Understanding freight and logistics in urban areas of the Global South



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Table of Contents

Executive summary 06

Defining key concepts of the supply chain 08
What do “urban freight” and “urban logistics” refer to? 08
Flows characterised by their origin-destination pair 10
Cities: nodes to coordinate these flows and create a supply chain 12
Flows characterised by stakeholders’ interaction 14
Urban infrastructures: storage, consolidation and distribution centres 16
Urban logistics modes 20

Overview of logistics in Global South cities 23
Key trends and specificities of urban logistics in urban areas of the Global South 24
Key stakeholders for logistics in urban areas of the Global South 45
Key challenges and opportunities for logistics in urban areas of the Global South 51

Governing urban freight and logistics in Global South cities 69
Policy objectives and instruments 70
The different levels of governance: from local to national 78

Key recommendations 80

Bibliography 100

Executive summary

Urban logistics is no longer a purely private, business-led function. It underpins cities' economic and social vitality by ensuring the continuous supply of households, markets, and firms, and by supporting the supply chains that sustain urban productivity. In the Global South, rapid urbanisation, the rise of e-commerce and platform delivery, and the densification of built-up areas are driving strong growth in goods movements, often within constrained and saturated transport networks. At the same time, urban logistics remains a persistent blind spot in mobility planning and urban development, despite its visible impacts on congestion, curbside occupation, safety risks, air pollution and delivery inefficiencies.

This document establishes a shared understanding of key concepts related to urban freight and logistics. It guides the integration of these concepts into urban mobility systems, planning, and development for the publication's target audience.

This report frames urban logistics as an ecosystem whose performance depends on the interplay of four key dimensions: physical operations; support services (including technology and data); stakeholder interactions and coordination; and regulatory and planning frameworks. Building on a structured overview of urban freight flows, logistics facilities and delivery modes, the report analyses major trends in Global South cities, including fragmented and informal delivery systems, growing operational complexity, data and institutional capacity gaps, and the increasing importance of gateway corridors (the concept of Gateway cities and urban nodes is defined in 2.1 and detailed in chapter 3.1.6) and resilience to geopolitical and climate shocks.

The report then reviews the main public instruments available to govern urban logistics, ranging from street-level regulation and curb management to zoning policies, land use planning, environmental access regimes, and pricing policies. It also highlights the need to link strategic planning with the conditions for operational delivery.

The report concludes with actionable recommendations to strengthen governance and implementation capacity and better integrate logistics into mainstream urban policy. It proposes establishing dedicated public leadership through an Urban Logistics Task Force, complemented by a public–private consultative forum to support problem-solving and co-design processes. It recommends integrating logistics into mobility plans and urban development strategies through a phased action framework, while safeguarding and allocating logistics land across regional, metropolitan and municipal scales to enable consolidation and proximity-based logistics. It also calls for structured curbside governance to safeguard delivery space and enable efficient use of smaller modes, alongside corridor-level governance for gateway cities to manage port–market–distribution linkages. Finally, it highlights the need for supportive transition packages: incentive-driven fleet modernisation aligned with charging infrastructure rollout, national skills pipelines to match digital transformation and improve public-sector capacity, and phased programmes to upgrade informal logistics through collective arrangements that deliver both operational gains and improved working conditions.



Pointe-noire
Photo: Transitec

Defining key concepts of the supply chain

What do *urban freight* and *urban logistics* refer to?

This section establishes a shared framing for the rest of the document by specifying what “urban freight” and “urban logistics” mean in practice. It then narrows this definition into concrete planning objects—types of flows, the facilities that support them (storage, consolidation and distribution), and the main delivery modes used in cities.

Logistics

Logistics encompasses the activities involved in moving goods. It ensures a continuous supply to businesses and populations while supporting the supply chains that underpin city and industry operations.

For logistics stakeholders, the aim is to optimise costs and lead times across supply, production, distribution, and return flows.

Logistics can be analysed across four key dimensions: physical operations, support services, stakeholder interactions and regulatory frameworks.

Figure 1 **Logistics four key dimensions.**

Physical operations

- Transportation of goods across space and time
- Conditioning of goods: order preparation, packaging
- Warehousing and goods storage
- Shipment dispatching and final delivery
- Returns and recycling management
- Empty pallet and packaging handling

Support services

- Technology and data services
  - IT solutions such as route optimisation (algorithms, AI), real-time tracking of fleets and transportation management systems (TMSs), warehousing management systems (WMSs), data collection
- Physical services
  - Dedicated spaces for delivery workers to rest, eat and carry out administrative support services.
- Logistics Financial and Risk Service Providers
  - Insurers, brokers, any financial services

Logistics

Regulatory framework

- Urban access management measures on rolling stock such as low emission zones, traffic-calming area, traffic management plans
- Policy on delivery zones and time restrictions
- Regulations on delivery vehicles (age/ environmental standard, size, type) and enforcement
- Planning of logistics parks, the reservation of land for efficient logistics buildings through zoning ordinance

Stakeholder interactions

- Between two private actors, for example: (“shippers”, manufacturers, sellers, and carriers/logistics service providers;
- Between public and private actors, for example city administration and delivery companies;
- Between two public actors, for example, researchers and city administration.

Urban freight

Urban freight focuses specifically on the physical transport and movement of goods into, out of, through, or within urban areas. Urban logistics, by contrast, is broader, covering all activities related to goods handling in cities, including physical operations, support services, stakeholder interactions and coordination, and the regulatory framework.

Defined by these four dimensions, urban logistics appears to be a complex system that depends heavily on the territorial context. Urban morphology, density, economic dynamics, available infrastructure, and political choices profoundly influence how flows are organised and which logistics solutions are implemented.

Flows characterised by their origin-destination pair

The different types of logistics flows in urban areas can be divided into four categories:

01

Flows transiting through and out of an urban area.

02

Flows originating from an urban node located in the hinterland (of the global supply chain) that arrive in an urban area and remain there.

03

Flows moving from an urban area to the hinterlands or the global supply chain.

04

Flows that are endogenous to the city and moving within the urban functional area.

In light of this typology, cities can bear different characteristics:

'Transit cities' (A, B)
These cities are urban nodes in global supply chains where a large share of goods passes through the urban area, or even the city centre, without bypass infrastructure.

Goods may be temporarily stored in warehouses or dry ports in the urban area or nearby, especially when transhipment is required. These cities tend to be located on key freight corridors.

Those hosting major hubs like seaports, airports, dedicated carriageways, or major logistics parks act as key urban nodes that channel freight flows inland.

Cities with such bypass infrastructure can better manage city-centre externalities linked to heavy logistics traffic, such as congestion, pollution, and noise.

Production cities (C, D)
Beyond transit or gateway roles, production cities generate goods for export; for example, agricultural regions where hinterland farmland supplies the city while producing goods for the global market (C). Industrial cities import raw materials, process them into value-added products for export, while food-processing hubs often blend both models by combining local produce with imports (D).

Consumption Cities (E)
Consumption cities rely more on inbound flows, importing food to feed populations, building materials for urban growth and manufactured goods to meet consumer demand. They also generate outflows in the form of waste, and in some cases, value-added products or recycled materials.

Figure 2 **The different types of logistic flows.**

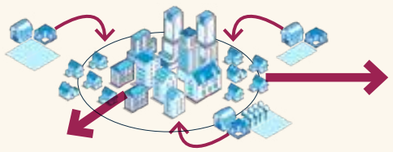
A. Transit city without bypass infrastructure



B. Transit city with bypass infrastructure



C. Agricultural production city



D. Industrial production city



E. City of consumption



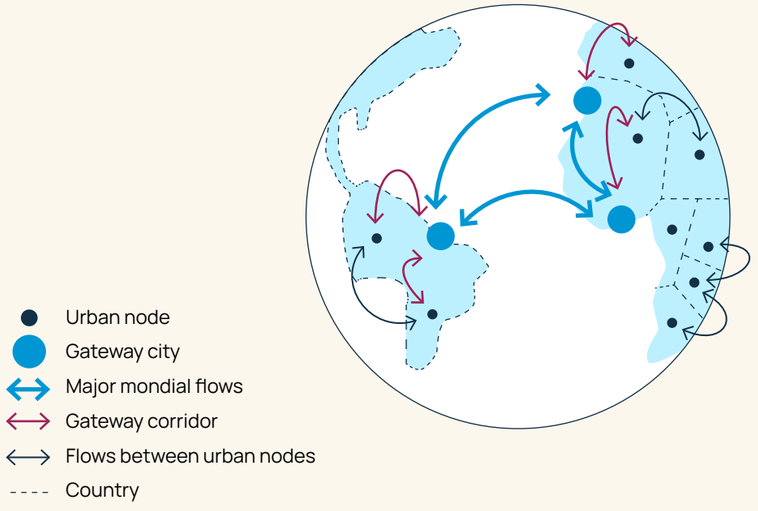
Most cities blend these roles rather than fitting neatly into one category.

Cities: nodes to coordinate these flows and create a supply chain

We can mention a concept we revisit in later chapters: the urban node. Urban nodes are cities or metropolitan areas that concentrate, exchange, and redistribute freight and supply chain flows. They connect local production and consumption systems with wider regional, national or international flows through transport infrastructure, logistics facilities and coordination services.

These nodes form a hierarchy based on their connectivity, the range of transport modes and services they accommodate, the volume and diversity of flows they handle, and the geographical extent of the markets they serve (Ng et al., 2018). Some nodes primarily organise local distribution, while others connect several corridors and supply chains across much larger territories. Within this hierarchy, gateway cities constitute a particularly strategic category of high-order urban nodes, as an urban node that connects a hinterland to external (national, regional or global) markets by concentrating the interfaces that make long-distance flows possible—typically a seaport or airport, major rail/road junctions, inland container depots/dry ports, customs and border services, and the logistics and business services that coordinate trade flows (Scholvin, Breul and Diez, 2019).

Figure 3 **Global supply chain**



How “gateway city” overlaps with transit, production and consumption cities

Gateway is best read as a connectivity role that can overlay any cities (A, B, C, D or E):

A, B

A consumption city can be a gateway when it concentrates import interfaces that feed great urban demand (food, fuel, building materials, manufactured goods). In such cases, the gateway function is expressed in inbound clearance, storage and redistribution.

C, D

Gateway cities are also frequently production cities. Many gateways sit next to (or embed) export-oriented production systems: agro-export regions, industrial clusters, food-processing hubs. Here, the gateway is not only passing goods through; it also organises outbound supply chains (packaging, consolidation, cold chain, compliance, export documentation) and can anchor value-added logistics and light processing activities.

E

A gateway city is above all a transit city, because gateway infrastructure (port/airport/dry port/logistics parks) channels large volumes that are passing through, rather than destined for local demand. The distinction is that a gateway emphasises the strategic interface to external networks and the concentration of switching/clearance functions.

In other words, the gateway function is less about where goods are produced or consumed, and more about the city’s role as an intermediary and switching point in wider networks, structuring corridor-based flows between “inside” (hinterland) and “outside” (global networks).

A city can be classified by its dominant flow balance (transit/production/consumption), while “gateway” flags whether the city also plays a corridor interface/node role that typically requires dedicated planning attention (node governance, land-use protection for logistics, bypassing strategies, and resilience planning).

Flows characterised by stakeholders' interaction

Cities generate two primary goods flow types:
B2B (business-to-business) and **B2C (business-to-consumer)**.

B2B involves supplying and shipping goods between a supplier or a logistics provider and a company or an administration. It represents a large share of total logistics operations in cities (80% in some cities; Dablanc, 2025). B2B generates many planned, regular flows with larger volumes, fewer delivery points, and pre-defined schedules, enabling better route optimisation and more structured operations in commercial zones or logistics centres.

