other systems in the city and beyond (ULaaDS Deliverable D6.1) This requires the need for sensitivity to changes in, for instance, consumer preferences, new technological opportunities, changes in national or European legislation and global crises such as the Covid pandemic and the war in Ukraine. Recognising complexity is also about acknowledging the emergent nature of new logistics patterns and routines (Janjevic et al, 2019).

2.2 Which methods can be helpful?

There are multiple methods and activities that can boost awareness of urban logistics' complexity among stakeholders, targeting both policy designers and target groups. Examples include:

- Conducting policy and stakeholder network analyses, which visualize relationships between policy domains and actors, their interdependence, volatility and vulnerability (Figure 2).

- Developing causal loop diagrams that visually map how logistics processes, hubs and flows are interrelated (Figure 2).

- Through workshops, city walks, and storytelling that foster interactions with stakeholders' understanding of urban logistics operations as they are ingrained in day-to-day living in cities.
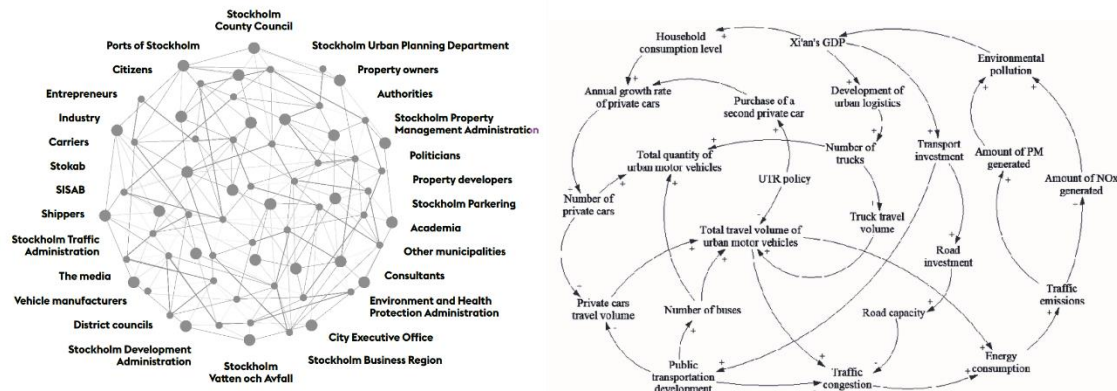
Figure 2 Example of a policy and stakeholder network analysis (City of Stockholm) (left) and a causal loop diagram (Shi et al., 2019) (right)

3. Mapping Uncertainties

3.1 Why is step important?

Mapping uncertainties systematically will support scenario building and assessment. In more general terms, it contributes to the realization that guiding urban logistics towards more sustainable pathways is surrounded by potential (unexpected) change. By mapping the uncertainties, you can identify developments that could affect your city and thereby the strategy development for the city's logistics policy plan. Events, policy effects, and business innovations are examples of uncertainties that could impact the development, progress or implementation of your policy plan.

3.2 Which methods can be helpful?

The mapping exercise consists of the systematic delineation of possible uncertainties. For this, policymakers can employ the four methods that are outlined below (see also Figure 3).

- Forecasting can be used to make informed estimates on the direction of trends using historical quantitative data and to distil probable futures and related uncertainties.

- Foresight techniques use narrative and qualitative data to explore possible futures and related uncertainties in a collaborative and organised setting.

- Exploring by testing allows for exploring the effects of and responses to local and specific logistics solutions in a relatively controlled manner.

- Exploring by consultation aims to keep tabs on the progress of stakeholders, comprehending one another's interests and signalling new developments early on through informal and unstructured contact with stakeholders and experts.

Figure 3 Visualization of the four methods for mapping uncertainties

3.3 Extra insights from ULaaDS on how to get you started

1 The Uncertainty Scan

Perform an uncertainty scan. In ULaaDS Deliverable 6.1, in paragraph 4.3 'Exploring uncertainty', Table 2 (page 28-30) conveys the different steps on how policymakers and stakeholders could scan for uncertainties that could affect the SULP or the city's logistics system collectively.

2 The What-if Game

Next to exploring the possible uncertainties that surround your city's logistics system, it is important to ask yourself what actions are required to obtain a better understanding of the uncertainty and its implications that you are confronted with. To practice this step, there is a game available with which you can explore five different uncertainty types and their possible implications. Please check out Appendix 1, in which you will find the game rules and corresponding materials.

4. Adopting Adaptive Strategy Principles

4.1 Why is this step important?

Integrating or cultivating complexity into logistics policy design requires the adoption of adaptive strategy principles. These are principles that enable and prepare urban logistics plans to respond to

changing conditions so that these plans are effective for the range of possible futures that can emerge out of the complex interactions in urban logistics systems.

4.2 Five principles for adaptive urban logistics policy-making:

1 Visioning for enabling adaptive navigation.

Ideally, visioning results in inspiring images and stories about preferable futures that show new possibilities and also motivate actors to align their actions (Shipley & Michela, 2006). While often associated with blue-print planning, visioning is also key for more adaptive and flexible policy-making as it provides orientation on when to adapt and in which direction. For instance, when the instalment of a zero-emission zone triggers the reallocation of small shops to areas outside the city centre, a future vision of urban logistics in this particular city provides a point of reference for assessing whether such a reallocation is desirable, and if not, in which direction policy measures should be adjusted.

2 Guiding principles for an open city.

When translating a long-term vision into urban logistics policies, it is essential to focus these policies as much as possible on general guiding principles. These are principles that are simple in nature and provide bounding conditions while leaving room for a range of possible actions (Moroni et al., 2020); thus an open and dynamic city. Examples of such guiding principles include a rule that in areas with an urban density higher than X, pick-up points need to be integrated with existing urban facilities; or that in area X, urban functions with more than Y deliveries a day should have an internal loading bay from year Z onwards; or, that in urban zone X, non-food and non-medical goods have to be delivered during the night from year Y onwards.

3 A staged/incremental approach.

This implies taking the layering or patching of policy actions (Howlett and Rayner 2007, 2013) as an acceptable and even preferred way of policy-making. Implementing policy actions incrementally allows for taking into account changes in urban logistics systems and external conditions that unfold over time. For example, a layered implementation of a zero-emission zone that leaves room for improvisation may start with an awareness campaign amongst shop owners on the impact of their deliveries. Based on their responses, cooperation between the shop owners and bike delivery companies for local delivery might be established or a free-trial period of electric delivery vehicles for local shop owners (See ULaaDS D5.2 p 48-50 or Gemeente Groningen, 2021).

4 Experimentation and learning

Experimentation is a process of 'trial-and-error' to find a way to deal constructively with uncertainty (Sanderson, 2009) by doing something novel (McFagden & Huitema, 2017). For instance, experimenting with potential novel ways of micro-consolidation provides insights into how the future of urban logistics may look like. The experiences obtained with the experiments can be put to use in developing policies that anticipate certain micro-consolidation practices. However, translating

experiences into policy innovation does not happen spontaneously and instead requires learning. Learning refers to the process of reflecting on policy actions, the spatial and institutional setting and possible changing circumstances (Argyris and Schön, 1996; Nair & Howlett, 2017). The obtained knowledge can then be used to inform decisions on whether and how policies should be adapted. This to improve the fit between the policy objectives, the intervention and the current circumstances, to realize synergies with other policy actions, and to reduce undesired effects. Learning can amongst others be facilitated with systematic monitoring of policy actions, stakeholder fora, and replication strategies (ULaaDS D2.2).