B2C refers to direct sales to end consumers, while consumer-initiated returns generate C2B (consumer-to-business) flows. Compared with B2B, B2C typically involves smaller, more frequent individual orders and more delivery points, combining home delivery and pick-up points, and requiring high responsiveness (e.g., express services, time slots, and returns management). However, this does not automatically mean B2C flows are less optimised than B2B: large, integrated parcel carriers can achieve high operational efficiency through dense routing, standardised processes, and advanced consolidation, sometimes outperforming fragmented B2B supply chains. As B2C volumes rise, increased consolidation (e.g., line-haul to cross-dock facilities followed by optimised delivery tours) can reduce delivery fragmentation; consequently, delivery growth does not necessarily translate linearly into vehicle trips (Mejia, 2021).

Reverse logistics is a special case, since it can be a B2B or C2B flow. It focuses on recovering products returned by consumers or no longer usable (end-of-life products) to create value through recycling or remanufacturing. Unlike waste management, which handles unusable discards, reverse logistics prioritises recoverable value (Alnuwairan, M. & Zafar; S., 2019). A significant share of reverse flows in urban logistics consists of business-to-business return movements of reusable assets, such as pallets, crates, kegs, roll cages, or returnable bottles. These flows are not residual; they are organised logistics circuits designed to recover, inspect, clean, refill or redistribute containers for repeated use. Such return flows carry strong valorisation potential, as they reduce the need for single-use packaging, lower material consumption and support circular economy models. In this sense, container-based reverse logistics should be understood as an integral, economically structured component of urban logistics systems rather than a marginal or secondary flow.

Finally, **C2C** (consumer-to-consumer) flows involve the sale of goods between private individuals. They have emerged as an important category within urban logistics. They are generally included in the larger B2C category.

What is considered a logistics good?

Urban freight covers a wide range of goods flows with distinct operational requirements. The main categories include:

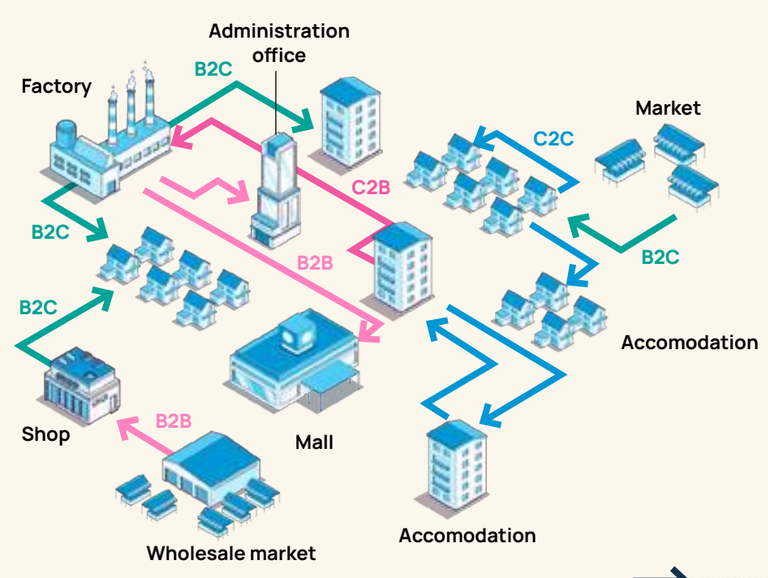
Industrial inputs and outputs such as minerals, components, equipment and supplies

Construction materials and related waste

Food and other perishables

Consumer goods, including clothing, health and beauty products, household items and appliances

Figure 4 **Types of shipper/receiver relationships in the urban area.**

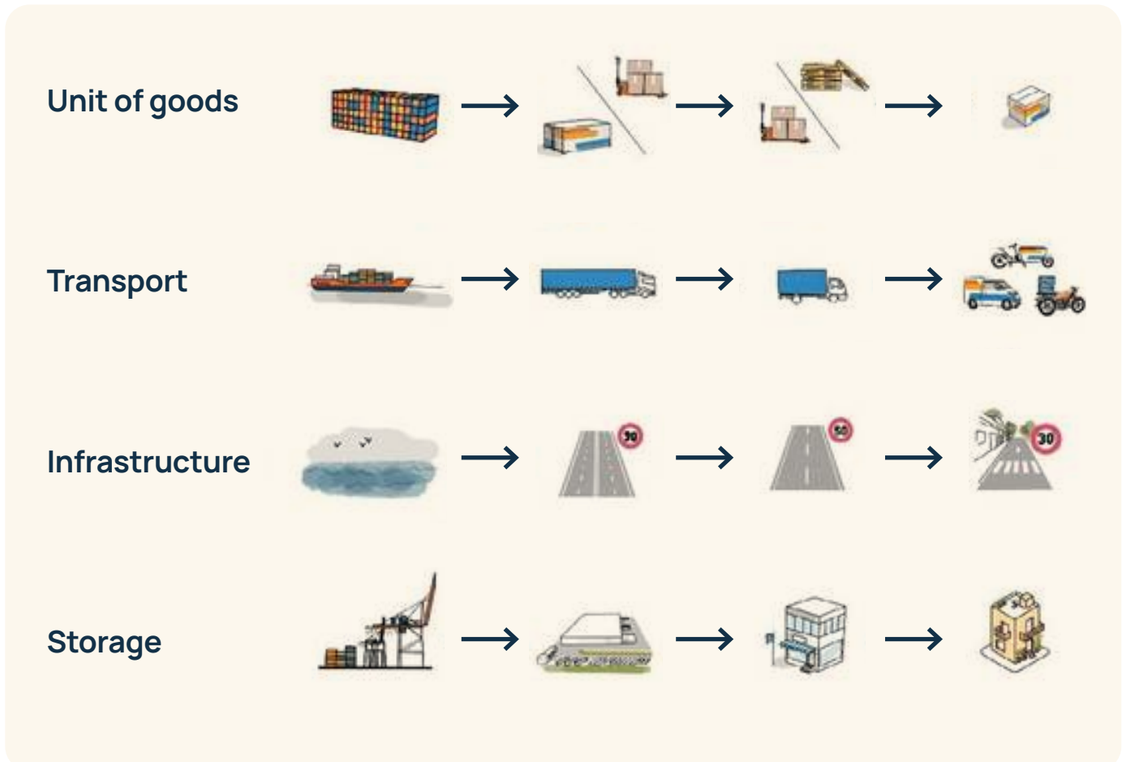


Urban infrastructures: storage, consolidation and distribution centres

The **supply chain** encompasses the entire flow management process from initial suppliers to the handover of the product to the end customer: it can be a simple direct purchase from the producer (i.e. market), or a far more complex process, with goods passing through multiple intermediaries. These flows move between logistics facilities of varying scales via diverse vehicles and operate within overlapping regulatory frameworks.

Beyond the performance of the various modes of transport used to move goods, supply chain efficiency depends largely on transhipment. operations at logistics hubs. These logistics hubs act as interfaces between different geographical scales. In the Global South, seaports and airports are often the largest logistics hubs, generating domestic and urban activities mainly via road transport or, in some cases, rail transport.

Figure 5 **Different scales for infrastructure, storage, transport and units of goods.**



Transhipment is defined as the activity of moving goods from one mode of transport to another.

Urban logistics forms part of the global supply chain whenever goods transit through an urban area or are destined for end users within cities. Urban logistics is inherently complex because it involves coordinating transit flows, dispatching activities, and deliveries to establishments and final consumers. However, urban logistics challenges stem from the shared use of transport infrastructure, especially limited road space, between freight and passenger transport.

Logistics infrastructure extends beyond logistics networks to enclosed (or open-air) spaces for concentrating, storing, and transforming goods, the operational backbone of the supply chain. Goods flow through multiple warehouse facilities, where they may be consolidated or deconsolidated, stored, picked, packaged, and distributed.

The following list comprises different types of traditional warehouses (Dablanc, 2023):

Storage warehouses

Storage warehouses provide physical spaces needed to build inventory, absorb fluctuations between supply and demand and prepare products for distribution. These concepts are generally grouped under the generic term 'storage'. Storage warehouses typically integrate material-handling equipment, inventory-management systems, and sometimes value-added services such as packaging or quality control. Some storage warehouses can be temperature-controlled for goods that must be kept at specific cold or controlled temperatures (frozen or fresh products).

Distribution centres

Beyond storage function, distribution centres (DCs) are nodes that help optimise flows of goods into and within metropolitan areas by supporting order preparation and coordination of last-mile deliveries. In other terms, distribution centres are used to receive goods in bulk, store them (often briefly), and redistribute them to other nodes (stores, smaller depots, other DCs) or sometimes directly to customers. They can be seen as "network hubs" focused on replenishment and downstream allocation. The DC is often a single-operator system.

Fulfilment centres

Fulfilment centres are a type of distribution centres, designed specifically to process customer orders (especially e-commerce): they focus on picking individual items, packing, labelling, sorting by parcel carrier, handling returns, and shipping business-to-consumer (B2C), and are operated by third-party logistics providers.

Storage warehouses, fulfilment centres, and distribution centres can cover very large surface areas, up to 200,000 m², or be built vertically in dense cities such as Tokyo, Seoul, or Singapore.

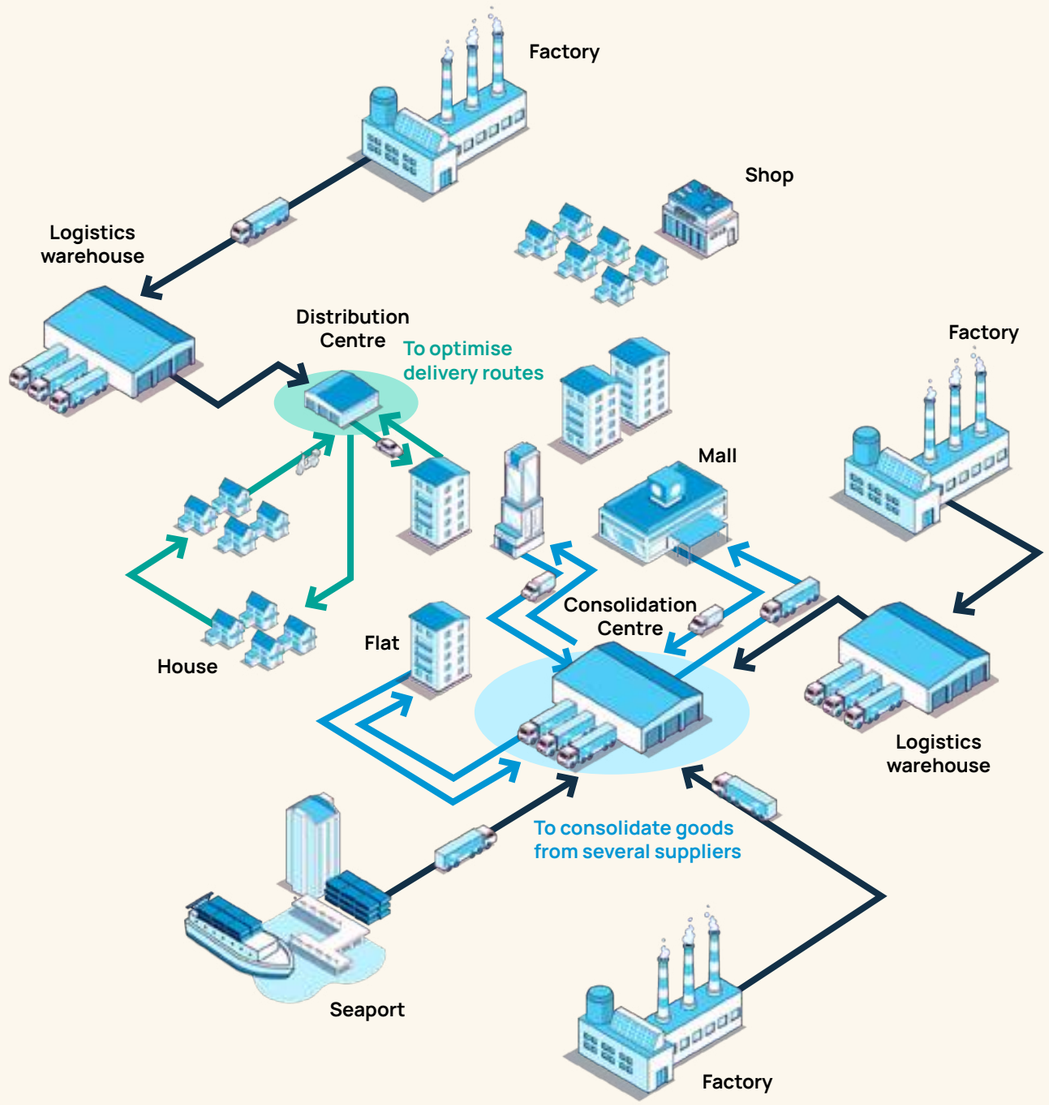
- **Cross-dock terminals** are facilities in which goods are not kept in storage but are processed and dispatched in under a day, typically within a few hours. The flows may involve parcels as well as larger handling units like pallets..
- **A logistics park** or **freight village** consists of multiple warehouses operated under a unified management structure, typically the site developer or property owner, who supplies complementary services such as security, meeting areas, and catering. Freight villages are a more advanced form, integrating infrastructure such as service stations, truck maintenance facilities, and multimodal transport options. Italian interporti offer rail–road intermodality, and German Güterverkehrszentren may additionally include inland waterway access.