5 Building resilience through stakeholder involvement.

Conditional to the above principles is a structural involvement of stakeholders. Complementing the emphasis on stakeholder involvement in the traditional SULP-cycle, adaptive policy-making provides an additional motivation to invest in stakeholder involvement. Involving a wider range of stakeholders allows for activating more resources and perspectives in responding to (unexpectedly) changing circumstances (Tyler, 2009; Innes & Booher, 2010). For instance, building a coalition of local stakeholders can make an incremental implementation of sustainable logistics solutions driven by a long-term vision more resilient to disruption in the provision of new vehicles, the bankruptcy of local partner organizations or unexpected new logistics demands as witnessed during the Covid-19 pandemic.

5. Increasing Robustness of Policy Measures

5.1 Why is this step important?

It is important to increase the robustness of policy measures in this stage of SULP development to make sure that measures remain effective under changing circumstances and that a plan B is in place. For this, policymakers can use their knowledge of possible uncertainties gained through the "mapping exercise" (Step 2). Uncertainties can be specified as threats and opportunities to specific SULP measures, as well as for their level of uncertainty. Subsequently, appropriate actions to make policy measures more robust can be identified with a specification of who should take action, of what kind, where and when.

5.2 Which methods can be helpful?

Table 1 provides an overview of four types of actions that can be taken to increase robustness, illustrated with an example of the implementation of a ZE-zone. These actions include:

1. Seizing actions that take advantage of certain (or very likely) opportunities that may prove beneficial to the plan.

2. Exploiting actions that take advantage of (uncertain) new developments that can make the plan more successful, or succeed sooner.

3. Mitigating actions that reduce adverse impacts on a plan stemming from certain (or very likely) vulnerabilities.

4. Reducing actions that reduce adverse impacts on a plan or spread or reduce risks that stem from uncertain vulnerabilities.

Table 1 Actions for increased robustness with an example of the implementation of a ZE-zone (framework based on Walker et al., 2013.

Type of uncertainty	Degree of uncertainty	Action if change arises	Example: zero-emission zone
Opportunity	Low	Seizing likely opportunities	Improved air quality • Awareness campaign with citizens science app
Opportunity	High	Exploiting potential opportunities	Alternative use of public space • Temporal street furniture
Threat	Low	Mitigating expected negative side effects	Protest of SME's • Provide shared electric vehicles • Implement transition period
Threat	High	Reducing the likelihood of potential undesired effects	Cost overruns of surveillance systems • Pilots • Use proven technology

Identifying "when to take adaptive action" in the measure planning stage is difficult, as no one knows for sure how unforeseen developments will materialise and what "the right moment" is to step in. In some cases, it might help to define so-called "signposts" to monitor when actions are needed to guarantee the progress and success of the policy. Critical values of signpost variables are specified beforehand, beyond which actions should be implemented to ensure the policies progress in the right direction and at the proper speeds (Walker & Marchau, 2017).

5.3 Extra insights from ULaaDS on how to get you started

The choice of what steps to take to strengthen the policy measures' robustness depends on the degree of uncertainty. The degree of uncertainty can be ascertained by taking into account both the uncertainty of the situation at hand and the capacity of local authorities to leverage uncertainty. Four questions are provided by the tool shown in Figure 4 to help assess the capacity of local authorities to leverage uncertainty (the upper side of the figure) or situational uncertainty (the bottom side of the figure). When there is a high capacity to leverage uncertainty and a low level of situational uncertainty, policymakers are confronted with a low degree of uncertainty. In these situations, they