Over time, the classical notion of a 'warehouse' has expanded to include diverse logistics infrastructures that differ in scale and function, are enhanced by sophisticated technological systems, and exhibit distinct architectural characteristics (Dablanc, 2025).

In response to increased demand and growing complexity, new types of warehouses, suited to the dense settings of cities, have emerged (Dablanc, 2023):

- **Logistics hotels.** They are large, vertically structured urban warehouses designed for mixed use. Logistics activities generally take place in the basement and on the lower floors, while the upper storeys accommodate office space, sports facilities, or commercial units. One notable case is the Chapelle International facility in Paris.
- **Urban Consolidation Centres** (UCC). These facilities combine deliveries from multiple carriers, allowing a single operator to run consolidated distribution rounds into city centres. Examples include Cityporto Padova or Binnenstad service in Dutch cities. Specialised UCCs, such as London's Construction Consolidation Centres, also group deliveries destined for building sites. The main purpose is to reduce vehicle-kilometres, congestion, and emissions, and these measures often align with policies such as low-emission zones and access restrictions.
- **Microhubs** are small urban logistics facilities - typically under 2,000 m² - used to prepare goods for last-mile delivery, often by cargo bikes or electric vans. They may serve a single operator or host several users who share the space but not the parcels. Unlike a UCC (as with Depot-bike in Prague), which typically serves a single operator, microhubs can host several distribution operators and tend to be smaller. These facilities are often located in repurposed shops, underground car parks, or former gas stations.
- **'Dark stores'** are small urban fulfilment centres designed for ultra-rapid grocery delivery ('quick commerce'). Their size varies significantly, from compact 100–200 m² units to larger facilities of around 2,000 m², depending on the retailer's assortment.
- **Click-and-collect points** are locations where customers can pick up online orders. These sites may or may not include storage or order-handling facilities. Recently, pedestrian-oriented click-and-collect points have been developed in central urban areas.

Figure 6 **Role of consolidation and distribution facilities.**



Urban logistics modes

In addition to the wide variety of transportation modes specific to informal logistics, “conventional” urban logistics can also rely on a wider range of transport modes.

Figure 7 **Different types of logistics modes**

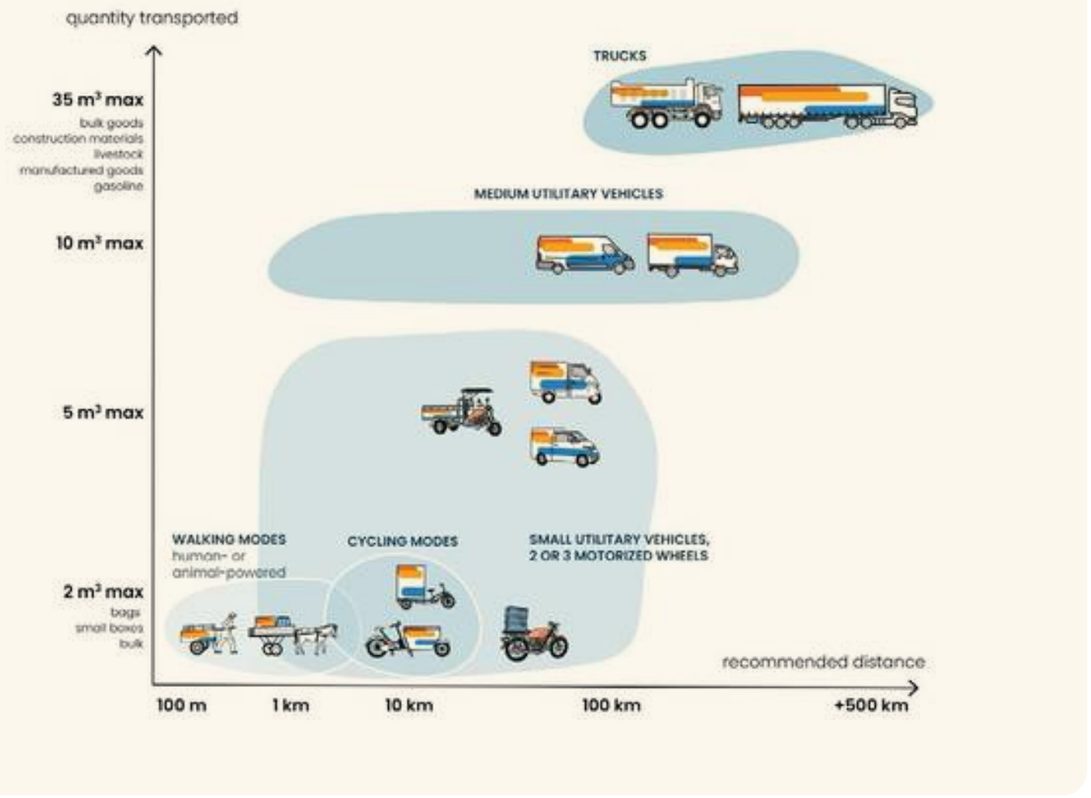


Transport modes are selected based on the urban fabric, travel distances, the volumes of goods moved, and each supply chain’s operational requirements. These can range from heavy goods vehicles supplying warehouses and major receivers to light commercial vehicles, cargo bikes, delivery tricycles, and even walking for specific last-mile operations. Vehicle size should therefore not be considered in isolation: larger vans and trucks can remain appropriate in dense urban areas where they enable higher load factors, consolidated deliveries and fewer vehicle movements, particularly when combined with cleaner, quieter vehicle technologies and appropriate access management. Selecting the right mode and vehicle size helps optimise both operational efficiency and urban space use.

Warehouses and logistics hubs can support this optimisation by enabling consolidation, transhipment, and adapting delivery patterns to local conditions. Freight may be consolidated over longer distances and then redistributed using smaller, more flexible modes where street design, access restrictions or delivery conditions require them. However, redistribution does not necessarily imply systematic downsizing: appropriately sized vans or trucks may also provide the most efficient solution in dense areas when shipment volumes and delivery patterns justify their use.

A core operational nuance is that similar end-demand can generate very different traffic outcomes depending on consolidation. Consolidation determines traffic impacts more than demand labels.

Figure 8 **Recommended distance according to quantity transported by logistics mode.**



Urban delivery fleets are gradually decarbonising, although progress varies significantly across markets and vehicle segments. Electric two- and three-wheelers and light commercial vehicles are generally advancing faster, while medium- and heavy-duty truck electrification remains at an earlier stage. Regulatory measures, corporate climate commitments, declining technology costs, and potential savings in vehicle operation and maintenance support the transition (IEA, 2025; World Bank, 2022). In Africa, uptake remains comparatively limited and uneven, reflecting high upfront costs, restricted access to finance, gaps in charging infrastructure, power-system constraints and the continued importance of imported second-hand vehicles. However, several countries are adopting increasingly ambitious policies. For example, Ethiopia prohibited the import of petrol- and diesel-powered vehicles in 2024 and launched a national e-mobility strategy for 2025–2030 covering fleet transition, charging infrastructure, market development, and local industrial capacity (IEA, 2026; UNECA, 2026). These developments indicate growing momentum, although their impact on freight and logistics fleets will depend on implementation capacity, vehicle affordability and the availability of charging solutions suited to commercial operations.

Overview of logistics in Global South cities

This section provides the diagnostic baseline needed before discussing policy: it explains how urban logistics typically operates in Global South cities and why it cannot be approached with a single template. It then details (i) the main trends and structural specificities, (ii) the stakeholder ecosystem, and (iii) the key challenges and opportunities—spatial constraints, public health and environmental impacts, data gaps, labour and skills dynamics, infrastructure weaknesses, and exposure to compound geopolitical and climate risks.

Key trends and specificities of urban logistics in urban areas in the Global South

Rapid demand growth and heterogeneous supply chains challenge one-size-fits-all policy

Urban logistics demand is projected to surge in Global South regions

Logistics activity has increased steadily over recent decades, driven by population growth, industrialisation, trade integration, and rising material consumption (SLOCAT, 2024). Looking ahead, projections indicate a further major expansion: global freight tonne-kilometres are expected to nearly double between 2020 and 2050, with growth concentrated in emerging regions. In particular, freight demand is projected to more than triple in Southeast Asia and Sub-Saharan Africa and rise even more sharply in South and South-West Asia, reflecting the combined effects of rapid economic growth, structural transformation, and expanding consumption in these regions (ITF, 2023).

Urbanisation compounds these pressures. The global urban population share is expected to rise from 55% to around 68% by 2050, with most additional urban population in Africa and Asia (UN DESA, 2018). For city authorities, the implication is straightforward: rising logistics demand is not marginal or temporary, but a predictable outcome of demographic and economic trajectories in regions where urban systems already face intense capacity and governance constraints.

More importantly, urban freight accounts for around six per cent of transport-related greenhouse gas (GHG) emissions worldwide (Humphreys & Dumitrescu, 2021). Given the sector's near-total reliance on fossil fuels and the projected surge in urban freight activity over the next 30 years, urban freight and logistics present a complex challenge for emissions reduction. In this context, progress will depend on implementing a coherent, locally tailored mix of policies and measures to support the sector's decarbonisation.

Metropolitan size shapes logistics activity, but urban-level evidence remains scarce

While national and global logistics trends are increasingly well documented, robust quantitative evidence at the scale of functional urban areas remains scarce in many Global South contexts. Routine mobility data systems often capture logistics weakly, while available datasets are fragmented across stakeholders and rarely standardised. Where evidence exists, freight activity tends to increase with metropolitan population and economic activity, reflecting the concentration of households, businesses and services that generate and attract goods movements (Holguín-Veras et al., 2017; Holguín-Veras & Kalahasthi, 2021).

In major metropolitan gateways, ports, airports, wholesale facilities, and regional distribution centres can further amplify volumes, as these cities handle not only locally generated demand but also transit and redistribution flows serving wider hinterlands. This makes simple population-based comparisons particularly difficult. The limited availability of comparable urban freight indicators therefore remains a major constraint for diagnostic work and benchmarking across cities.

Heterogeneous supply chains make one-size-fits-all measures unreliable

Urban logistics combines multiple supply chains with distinct operating constraints. B2B flows associated with retail replenishment, food distribution, construction, services and other commercial activities remain a major component of urban freight, while B2C and C2C deliveries are expanding rapidly through e-commerce and "Gig delivery" (platform-mediated delivery services performed by workers engaged and paid on a task-by-task basis, typically using their own vehicles and operating outside standard employment arrangements). Available evidence does not support a universal hierarchy between these segments. In parcel markets, B2C volumes can already substantially exceed B2B volumes, as observed in the Netherlands, while evidence from the United States suggests that household deliveries can account for around half of delivery and shipment events (ACM, 2019; Holguín-Veras et al., 2021). However, these shares should not be equated with freight traffic: parcel delivery rounds can consolidate multiple deliveries into a single vehicle trip, and parcels represent only one component of urban logistics (de Bok, Thoen and Eggers, 2022; Holguín-Veras et al., 2021). Comparable evidence remains particularly limited in developing-city contexts, despite rapid e-commerce growth (Mejia, 2021). Sectoral heterogeneity is therefore a defining feature: delivery frequency, time windows, shipment units, vehicle types and packaging vary sharply by sector, making one-size-fits-all restrictions unreliable.

Consolidation determines traffic impacts more than demand labels

Large integrated parcel carriers can sometimes consolidate B2C delivery routes more effectively than B2B supply chains because demand is more concentrated and dense (many online orders in the same area), whereas B2B demand can be fragmented across several locations spread across a city. This means that increased deliveries do not necessarily translate linearly into more vehicle trips (Mejia, 2021). Besides, senders need to reduce delivery costs to keep prices low and attractive. To this end, they optimise their deliveries extensively and consolidate their logistics flows. Indeed, information technology is adopted more readily than in sectors less open to change and innovation that still carry out many tasks manually, thereby missing opportunities to optimise processes, particularly their supply chains.

This reinforces the need to characterise urban logistics not only through B2B/B2C labels, but also through consolidation structures, delivery density, and the organisation of rounds, particularly in cities where small operators and own-account delivery remain significant (Holguín-Veras et al., 2021).

Traditional and modern food channels generate distinct flow profiles and planning needs

Urban freight demand in many Global South cities is strongly shaped by the urban food system and its deepening rural–urban interconnections: rural production supplies urban markets and supports rural incomes, while cities concentrate consumption, services and employment along the rural–urban continuum (IFAD, 2017). This interdependence raises questions about how freight systems can simultaneously support food security, economic inclusion and efficiency.

In practice, two food distribution channels often coexist within the same urban area, and they operate according

to distinct, not always compatible, logics. A traditional channel, centred on regionally sourced food, wholesale markets, wet/open-air markets, small independent shops and informal vendors, plays a critical role in affordability and access for low-income consumers, yet tends to generate frequent, highly fragmented and spatially dispersed delivery flows with recurrent delivery peaks, often relying on informal and poorly regulated logistics systems. This fragmentation is particularly visible at the retail level: in some contexts, a small neighbourhood shop or bodega may receive 20 to 30 supply vehicles per day directly from individual suppliers, whereas a supermarket in the same area may receive only one to four larger deliveries, with consolidation organised upstream through peripheral distribution centres.

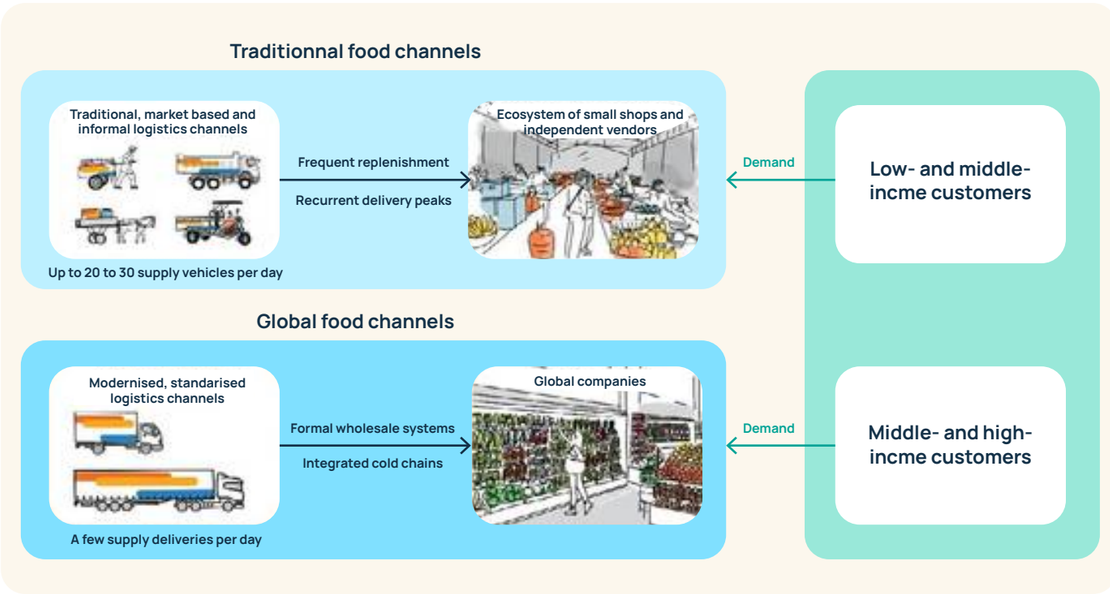
By contrast, a modern channel, driven by supermarkets and food-service supply chains, relies on more formal logistics, often including formal wholesale systems and, in some cases, integrated cold chains (Tefft et al., 2020). While this model can improve efficiency, traceability, and quality control, it may also marginalise smaller actors by consolidating flows and increasing the use of larger vehicles.

The coexistence of these channels therefore raises key planning dilemmas: how to accommodate fragmented, small-scale deliveries alongside more consolidated flows; how to regulate without excluding informal actors; and how to balance efficiency gains with equity and food accessibility concerns.



Market along streets in Cuzco (Peru)
Photo: Transitec

Figure 9 **Two food channels and their users**



The emergence of platform-driven, instant meal and grocery delivery introduces a third (and potentially disruptive) layer to urban food logistics systems

In many fast-growing metropolitan markets, particularly in parts of East Asia and the Middle East, platform-based "instant" meal and grocery delivery is increasingly visible alongside traditional and modern food distribution. Key examples include grocery delivery companies such as Grab, Talabat, Gojek, and Glovo. While often presented as a convenience-driven innovation, this model raises important questions about its broader impact on congestion levels, road safety, working conditions, environmental pollution and land use planning. Operationally, it tends to increase delivery frequency and favour very small drops, often relying on motorised two-wheelers and short-cycle replenishment from dark stores, micro-fulfilment points or retail outlets. Even where this segment remains concentrated in specific neighbourhoods and income groups, it can intensify curbside pressure, competition for limited retail and warehouse space and exposure to peak-hour traffic in dense areas. Therefore, treat instant grocery delivery as a distinct food logistics segment when diagnosing last-mile trends (World Economic Forum, 2024; UNCTAD, 2024).

For urban planning, this coexistence matters because it produces distinct flow profiles in shipment size, delivery frequency and spatial patterns, and strategies focusing primarily on parcels risk overlooking a core demand driver: food supply chains should be explicitly identified and protected, including flows serving markets and low-income consumers, given their central role in affordability and access (IFAD, 2017; Tefft et al., 2020; Mejia, 2021).

Platforms and e-commerce accelerate demand for high-frequency, time-sensitive deliveries, accentuating land use and traffic challenges in cities

E-commerce has become a major driver of change in urban logistics, increasing the volume of small parcels and consignments, consolidating them into denser, optimised delivery rounds, and raising expectations for fast, time-sensitive service and convenience. Globally, online shopping has expanded rapidly since 2010 and accelerated during the COVID-19 period, while uptake remains uneven across countries and income groups (UNCTAD, 2024). In least developed countries, online purchasing remains low in absolute terms. However, growth rates have been high, indicating substantial potential for further expansion, typically starting in the largest metropolitan areas before spreading to secondary cities (UNCTAD, 2024).

A key demand implication is the shift towards higher delivery frequency and smaller drops, including same-day and instant delivery models in dense urban areas. These developments raise several critical issues for urban systems: the multiplication of delivery trips may offset gains from route optimisation; increased time pressure and the focus on speed can exacerbate the risk of road accidents (globally, a deterioration in working conditions for deliverers). This suggests a need to critically assess whether current platform-driven logistics models are compatible with broader urban sustainability and equity objectives. Logistics models should, where possible, rely on pick-up points, lockers, or distribution hubs with bike logistics in dense areas.

Economic diversification reshapes product mix

Beyond e-commerce, rapid economic diversification is also reshaping the composition of urban logistics demand in the Global South. As cities become more deeply embedded in regional and global supply chains, they handle a wider range of goods categories, higher levels of product differentiation, and more complex replenishment patterns. This diversification is linked to differentiated replenishment patterns, reinforcing the need to analyse urban logistics by supply chain segment rather than through "average" indicators (UNCTADstat, 2024/2025; SLOCAT, 2024).

Implications for city-level diagnosis and planning

For policy and planning, the implication is that "average" indicators can be misleading: the same city may face both high-frequency replenishment linked to traditional commerce and fast-growing parcelled flows linked to digital consumption. A robust overview therefore requires distinguishing key distribution channels and consolidation structures, rather than assuming a uniform logistics system or a single dominant last-mile profile (IFAD, 2017; Mejia, 2021).

Regional differences: *divergence patterns across city size, market structure and connectivity*

Regional differences in urban logistics are not only geographic; city size and function increasingly shape them. Across all regions, large metropolitan areas are converging in some consumption and service patterns. However, the divergence between mega-cities and secondary cities remains a stronger explanatory factor, and it plays out differently across Africa, Asia and Latin America and the Caribbean (LAC).

The mega-city / secondary-city gap varies across regions

In Africa, the gap between the largest metropolitan areas and secondary cities is often particularly pronounced. A small number of dominant cities concentrate formal retail growth, platform-enabled delivery services, and international logistics providers. In contrast, many secondary cities have thinner markets, lower consolidation potential, and rely more on fragmented, own-account distribution (i.e., you have your own trucks or vans, often second-hand, and organise your own logistics instead of paying intermediaries). These structural differences produce markedly different delivery patterns and service organisation. In practice, they also often coincide with limited data availability and weaker institutional and regulatory capacity at the municipal level in smaller urban markets.

Asia shows the same mega-city dynamics. However, the regional urban system typically includes more high-population secondary cities, which can sustain more developed logistics markets and organised distribution beyond the capital region. As a result, "secondary city" does not necessarily imply smaller market sizes: several non-capital metropolitan areas can support platform delivery models, warehousing and third-party logistics services at scale. This tends to smooth the mega/secondary gradient relative to Africa, even though intra-urban constraints - congestion, curb pressure, and high-frequency delivery - remain acute in the largest cities.

In LAC, large metropolitan areas concentrate demand, logistics infrastructure and formal operators, but secondary cities can still represent sizeable consumer markets. They may display partial consolidation, especially where they are embedded in national distribution networks and connected to major corridors. The mega/secondary city gap is still evident but may be less distinctive than in other regions.

Market structure and integration into supply chains drive persistent divergences

Beyond city size, regional and city-type differences are strongly influenced by (i) the formal/informal mix and the structure of retail and distribution, and (ii) the degree of integration into regional and global supply chains. Where modern retail and structured distribution exist, delivery rounds tend to be more predictable and consolidated; where traditional retail and fragmented supply chains dominate, frequent small-drop replenishment and flexible operator ecosystems remain central (Mejia, 2021). In gateway cities, these dynamics are compounded by corridor and port/airport interfaces, which shape where and how freight enters the urban area (see section 3.1.6).

E-commerce and delivery intensity: visible across regions, uneven beyond the largest cities

Across regions, e-commerce and platforms (Amazon, Alibaba, Rakuten, any website that acts as a marketplace) are increasing the visibility of last-mile logistics and shifting parts of demand towards higher-frequency, time-sensitive deliveries. In LAC, e-commerce transactions reached USD 509 billion in 2023 compared with USD 176 billion in 2019 (the COVID-19 pandemic that pushed daily activities toward remote work, telehealth, and remote learning has probably accelerated the phenomenon), strengthening last-mile delivery activity - often via motorcycles and vans - and increasing pressure on urban transport systems (UNCTAD, 2024). In Asia, platform-enabled delivery is also expanding rapidly in dense urban areas, including beyond capital cities in several countries, reinforcing the importance of segmenting urban freight by delivery channel (construction, food, manufactured goods, commodities, waste, etc.) rather than relying on "average" indicators (UNCTAD, 2024).