can choose to deploy either seizing actions or mitigating actions as shown in Table 1. If the capacity to leverage uncertainty turns out to be low but the uncertainty of the situation is high, policymakers are confronted with a high degree of uncertainty and choose actions that exploit potential opportunities or reduce the likelihood of potential undesirable outcomes.
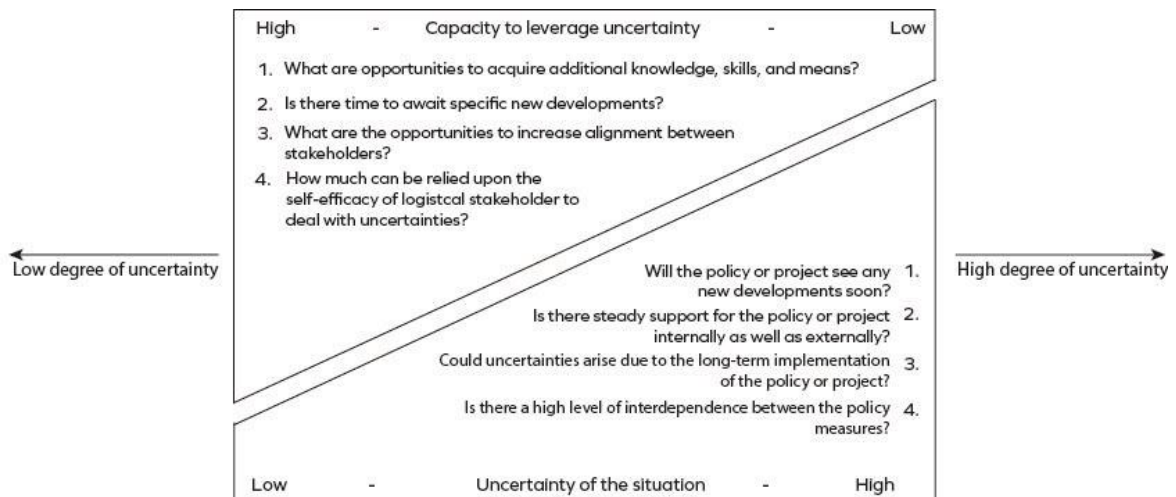

Figure 4 An ULaaDS tool to assess the degree of uncertainty and offer guidance in selecting the course of action to strengthen the robustness of policy measures.

6. Acting Responsively during policy implementation

6.1 Why is this step important?

The implementation of the SULP is coupled with continuous monitoring and a regular review of progress and results (phase 4). In this stage, it is important to be alert and "ready to adapt", i.e., act responsively and make adjustments if needed. Information on the progress of SULP and the impact of policy measures is obtained through monitoring programmes. Although systematic monitoring, reflection and learning are often seen as secondary issues in policy practice, they are crucial for more adaptive policymaking (Step 3 of the adaptive SULP-cycle). Policymakers are advised to continuously keep an eye on the possible uncertainties identified in the mapping exercise (Step 2), to see whether new developments or unforeseen policy effects arise.

6.2 Which methods can be helpful?

When conditions change, policy measures can be adapted to realign them with the SULP objectives, or, in extreme cases, SULP objectives need reconsideration. Based on the Dynamic Adaptive Policy-

making framework by Walker et al. (2013b), four types of responsive actions are distinguished and illustrated with an example of the implementation of a ZE-zone in Table 2:

- *Defensive actions* are meant to tackle disturbances to the policy measure.
- *Corrective actions* that imply the adjustment of the policy measure to ensure a better fit between policy goal, policy measure and the changed situation.
- *Capitalizing actions* to take advantage of opportunities that can improve the performance of the policy measure.
- *A reassessment* of the policy goals and policy measures was initiated when the overall logic of the SULP lost its validity.

Table 2 Actions for increased responsiveness with an example of the implementation of a ZE-zone (framework based on Walker et al., 2013).