Asia-specific connectivity: inland waterways and domestic shipping as structural complements

In parts of Asia, inland waterways and domestic shipping continue to play a structural role in national and regional logistics systems. For example, Phnom Penh's supply chains depend on a limited set of domestic and cross-border corridors linking the capital to Cambodia's main seaport gateway, notably the Phnom Penh–Sihanoukville axis (Hoa, 2023). Beyond the national gateway, Cambodia's container services are largely feeder-based, meaning international connectivity for Phnom Penh-bound imports often relies on regional transhipment hubs to access mainline routes (Port Strategy, 2023). In practice, this creates a two-step dependence: first on corridor performance to reach the port interface, and second on the reliability and capacity of hub-and-spoke maritime networks—within which Singapore plays a prominent transhipment role in Southeast Asia (MPA Singapore, 2023). There are many examples: Kathmandu (Nepal), which relies on Kolkata–Haldia (India) for access to the sea; Vientiane (Laos), which relies on Laem Chabang/Bangkok (Thailand); and Ulaanbaatar (Mongolia), which relies on Tianjin (China)

While these modes do not typically replace road vehicles for last-mile distribution, they shape urban logistics through terminals, river ports, and corridor-to-city interfaces, influencing the conditions under which freight enters large urban markets. Where modal-shift policies and investments are pursued, waterways can remain a meaningful complement to road and rail for feeding major urban areas, even as trucks, vans and two-wheelers continue to dominate intra-urban operations.

Logistics Performance Index: gaps and opportunities

Cross-country evidence suggests that logistics performance is correlated with levels of economic development but not solely determined by them: the wide dispersion of World Bank Logistics Performance Index (LPI) scores among countries with similar GDP per capita indicates that some countries "overperform" while others "underperform", pointing to policy and institutional factors beyond income effects (Arvis et al., 2023; Mareï and Savy, 2020). Produced by the World Bank and released periodically (roughly every 2–4 years, with the latest international LPI in 2023), the index provides comparable coverage across 139 countries (Arvis et al., 2023; World Bank, 2023).

LPI is a weighted composite of six survey-based components: customs/border clearance efficiency, trade and transport infrastructure quality, ease of arranging competitively priced shipments, logistics services competence/quality, tracking and tracing, and timeliness (World Bank, 2023). While the LPI is not designed as an urban-level tool, it nevertheless provides a useful benchmark to contextualise capability gaps across countries (Arvis et al., 2023).

Informal logistics as a core delivery system that is under-governed and unevenly regulated

Informal logistics is a structural component of urban delivery systems

Informal logistics has long been part of urban life in Global South cities. Informal logistics has not emerged solely as a recent response to rising logistics demand. Rather, it has persisted because it continues to meet essential economic and social needs, often more effectively than formal logistics systems in dense, low-income and highly constrained urban environments. Its resilience lies in its flexibility, low operating costs, and strong capacity to adapt to local demand (Debrie & Mareï, 2019; Mareï et al., 2019; Mareï & Savy, 2021). However, this same resilience raises a key tension: the features that make informal logistics efficient at the micro level often sit uneasily with broader urban objectives related to safety, environmental performance, and governance. Treating informality as a temporary anomaly to be eliminated risks misdiagnosing how urban logistics actually function and where public leverage realistically sits.

Fragmentation and low entry barriers enable responsiveness, but weaken compliance and renewal

This resilience stems from a set of structural characteristics. Informal logistics is typically highly atomised, with fragmented ownership structures, limited oversight and low barriers to entry. Small operators can enter the market with modest capital and simple equipment. In some cases, logistics is also handled on an own-account basis, with street vendors and small shops organising transport and deliveries themselves. This keeps the sector highly responsive and territorially embedded, but it also fuels intense price competition that tends to push prices downward and limits investment capacity. Much of the sector's cost advantage stems from limited compliance with standards, including vehicle requirements, safety rules, labour protection, working time constraints and operational controls (Marei & Savy, 2020). This reduces operating costs but also contributes to uneven service quality, illegal hiring practices, poor working conditions and safety risks, ageing fleets, and negative environmental externalities. From a planning perspective, this also contributes to systematic under-recording in administrative datasets and complicates public authorities' ability to build robust urban logistics baselines and design evidence-based interventions (Holguín-Veras et al., 2021; Mejia, 2021).

Reversible use of small vehicles strengthens livelihoods and blurs passenger–freight boundaries

Part of this adaptability also comes from the reversible use of some modes. This applies mainly to small- and medium-capacity vehicles with relatively low investment costs. The same operator may carry passengers during peak hours and switch to goods delivery during off-peak periods to avoid sitting idle. This flexibility helps secure additional income and improves asset utilisation. However, it also blurs regulatory categories and complicates the application of sector-specific policies, as vehicles and operators move between passengers and freight functions. This flexibility applies less to larger freight vehicles, which are more specialised (Expert interviews, 2026; Amedokpo & Mawussi, 2026). The operational implication is that parts of the "freight fleet" cannot be understood in isolation from the paratransit system.

Informal operators remain central to traditional retail and low-cost replenishment systems

These characteristics help explain why informal logistics remains central to traditional retail and, more broadly, to urban economic systems in Global South cities. Traditional retail and nanostores (small, neighbourhood retail outlets—typically independent, family-run shops—that sell mainly everyday fast-moving consumer goods to local customers) depend on frequent, flexible, and low-cost replenishment. Because nanostores are usually independently owned (not part of a retail group), many of their deliveries come from direct relationships with suppliers. Informal operators can serve these stores through repeated small-volume specialised deliveries and close territorial coverage. More formal operators, whose supply chains are organised at the group level, can also organise frequent deliveries, but often not at the same price

level. Their higher compliance costs make them less suited to the low-margin, high-frequency logic of many traditional retail networks. This creates a structural segmentation of the logistics market, where affordability and accessibility are sustained by systems that operate partly outside formal regulatory frameworks. Informal logistics therefore sustains systems based on proximity, low inventories, rapid stock turnover, small-quantity sales, and informal credit for low-income households (Marei & Savy, 2020), but in doing so also entrenches dependence on low-productivity, weakly regulated distribution models.

Informal logistics as a major source of urban jobs

Urban logistics plays an important role in employment. It accounts for a substantial share of employment in large urban regions, with estimates ranging from 5 to 10% of total jobs. In developing city contexts, the contribution is likely higher when temporary and precarious work is included (Mejia, 2021). Informal logistics also provides income opportunities for workers with limited qualifications or weak access to formal employment (Mejia, 2021). This creates a critical policy trade-off: while the sector supports livelihoods at scale, it is also often associated with precarious working conditions, limited social protection, and low income stability. This employment function is one reason the sector remains deeply embedded in many urban economies, making reform politically and socially sensitive.

Informal logistics adapts to digitalisation rather than being displaced by it

Informal logistics is also evolving. In some contexts, digitalisation is not displacing traditional systems; they are absorbing it. In Mumbai, for example, the dabbawallas (Mumbai's lunchbox delivery workers who collect, sort, and deliver home-cooked meals from households to office workers) increasingly use phone messaging and other digital tools to coordinate flows between households, delivery workers and receivers. This illustrates a broader point: informal logistics is not static. It can incorporate selected innovations while preserving the low-cost and flexible structures that underpin its competitiveness.

Dualization dynamics reshape competition between informal and formal logistics systems

This adaptability helps explain why informal logistics continues to coexist with, and increasingly compete against, more formal, standardised, and often internationalised logistics systems. This dynamic has been described as logistics dualization (Debrie & Mareï, 2019; Mareï et al., 2019; Mareï & Savy, 2021). Structured supply chains are characterised by stronger compliance requirements, higher capital intensity, and more standardised procedures. On the other hand, fragmented and informal systems rely on lower entry costs, greater flexibility, and lower operating costs, partly because they comply less with technical, social, and environmental standards (Mareï & Savy, 2020). These are not separate worlds. They overlap, interact, and may compete in the same urban markets, while serving different customer segments within the

same city across developing countries. As economies integrate into regional and global supply chains, segments responding to higher service and compliance requirements may expand. However, they typically grow alongside, rather than fully replacing, existing informal delivery ecosystems (Mareï & Savy, 2021).

Integrating informal logistics into policy and planning

This coexistence creates a major challenge for public policy. Informal logistics is hard to regulate and hard to plan for. It is fragmented, only partially visible in data, and often organised through small-scale, shifting arrangements. However, it persists because it performs functions that many cities still depend on for affordability, accessibility, employment and adaptability. The challenge, therefore, is not to assume it will disappear, but to plan for its continued presence. Urban logistics policy needs to recognise its role, reduce its negative impacts, and improve its safety, working conditions and environmental performance within a more coherent planning and regulatory framework.

Link between informal logistics and paratransit

Many parallels can be drawn in the policy approaches to integrating informal passenger transport into paratransit systems. If you'd like to find out more about paratransit, we recommend reading the Mobilyse your City paratransit toolkit available online (4 documents, open data)

Data blind spots and growing operational complexity in urban logistics

Urban logistics planning still operates with a logistics data blind spot

Urban logistics planning in many Global South cities still faces a structural data blind spot. Compared with passenger mobility, cities typically devote far fewer resources to collecting logistics data (delivery and pick-up patterns, loading activity, vehicle operations, and associated emissions), resulting in a partial or fragmented understanding of the system (Mejia, 2021). This limited evidence base constrains effective diagnosis, weakens target-setting and monitoring, and ultimately undermines the credibility of policy choices.

These challenges are heightened by four structural factors:

Data collection & analysis challenges

Logistics movements are intrinsically harder to measure than passenger flows; a vehicle trip is not a sufficient unit of analysis, as a single movement may include multiple deliveries, stops and shipments. Robust diagnosis therefore requires logistics-oriented indicators (deliveries, shipments, stops, rounds), which many city data systems are not designed to capture (Mejia, 2021).

Stakeholder and data fragmentation

Data is fragmented across multiple actors, carriers, logistics service providers, retailers, platforms, infrastructure managers and public authorities. Building a robust picture of urban logistics therefore requires combining information from several sources. Aggregating, processing and analysing multiple datasets renders the process complex from the outset. Access to these data sources can also be difficult. Private actors may be reluctant to share operational data because it can reveal commercially sensitive information, such as routing strategies, customer structures, service patterns, costs, prices, margins or broader business models. In competitive markets, this creates clear disincentives to disclose data, especially when the purpose, safeguards, and expected benefits of data sharing are not clearly defined (ICLEI, n.d.; MobiliseYourCity, n.d.; expert interviews, 2026).

Data harmonisation and interoperability

Even when data is available, it is not always standardised. Sources may differ in format, definitions, spatial scale, time horizon or level of aggregation. This makes it difficult to consolidate datasets, compare results or produce consistent indicators across operators and territories. In practice, the issue is therefore not only access to data, but also its interoperability and comparability.

Digitalisation and formality levels

Visibility is uneven across market segments. Large fleets often have GPS and telematics systems, but smaller operators generally do not (expert interviews, 2026). In many Global South contexts, even relatively large operators may remain weakly digitised, especially in informal or semi-formal segments. This creates a structural visibility bias. The operators easiest to measure are often the most formalised and consolidated, not necessarily those that dominate the full logistics ecosystem. Digital tools may therefore improve visibility for some market segments while leaving others largely outside the data landscape, creating a structural measurement bias.

Finally, the measurement gap is widening as urban logistics becomes more complex. Growth in parcelised flows and platform-enabled delivery, combined with changing consumer expectations for speed and convenience, increases delivery frequency and diversifies vehicle types and operating practices. Legacy tools and proxy models can remain useful, but in several contexts, they do not fully capture the expanding weight of B2C deliveries and e-commerce-related flows (expert interviews, 2026). Together, these dynamics make logistics a persistent blind spot in urban mobility systems precisely when it is becoming more operationally and politically salient.

Institutional capacity constraints limit the translation of data into decisions

Institutional and analytical capacity is another central issue, on both the public and private sides. Public authorities may lack trained staff, dedicated logistics teams, analytical expertise or clear internal ownership of the topic. This limits not only data collection but also the ability to define relevant indicators, assess data quality, and translate findings into policy or operational measures (Mejia, 2021; expert interviews, 2026). On the private side, the constraint is different but equally important. Some operators hold large amounts of operational data, but do not necessarily have the internal capacity to structure, process or interpret it for strategic purposes. This partly explains the emergence of new specialised actors offering data processing, modelling and decision-support services. Logistics data is increasingly becoming a field of expertise in its own right, rather than a simple by-product of operations.

Unclear planning approach

Lack of Recognition in Urban Planning and Fragmented Measures

In many Global South cities, urban logistics remains addressed through an unclear, structurally marginalised planning approach: planners do not consistently recognise it as a core urban function. As a result, mainstream mobility planning, land-use regulation, and climate strategies embed it weakly. This institutional invisibility creates a foundational gap: urban functioning treats an essential part of the system as secondary or residual. As a result, public action often relies on fragmented measures, typically ad hoc traffic restrictions, isolated pilots, or enforcement-driven responses, that address symptoms (e.g., congestion or curbside conflicts) rather than underlying logistics dynamics. These interventions often lack a shared diagnosis of freight demand, critical nodes (markets, warehouses, gateways), and last-mile operational requirements, including essential supply chains such as food distribution (Mejia, 2021; Tefft et al., 2020; Expert interviews, 2026). This limits policy coherence and reduces the cumulative impact of interventions over time.

Weak Governance and Accountability Structures

Field evidence points to governance arrangements that further blur accountability: some cities lack a clearly mandated authority for urban logistics or operate under highly centralised decision-making where responsibilities sit outside the municipal level (e.g. Bangkok; Ho Chi Minh City), creating a disconnect between where problems are experienced and where decisions are made, limiting the ability to translate local constraints into implementable measures (Expert interviews, 2026).

In more fragile institutional contexts, urban logistics may be nearly absent from formal policy: Nouakchott has no national logistics policy, no dedicated studies, and only marginal treatment in the urban mobility plan, despite strong import dependence for consumption goods (Expert interviews, 2026). This absence is not neutral: it reflects competing priorities, capacity constraints and the political marginality of freight issues within policy agendas. Even where planning capacity and logistics markets are comparatively developed (e.g., Thailand), bottlenecks can remain predominantly institutional, regulatory complexity, trade-facilitation frictions, and uneven incentives, suggesting that “more planning” is not sufficient if mandates, rules, and implementation pathways are not aligned (Expert interviews, 2026). Technical capacity alone does not guarantee effective governance. Some cities also rely heavily on external expertise (e.g., foreign consultants for road network planning in the UAE), which can strengthen technical design yet still leave ownership limited and continuity between plans and delivery weak (Expert interviews, 2026).

Mismatch Between Logistics Needs and Urban Planning

These governance and capacity gaps are amplified by data scarcity and contested political economy. Evidence from Brazil shows that public managers may avoid logistics measures perceived as unpopular, particularly where carriers and retailers are politically influential. At the same time, key end-consumers and users are often under-involved despite being directly impacted by policy choices (Oliveira et al., 2018). In fast-growing African cities, weakly integrated planning shows up in urban form: rapid sprawl and informal expansion increase distances between gateway infrastructure, production areas, and markets, misaligning freight flows with the city’s spatial structure and intensifying congestion and safety risks (Kiribou et al., 2026).

Over time, this creates a persistent mismatch between logistics needs and urban space allocation: insufficient loading/unloading capacity, poorly positioned logistics facilities, unmanaged access to markets, competition between retail and industrial land use, and unreliable corridor-to-city interfaces. This reflects not only a planning gap but a deeper failure to integrate freight into urban space production. The result is higher delivery costs and externalities, with disproportionate impacts on low-income households and essential supply chains (Tefft et al., 2020; Kiribou et al., 2026).

Connecting global and local supply chains: the role of cities as urban nodes and gateways

An urban node is a place where freight flows converge, are handled, and are redistributed. Nodes concentrate functions such as consolidation and deconsolidation, warehousing, wholesaling, cross-docking, and last-mile delivery organisation. Certain cities become urban nodes because they combine three structural factors: demand concentration (large consumer and service markets), network accessibility (road and often rail connections that enable regional distribution), and economic agglomeration (clusters of trade, industry, and services that generate and attract freight). Logistics activities therefore seek urban and peri-urban locations that offer both connectivity and sufficient land for handling operations.

Gateways as Key Interfaces in logistics Systems

As mentioned in 2.1, a gateway is a specific type of urban node positioned at the interface between international and domestic/regional logistics systems. It is typically anchored by a seaport and/or airport, where flows shift between global transport chains and inland distribution networks, often with an intermodal function (e.g., maritime to road/rail; air to road).

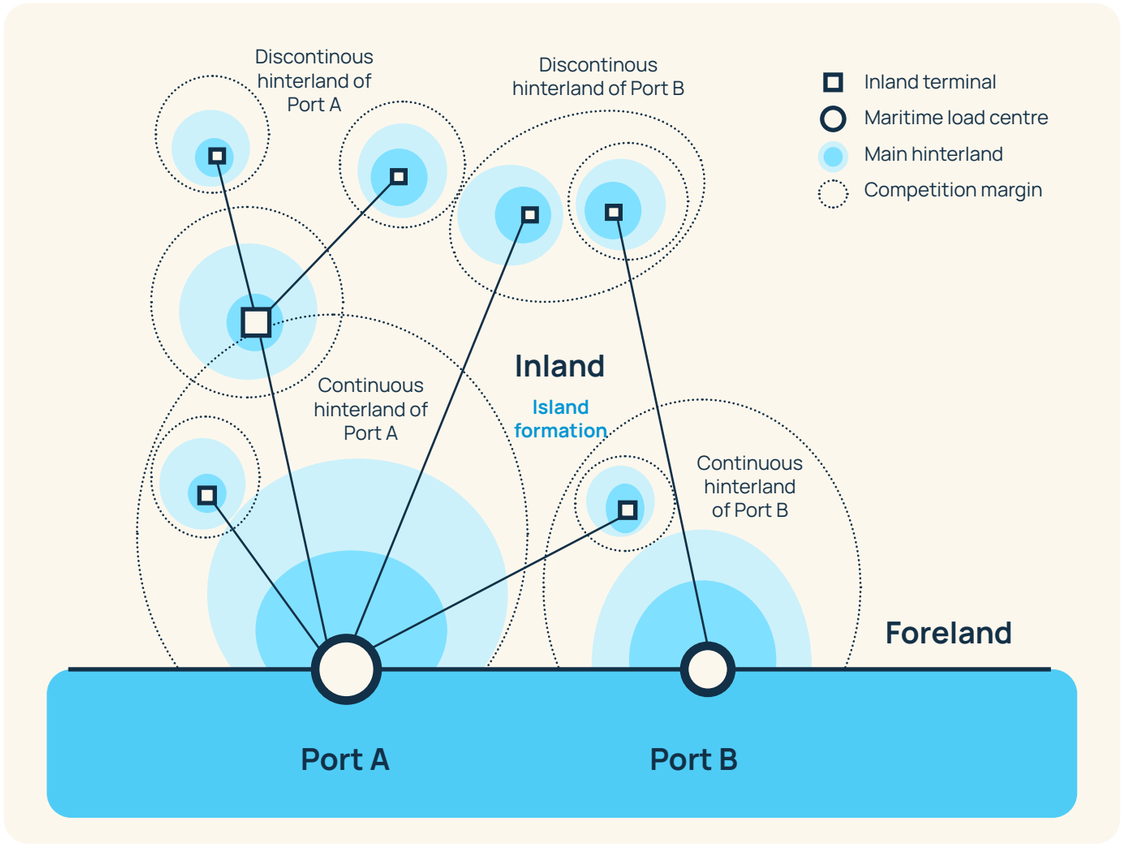
Gateway performance depends on its ability to connect the foreland (the overseas countries and markets served through regular maritime or air services) and the hinterland (the inland catchment area served via continental networks and corridors, its domestic and regional market area). Operationally, gateways combine infrastructure with regulatory and commercial processes (customs, security, documentation, cargo release). The main issues are reliability and cost: dwell time in terminals, congestion on access routes, and the quality of onward corridor connectivity directly influence logistics performance.



Port of Stone Town (Zanzibar - Tanzania), a gateway for Unguja and Pemba islands
Photo: Transitec

Gateway cities are strategic because they often host the primary interface with global trade, making them critical to national supply security and export competitiveness. Their importance can extend beyond the host city when the gateway serves a wider regional hinterland, as is the case with the port of Mombasa (Kenya) or the port of Abidjan (Ivory Coast). This is especially true for landlocked countries, which depend on corridors through neighbouring states to reach a maritime foreland, increasing their exposure to access regimes, fees, and border-related frictions. In such configurations, gateway governance becomes a regional development issue, not only a local port management matter. Landlocked countries can also rely on dry ports located in key cities to relay freight to other parts of the country. For example, Modjo Dry Port in Ethiopia (73km from the capital) serves as the main inland clearance and distribution hub for Addis Ababa and the wider national market. Another inland urban hub example is the Kigali Logistics Platform, which was developed to improve consolidation and distribution of goods in Rwanda's capital and beyond.

Figure 10 **Port as gateway infrastructure among supply chain.**



Source: Notteboom, T. Pallis, A. and Rodrigue, J.-P. (2026). Port Economics, Management and Policy. Routledge.

Nodality vs. polarity: why gateway success does not automatically translate into territorial benefits

The Moroccan industrial port complex, Tanger-Med, offers a useful example of a recurring challenge for gateway cities in the Global South. A gateway city may perform successfully as a **network node** while remaining weak as a **territorial pole. Hyperconnectivity, high transit volumes, and insertion into global logistics and production networks characterise nodality**. This concept differs from **polarity**, which refers to territorial development dynamics based on proximity, local accumulation, and productive integration with surrounding areas. Gateway expansion can undermine territorial polarity when the gateway is designed and governed primarily as a network interface, with standards, operational priorities, and decision centres aligned to external value chains rather than local economic embedding (Mareï & Piveteau, 2022).

In practical terms, this helps explain why gateway development can produce **asymmetric outcomes**. The gateway may deliver strong gains in international accessibility and logistics performance, while the host city and adjacent territories experience rising externalities (truck traffic, land-use conflicts, congestion, road deterioration, and emissions) and capture only a limited share of added value.

At the Tanger-Med port complex, logistics and industrial activities operate in semi-enclosed, standardised spaces, "territories of the norm", that coexist with "territories of everyday life", which remain weakly connected to the new logistics-industrial system (Mareï & Piveteau, 2022).

This spatial and functional separation can translate into uneven access to employment and local upgrading: the free-zone system is described as semi-enclosed, with restricted and controlled access, while job creation does not necessarily benefit nearby Rif communities, and wider socio-educational constraints can limit local employability—even for basic indirect jobs (Mareï & Piveteau, 2022). More broadly, logistics performance is closely linked to the availability of human power at the required skill level (Mareï & Savy, 2020).

At the same time, negative externalities tend to spill over beyond the "territories of the norm". Heavy vehicle traffic to and from the port can intensify congestion on connecting corridors, increase road safety risks, and concentrate air and noise pollution in adjacent neighbourhoods—often those with the least capacity to mitigate exposure (Mareï & Piveteau, 2022). Land and real-estate dynamics may also become distorted: large-scale logistics platforms can raise land values and redirect public investment towards strategic access infrastructure, while everyday mobility needs and local services in surrounding areas remain under-served, reinforcing a perception of "enclave" development (Mareï & Piveteau, 2022). Finally, governance and accountability can become fragmented when the port complex operates under dedicated regimes and operational logics, making it harder for local communities and municipalities to influence decisions on traffic management, environmental performance, or compensation measures (Mareï & Piveteau, 2022).

For urban logistics and mobility planning, the nodality–polarity distinction reframes the policy objective. The question is not only how to optimise gateway throughput, but how to **strengthen territorial linkages** between the gateway, the metropolitan logistics system, and the hinterland, so that gateway performance does not rely on exporting costs to the city while limiting local benefits.