Degree of adaptation	Action	Example: zero-emission zone
Adapt within SULP objectives	Defensive against disturbances	Illegal entries of ZE zone • Information campaign • Intensify surveillance & fines
Adapt within SULP objectives	Corrective to unexpected changes	Spontaneous informal cross-docking • Adjusting coverage of zero-emission zone
Adapt within SULP objectives	Capitalization by embracing changes to add value	Furthering health benefits • Greening the city • Foster walkability
Reconsider SULP objectives	Reassessment of the policy goals and policy measures	Ongoing societal protest, structural technical failures

7. Conclusion

Integrating adaptability into Sustainable Urban Logistics Plans (SULPs) poses formidable challenges. The anticipation of policymakers to adaptively navigate unforeseen developments becomes a feasible task solely under the conditions of having sufficient time and resources to comprehend potential alterations, disruptions, and events within urban logistics systems. This necessitates regular dialogues with local stakeholders and experts, access to reliable data pertaining to logistics movements, and the formulation of future-proof policies. Not only that, but policymakers should also have the power to take on experimental projects, actively learn from them, and then make the necessary interventions.

Acronyms

Acronym	Meaning
AI	Artificial Intelligence
AV	Autonomous Vehicles
D	Deliverable
EC	European Commission
GA	Grant Agreement
ICT	Information and Communication Technology
LF	Load Factor
LSP	Logistics Service Provider
O	Objective
ODD	On-demand Delivery
P	Product
PPP	Public Private Partnership
PM	Person Month
SUMP	Sustainable Urban Mobility Plan
SULP	Sustainable Urban Logistics Plan
T	Task
UC	Use Case
UCC	Urban Consolidation centre
UFT	Urban Freight Transport
ULaaDS	Urban Logistics as an on-Demand Service
WBS	Work Breakdown Structure
WP	Work Package
VUR	Vehicle Utilisation Rate
ZEV	Zero Emission Vehicle

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Annex 1 Exploring Uncertainties. The What-if Game

Game description:

The What If- card game helps to explore how potentially unforeseen developments may shape logistics systems in your city. The game consists of five uncertainty cards and an answer form with two questions that can be printed or used digitally.

Each of the five uncertainty cards describe an example of an unforeseen development that corresponds with the five uncertainty categories as presented in the ULaaDS deliverable 6.4; value uncertainty, organizational uncertainty, causal uncertainty, external uncertainty and uncertainty by chance. The game can be used to distil possible actions to generate a better understanding of the unforeseen development and its consequences. Furthermore, the game helps to think about what activities you and or your colleagues could undertake to make sense of the possible influences of the uncertainty on your city (or other relevant context).

Next, the game invites you to think of two ways (this can be activities, strategies, changes, etc) that can prepare your current urban logistics policy plan to respond to or deal with the uncertainty.

Game instructions:

1. Each participant, group of participants or pair of participants receives one of the five uncertainty cards and an answer form.

2. Each uncertainty card describes a different unforeseen development that you will be confronted with.

   a. Read the card carefully and answer question one on the answers form: "Responding to unforeseen change starts with sense-making: Which actions would you take to obtain a better understanding of the developments you are confronted with and their potential implications for your policy?".

   b. Discuss what activities could help you (and your group) and write down the answer on the answer form. Answer question 1 on the answer form.

3. Repeat the actions of step 2 and answer question two of the answer form: "Could you think of two ways to make your current policy plan ready for dealing with this unforeseen development? ".

Game materials:

5x Uncertainty cards

1x Answer form

Uncertainty cards:

The new development you're confronted with:

CITY LOGISTICS BECOMES A PUBLIC TASK

Changing course in politics: Local politicians decide that city logistics is becoming too important to leave to the market. Therefore, a local public authority is established for logistics services.

ULaaDs Study Visit Mechelen - Workshop 2022

The new development you're confronted with:

THE INNER CITY MOVES OUT

Due to the implementation of a zero-emission zone, shops and other services move their business out of the city centre to avoid the zero-emission constraints.

ULaaDs Study Visit Mechelen - Workshop 2022

The new development you're confronted with:

CENTRAL PARTNER GOES BANKRUPT

A key player in a public-private partnership to establish a platform system for vehicle sharing and freight consolidation goes bankrupt. Vital knowledge and expertise are lost, and the platform as a key building block of your policy is at risk.