Container storage at the port of Dar Es Salaam (Tanzania)
Photo: Transitec

A planning challenge beyond the port perimeter

The main challenge is that urban mobility planning rarely integrates gateway functions. Freight traffic generated by ports often crosses dense urban areas, while storage, transhipment, and wholesale functions progressively relocate to peripheral logistics zones. This spatial decoupling creates longer and more complex freight movements, increasing reliance on road transport and intensifying pressure on already congested urban corridors. Trucks are stuck in city traffic and waste time. In Bangkok, for example, a truck can take an entire day to reach the port and another day to get from the port to the warehouse (Expert interviews, 2026).

The port, the city, and the wider regional supply chain remain operationally connected but institutionally disconnected. This disconnect reflects a deeper governance gap, where responsibilities for infrastructure, land use, and freight regulation are fragmented across agencies and scales. As a result, cities often bear the external costs of freight movements without having sufficient leverage over how logistics systems are organised, or the ability to capture the economic value they help enable.

The nodality–polarity lens suggests that this fragmentation is not only an operational issue; it is also a **governance and territorial development issue**. When gateway investments are planned primarily as national competitiveness assets (nodality), the local level may lack the mandates, tools, and funding to manage freight corridors, regulate urban interfaces, or plan and service logistics land in ways that protect liveability and enable local economic participation (polarity) (Mareï & Piveteau, 2022). This creates a structural imbalance in which global connectivity is prioritised. At the same time, local integration is under-managed, potentially leading to spatial inequalities, inefficient land use, and growing tensions between economic performance and urban quality of life.

Decarbonizing Urban logistics: A Sequenced and Context-Specific Approach

3.1.7.1 Global South megacities have increasingly adopted low-emission road passenger transport policies, yet progress has often been slow. Meanwhile, the literature has yet to examine policy interactions in Global South sustainability transitions (Khatoon, 2025), particularly in the freight sector, which remains less visible than passenger mobility.

Why "logistics decarbonisation" is more than a fleet renewal

In Global South cities, vehicle decarbonisation for urban logistics cannot be reduced to simply replacing internal combustion engines with electric ones. It is a transition challenge shaped by rapidly growing delivery demand, road-dominated logistics systems, fragmented and informal operator markets, and constrained public budgets. This means that technological change alone will not deliver systemic decarbonisation. Parallel shifts in logistics organisation, infrastructure provision and regulatory frameworks are also needed.

While electrification can deliver immediate, highly visible co-benefits, most notably improved local air quality, its overall climate performance depends on the carbon intensity and reliability of electricity supply, as well as the availability of charging or battery-swapping infrastructure. In some contexts, this raises the risk of partial or "displaced" decarbonisation, where tailpipe emissions are reduced, but upstream emissions remain high. As a result, frame "vehicle decarbonisation" as a sequenced, context-specific package that aligns technology, infrastructure, finance, and regulation, while also addressing demand-side drivers of freight growth.

Decarbonisation starts with the "light end" of the fleet

Although most freight transport still uses internal combustion engine vehicles, a shift has begun in recent years, driven by e-commerce platforms. Current trends show that decarbonisation in urban logistics is taking off primarily in the "light end" of the fleet, where electrification is more feasible and impactful. Two-wheelers, three-wheelers, and light commercial vehicles (LCVs) are becoming the focus because they are highly utilised in dense urban environments. This shift is also driven by rising demand for last-mile delivery services, particularly in platform-based logistics, where frequent, small deliveries are the norm (Expert interviews, 2026).

In parallel, fleets are downsizing, with large trucks being replaced by more flexible, smaller vehicles like tricycles and vans to navigate congestion and access restrictions in urban areas. These smaller vehicles are also easier to electrify, offering a faster path to reducing emissions in the most congested urban spaces. However, this trend also raises a potential trade-off. While individual vehicles are cleaner, more trips and vehicle-kilometres may offset some of the emissions gains at the system level. As such, decarbonisation efforts are concentrating on these smaller, high-frequency vehicles, which also deliver the most immediate air-quality and health benefits (Stratford et al., 2025; SLOCAT, 2024).

Despite some public pilots, private supply chains are often leading electrification

Early fleet electrification is frequently driven by private-sector requirements rather than by city regulation. In Bangkok, large distribution networks, particularly those linked to 7-Eleven supply chains, are reportedly pushing subcontracted operators to shift four-wheel urban deliveries to electric vehicles, even as most two-wheel delivery remains thermal (Expert interviews, 2026). This illustrates an emerging asymmetry, where segments integrated into formal supply chains transition faster than more fragmented or informal segments, potentially widening gaps within the logistics system.

This private "pull" is reinforced by delivery platform growth, which has increased the number of two-wheel couriers and created large addressable segments for electrification. Several private initiatives and electric-fleet pilots are referenced: Greenspoon (Kenya), iKanta (South Africa), and Spyro's role in promoting electric motorcycles in Togo and Benin (interviews, 2026). However, reliance on private leadership raises questions about coordination, standardisation, and the inclusiveness of the transition, particularly for smaller operators with limited investment capacity.

In Dhaka, policy coherence analysis shows that progress tends to concentrate around politically prioritised technologies and practices, while other measures stall where incentives, funding and implementation arrangements are inconsistent or contested by incumbent interests (Khatoon, 2025). For urban logistics, a "private-led" transition can accelerate rapidly, but only if public policy removes contradictions (e.g., misaligned taxes) and provides predictable enabling conditions. Consistent signals of public stakeholders and credible coordination matter for investment decisions.

Given limited budgets, evolving technologies, and political uncertainty, stakeholders emphasise pilot projects as a necessary step to reduce risk, validate operational models, and build confidence for scaling. Lomé is cited as an example, with a pilot focused on transitioning delivery motorcycles within the public administration, accompanied by tracking and socio-economic and technical evaluation to inform a potential scale-up. This aligns with policy-coherence evidence that stable, predictable policy signals over time, and durable organisational arrangements, are crucial to encourage private investment and avoid "stop-and-go" transitions (Khatoon, 2025), which can undermine investor confidence and delay scaling.

Infrastructure constraint according to charging strategy

Charging strategy is emerging as a key design choice: depot charging, public fast charging and battery swapping each imply different land needs, grid impacts and business models. Evidence synthesised from Stratford et al. (2025) shows that infrastructure constraints vary by context: in some markets the main barrier is simply the lack of public charging, while in others (e.g., South Africa) the binding constraint is grid unreliability through load shedding. This strengthens the case for decentralised renewable solutions, particularly solar PV with storage, integrated into charging or swapping hubs to improve service continuity and reduce upstream emissions. This variability challenges one-size-fits-all approaches and underscores the need for locally adapted solutions.

Heavy-duty electrification remains in an early stage, with selective evidence of viability

While light vehicles are expected to dominate the near-term transition, certain corridors show early heavy-duty viability. In India, the 'Laneshift' demonstration pilot along the Bangalore–Chennai corridor is testing electric trucks (including 14t, 19t and 55t) operating under commercial loads across multiple sectors, suggesting that long-haul e-trucking can be viable under certain conditions, even though the market remains small and original equipment manufacturer supply is concentrated. However, battery-electric trucks are still far from achieving price parity with diesel vehicles on most mid- and long-haul routes across regions. (Systemiq, 2023)

Heavy-duty electrification remains highly dependent on policy support, target setting, and investment in charging infrastructure, reinforcing the need for sequencing: address high-utilisation light fleets first while preparing the enabling ecosystem for larger vehicles.

Opportunity window: geopolitics and fuel volatility as accelerators

Geopolitical instability, fuel price volatility, and supply uncertainty are increasingly powerful accelerators for fleet electrification, particularly where electricity supply and infrastructure are in place. In such contexts, fleet decarbonisation is no longer framed solely as an environmental objective, but also as a risk-management strategy for energy security, cost stability, and supply resilience. Capturing this opportunity requires coherent cross-sectoral alignment across transport, energy, finance, and land-use policies to avoid contradictory incentives and ensure actors are not discouraged at implementation (Khatoon, 2025).

These trends matter for planning: early decarbonisation benefits are most likely to emerge from high-utilisation light vehicle segments, rather than from an immediate transformation of heavy-duty fleets.

Key stakeholders for logistics in urban areas of the Global South

City logistics relies on interconnected relationships between flow generators, service intermediaries, receivers, and public and collective stakeholders operating across the same urban space. For mapping purposes, actors can be organised into four functional categories: Shippers, Intermediates, Receivers, and Public stakeholders, reflecting who initiates and specifies shipments, who organises and operates logistics services and assets, who receives goods and shapes last-mile constraints, and who regulates the system.

01

Shippers

They mostly own the goods that need transport, but they also may buy the goods as importers and then resell them quickly. They initiate dispatches and directly or indirectly specify shipments (choose arrangements, set delivery constraints, trigger movements) – i.e Unilever

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- **Manufacturers** and **Producers, Importers:** Generate upstream supply and convert downstream demand into dispatch decisions, influencing shipment sizes, batching, delivery rhythms and supply reliability (subject to capacity and market conditions). – i.e Toyota
- **Retail Chains** and **Distributors**: Initiate replenishment flows and specify delivery requirements (frequency, time windows, handling), often structuring contracting choices
- **E-Commerce Marketplaces** and **Merchants**: Dispatch parcels and define service expectations (speed, traceability), shaping last-mile organisation and performance requirements
- **Wholesalers** and **Semi-Wholesalers (Dual Role):** Act as key redistribution actors, receiving goods upstream and dispatching to retailers, markets, HORECA (hotels, restaurants and catering) and SMEs downstream; often influence delivery timing around trading practices and node operations. – i.e Metro Wholesale

02

Intermediaries

Actors that move, coordinate, host or enable freight flows between shippers and receivers.

- **Logistics Service Providers, Freight Carriers:** Perform storage, handling, transport, and delivery, ranging from 3PLs (third-party logistics providers) and global integrators to local hauliers and couriers; balance service levels with strong pressure to control operating costs. – i.e DHL Supply Chain
- **Independent Drivers and Owner-Operators:** Provide flexible delivery capacity, often through subcontracting or on-demand arrangements ; contribute to coverage and responsiveness, especially for fragmented demand. – i.e Lalamove [in some cities in Asia]
- **Brokers and Intermediaries:** Match demand and capacity through dispatching, brokerage and consolidation functions, reducing transaction costs and coordinating fragmented flows. – i.e Flexport or coxers from West Africa
- **Platform Delivery Operators:** Coordinate delivery through algorithms, digital task allocation and monitoring ; can scale quickly and reshape service organisation and labour arrangements. – i.e GrabExpress
- **Logistics Real Estate Actors (Facility Investors/Developers/Facility Managers):** Provide and manage logistics facilities (warehouses, fulfilment centres, distribution centres, depots, micro-hubs, consolidation centres…), leased to shippers and logistics operators ; shape location choices. – i.e GLP [in Asia]
- **Infrastructure and Node Managers:** Manage freight-relevant gateways and networks (ports, roads, rail, terminals, logistics parks, market facilities), shaping access conditions, capacity, and operational rules that affect logistics performance. – i.e PSA International

03

Receivers

Actors (establishments or individuals) that receive goods and shape last-mile needs through demand, time and storage constraints.

- **Traditional Retailers and Nanostores:** Independently owned shops that depend on frequent, small-drop replenishment and flexible delivery due to limited storage and tight margins; strongly affected by access and curbside conditions. – i.e 7-Eleven franchises
- **HORECA (Hotels, Restaurants And Catering):** Require time-sensitive deliveries and reliable quality (often including cold-chain for food), with constraints linked to operating hours and limited storage.
- **Markets and Fresh Food Traders:** Concentrate high-volume, time-bound inflows and outflows, often creating peak delivery pressures around specific nodes. – i.e Rungis Market Operator
- **Street vendors**
- **SMEs and Workshops:** Receive diverse inputs and goods with variable scheduling needs ; may combine receiving with own-account distribution.
- **Households / End-Consumers (Residents):** Receive goods at home or at pickup points and also generate shopping and parcel-collection trips ; as urban users, they are exposed to externalities such as congestion, noise, road safety risks and air pollution.