ULaaDs Study Visit Mechelen - Workshop 2022

The new development you're confronted with:

ELECTRIC VEHICLES GET STRANDED

The electricity network management of city x cannot provide enough recharging points in the city. Businesses that invested in electric vehicles are unable to make use of their transportation.

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The new development you're confronted with:

THE MUNICIPALITY GETS HACKED!

The ANPR (Automatic Number Plate Recognition) system of the municipality is hacked and sensitive data is stolen. As a result, the trust of the community in the digital enforcement of the zero-emission by the municipality is lost and regulations are ignored.

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Answer form:

WORKSHOP FORM

Participant 1:
Name:_____

Job description:_____

Context city:_____

Participant 2:
Name:_____

Job description:_____

Context city:_____

Responding to unforeseen change starts with sense-making: Which actions would you take to obtain a better understanding of the development you are confronted with and its potential implications for your policy?

Could you think of two ways to make your current policy plan ready for dealing with this unforeseen development?
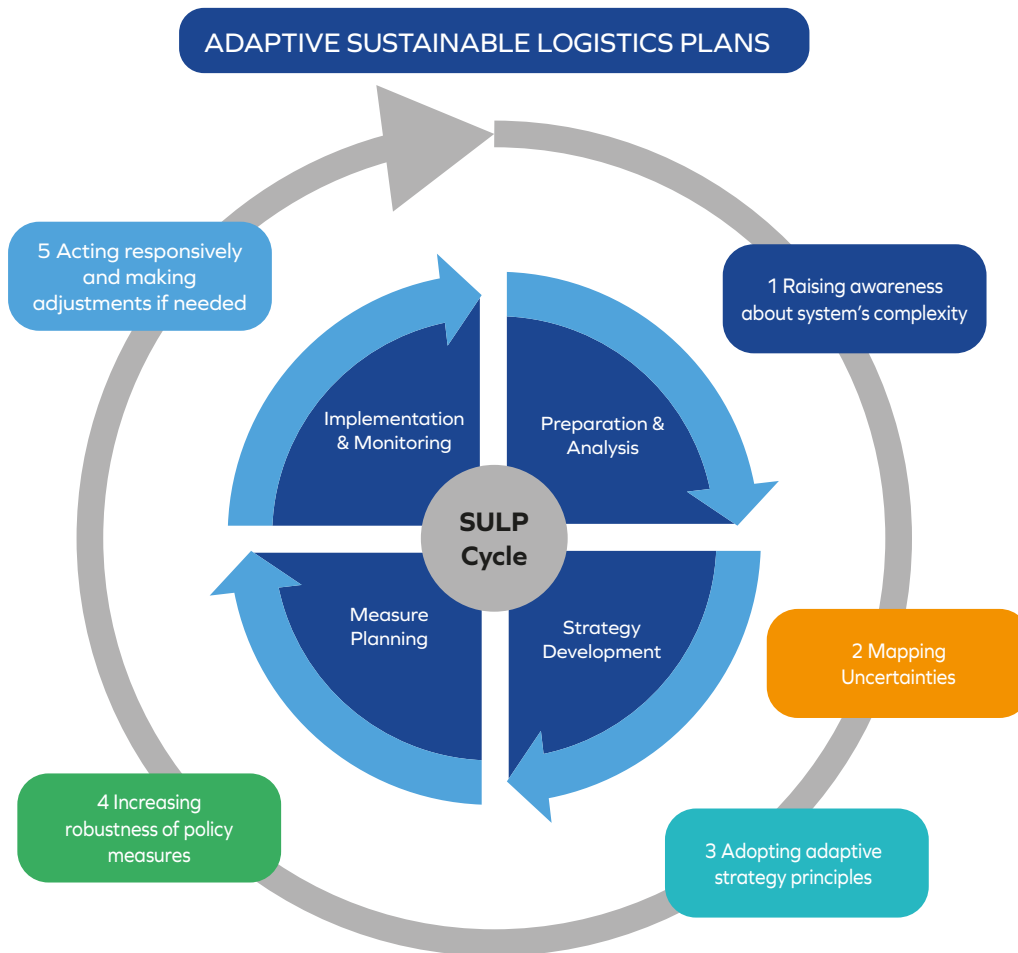
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How to Future-Proof Urban Logistics Policies?!

Guiding urban logistics towards sustainability is a journey filled with many and diverse stakeholders, unpredictable processes, and cutting-edge technologies. The interconnected logistics system poses unforeseen challenges, putting logistics policy-making to the test. Policymakers are well aware of the uncertainties that affect the Sustainable Urban Logistics Plan, yet with limited resources, data, and strategic insight in the future, their tasks remain challenging.

The adaptive SULP-cycle lends a helping hand to policymakers. With five strategic steps, it guides adaptive policy-making and equips decision-makers to maintain robustness and bolster responsiveness amidst unexpected changes. These strategies offer concrete actions and instil a mindset empowering policymakers to proactively address uncertainties, enhancing the adaptive capacity of SULP.

ADAPTIVE SUSTAINABLE LOGISTICS PLANS

SULP Cycle

- Preparation & Analysis
- Strategy Development
- Measure Planning
- Implementation & Monitoring

- 1 Raising awareness about system's complexity
- 2 Mapping Uncertainties
- 3 Adopting adaptive strategy principles
- 4 Increasing robustness of policy measures
- 5 Acting responsively and making adjustments if needed

1 Be aware of the systems's complexity

Embrace the complexity mindset in urban logistics policymaking. It is a call for considering and addressing the multiple ways in which flows, actors, nodes, and policies interact with the urban logistics system and its interconnections with other systems. Dive into activities like stakeholder analyses, causal loop diagrams or storytelling, that can help to identify and unravel the complexities of urban logistics.

2 Map uncertainties

Invest in identifying a broad range of potential changes in the urban logistics system. Keep an eye on what's happening and understand how policies and innovations impact the SULP. You can use tools like forecasts, visual narratives, experiments or informal discussions with colleagues to unveil uncertainties in urban logistics.

3 Adopt adaptive strategy principles

Adopt these five adaptive principles at a strategic level to make SULPs and SUMPs really work in all sorts of situations: 1) Use visioning as a beacon in adapting to change, 2) Embrace openness in your city, 3) Take small steps consistently, 4) Experiment and learn from doing new differently, and 5) Strengthen resilience by involving stakeholders. These principles are your keys to success in navigating different and evolving circumstances.

4 Increase the robustness of policy measures

By planning adaptive actions to possible changes prior to the implementation of policy measures, SULPs or SUMPs can perform even in changing situations. The types of actions are to seize opportunities, maximize possibilities, prevent expected problems, and limit undesired effects. Think of it as having a roadmap with signposts – defining actions to seize opportunities and limit undesirable effects beforehand and keeping an eye on the progress helps to know when to make adaptive moves. This way, you are not just navigating change but also ensuring your policies stay effective.

5 Act responsibly and make adjustments if needed

Keep tabs on how your SUMP or SULP is performing and monitor the progress regularly. If an unexpected development pops up or policy measures need an adjustment, take action! Readjust the policy measure to the changed context, take advantage of possibilities to improve it, or reconsider policy objectives. Fine-tune your SULP on the fly, so the policy objectives and measures are a match with the changed situation.

Key investments to make for success

Incorporating adaptivity into SULPs is hard work. Expecting policymakers to strategically navigate unforeseen developments is only realistic when they have the time and resources to grasp potential changes, disruptions and events in urban logistics systems. This means regular talks with local stakeholders and experts, having reliable data on logistics movements, and creating future-proof policies. Also, policymakers should get the mandate to experiment, actively learn from it and make necessary adjustments accordingly.

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URBAN LOGISTICS AS AN ON-DEMAND SERVICE