04

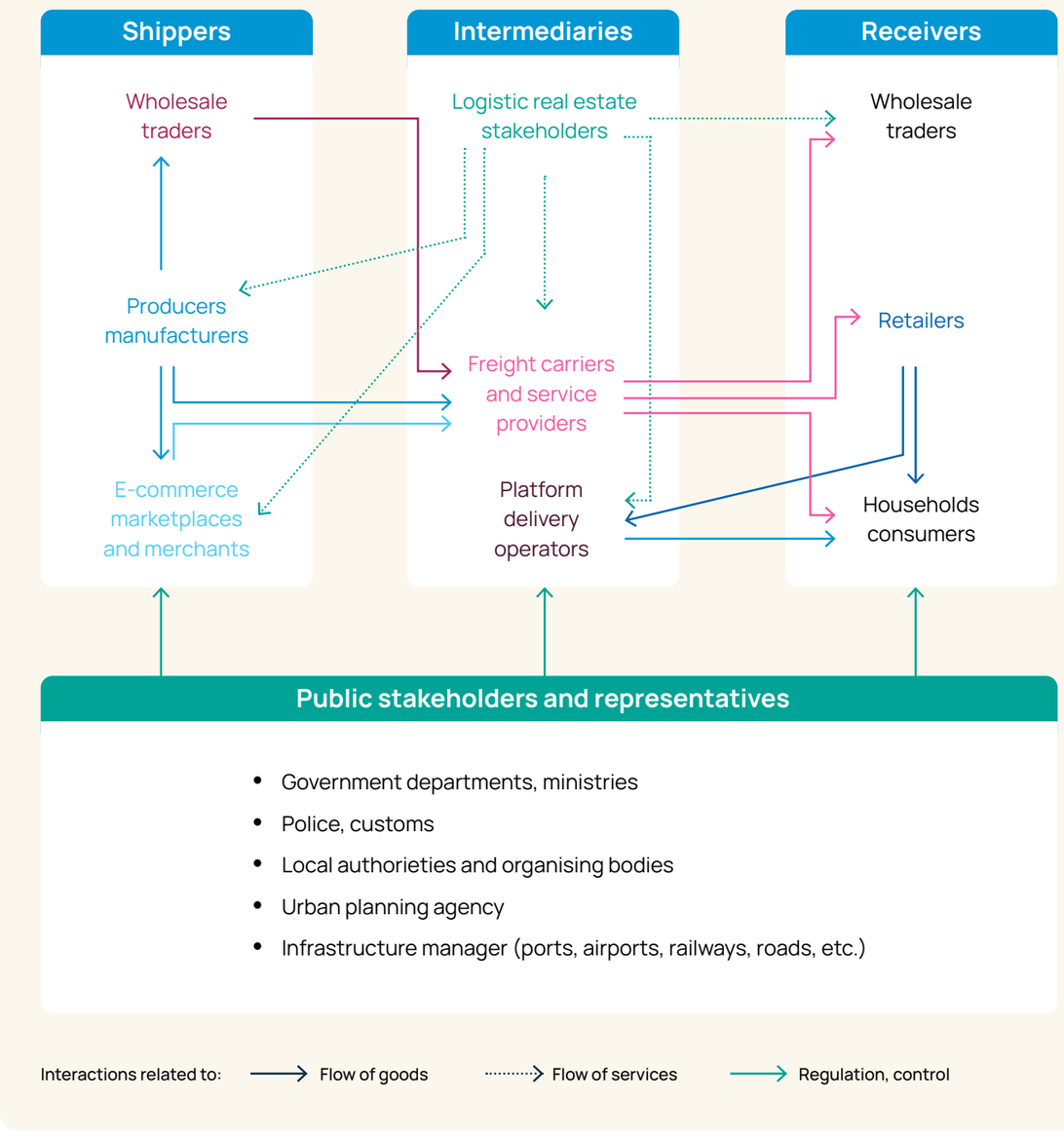
Public Stakeholders and city managers

Actors that regulate, plan and enforce the operating conditions for urban logistics, and convene stakeholder dialogue.

- **Public Authorities and Government Agencies:** Regulate and plan through access rules, curb management, enforcement, environmental and vehicle standards, and land-use decisions ; in some cities, specialised logistics units manage strategy, operations and dialogue with private actors. Municipal services usually dealing with logistics include: transport, economic development, urban planning, environment, waste management, building works, etc. with some overlap or lack of coordination issues.
- **Collective Bodies and Representation Structures:** Chambers of commerce, transport, workers and market associations, unions and freight partnership platforms that aggregate interests, facilitate consultation and can influence the feasibility and acceptance of policy measures. – i.e Singapore Logistics Association

This stakeholder mapping provides a simplified representation of the main actors in urban logistics and the relationships between them, illustrated through flows of goods and associated service.

Figure 11 **Interactions between stakeholders in urban logistics.**



How informal logistics relates to the actor categories (shippers / intermediates / receivers / public actors) ?

The shipper–intermediate–receiver categorisation remains valid in informal logistics systems, but roles are often consolidated into fewer actors, and some "specialised" intermediaries typical of more formalised supply chains may be weakly present, intermittent, or invisible in documentation and data.

Role merging is common (fewer distinct intermediaries). In informal systems, a single micro-operator may combine carrier + dispatcher + broker + cash management, and sometimes also provide temporary storage (e.g., keeping goods at home/shop, informal yard, or within a market) before onward distribution. Similarly, many small retailers or market traders partially internalise the "shipper" function (ordering, aggregation, payment) and may arrange transport directly.

Some intermediary roles exist, but are "informalised" rather than absent. In informal road freight markets, brokerage can be a core coordination mechanism, but it may operate outside formal contracting and records. Freight brokers match supply and demand, and in West Africa they may be known as "coxers", with their role "not recorded on the transport documents" (IRU and World Bank, 2025). Planning implication: actor mapping should include these brokers even when they do not appear in official datasets (licensing registries, waybills, shipper contracts), because they materially influence prices, access to loads, queuing practices, and enforcement outcomes.

Functions that rely on track-and-trace tend to be simplified: Digital platforms / formal dispatch systems: may be limited, replaced by phones/WhatsApp-based coordination and repeated personal relations. Formal documentation roles (e.g., compliance, insurance, claims management): frequently underdeveloped, which can shift risk downstream (to drivers, small traders, end-receivers) and complicate public oversight. Institutional logistics real estate (warehouses, consolidation centres): may be partially substituted by market-based storage, informal yards, or mixed-use premises—still "nodes", but with different governance and externality profiles.

Key challenges and opportunities for logistics in urban areas of the Global South

The spatial constraints of urban logistics could exacerbate tensions in cities (Congestion, land-use conflicts, logistics sprawl)

Shaping Freight Flows and Managing E-Commerce Growth

For Global South cities- often characterised by already high levels of congestion, constrained street space and limited freight coordination mechanisms - the priority is to anticipate and shape freight flows through measures that support consolidation, reduce failed deliveries, and manage curb access. For growing e-commerce-related demand, it is important not to treat parcel or food delivery growth as a marginal phenomenon (Mejia, 2021; World Economic Forum, 2020). Available evidence points to sustained growth in delivery activity: global freight is projected to increase by 55% between 2020 and 2050, while global parcel volumes reached 161 billion parcels in 2022 and are projected to rise to 225 billion by 2028 (Pitney Bowes, 2023) and urban freight in Asia estimated at +20% in 2020 with potential +3.7% annual growth to 2050 (GIZ and SLOCAT, 2026; Urban Logistics, 2026).

Logistics Sprawl exacerbates congestion and complicates land-use planning

Freight growth pressures in large cities in the North and (increasingly) in the South are made more acute by logistics sprawl, defined as "the spatial deconcentration of logistics facilities and distribution centres in metropolitan areas" (Dablanc and Rakotonarivo, 2010). Warehouses, terminals and distribution centres are multiplying and moving ever farther from dense urban cores towards suburban or exurban locations, driven by land prices, planning constraints and economies of scale (Allen et al., 2012; Dablanc and Rakotonarivo, 2010). This phenomenon has been widely observed across Europe, North America and Japan, while recent research also points to a parallel (and niche) re-urbanisation of some logistics activities in response to e-commerce and the search for closer delivery locations (Heitz and Dablanc, 2015 ; Sakai et al., 2015 ; Giuliano and Kang, 2018 ; Kang, 2022 ; Charters-Gabanek, Raimbault and Hall, 2024). When logistics functions remain in the urban core, they often take the form of dark stores - back-end fulfilment spaces without a retail storefront, used by grocery delivery apps — which occupy prime commercial locations while functioning more like warehouses. This creates a hard trade-off in urban land policy: what makes last-mile delivery more efficient and affordable can also weaken city-centre vitality and compete with other retail uses.

Last-mile delivery growth leading to higher vehicle activity and increased pressure on limited road space

In practice, last-mile deliveries can disproportionately increase urban vehicle activity, raising operating costs. It creates conflicts over scarce urban land and road space; it also intensifies competition for curb space and can drive demand for new logistics facilities that actual demand does not justify. It also contributes to noise, air pollution, safety risks, and land take, including the loss of agricultural and natural areas (Aljohani & Thompson, 2016; Lindsey et al., 2014; Raimbault & Heitz, 2023).

The answer is not to create microhubs to smooth out last-mile deliveries. If they are not carefully located and matched to real freight patterns, they can consume valuable space that might otherwise remain unused or support higher-value urban functions. The same caution applies to measures which advocate for the replacement of motorised vehicles by cargo bikes for last-mile delivery of goods: cargo bikes can be highly efficient in dense areas, but if their use expands faster than infrastructure, they compete with cyclists for limited lane space and strengthen the case for wider, better-designed cycle networks rather than simply squeezing freight into existing lanes. In other words, sustainable urban logistics requires not just modal shift, but spatial discipline: every new logistics facility, microhub, and cycle-freight route should earn its place in the urban fabric.

Now, it is imperative to collect good data to assess and model actual freight traffic and its functional link to the growing number of warehouses in and around cities. The right response to growing last-mile delivery is not more logistics space, but the right kind of logistics infrastructure in the right place. These challenges are often sharper in rapidly urbanising cities of the Global South, where fragmented urban expansion, inadequate access roads and limited logistics hubs amplify freight vehicle flows, prolong travel times and complicate the development of sustainable and liveable urban mobility systems (Kiribou, 2026; Marei & Savy, 2020 ; Mejia, 2021).

Opportunity: Sustainable Urban Logistics through modes of transportation better suited to the city's constraints

Global South cities facing growing e-commerce demand present a strong opportunity to integrate sustainable delivery models, particularly cycling modes, electric two/three-wheelers, and even walking logistics. These solutions are especially valuable for food and retail sectors, enabling efficient for last-mile deliveries in congested urban areas. Capitalizing on this opportunity requires supportive infrastructure, such as dedicated lanes and secure parking for delivery vehicles, as well as policies that incentivize "sustainable technologies". With the right regulatory environment and investment in local logistics hubs, these innovations can enhance urban mobility while reducing environmental and congestion impacts.

Logistics as a foundational element for planning a healthy city

Urban logistics affects the environment and public health mainly through air pollution, climate emissions, noise and road safety risks. In many Global South cities these impacts are amplified by fast demand growth, chronic congestion, ageing vehicle fleets (often second-hand imports), weaker inspection/enforcement mechanisms, and the important role of informal and semi-formal operators.



Pressure on space around a market – Kigali (Rwanda)
Photo: Transitec

Social impacts

Population exposure to air pollution is high because deliveries are heavily concentrated along dense urban corridors (markets, port access roads, wholesale areas) and operate in immediate proximity to residential areas. The UN Environment Program notes that heavy-duty vehicles contribute a large share of on-road NO_x , $PM_{2.5}$ and black carbon emissions, underscoring the health significance of freight and commercial fleets. These pollutants are strongly linked to cardiopulmonary diseases and premature mortality, making freight a major but often under-recognised public health concern. In Global South cities, vehicles are often older diesel models, with poor maintenance, sometimes using adulterated fuels, and operating in stop-and-go traffic conditions that significantly increase real-word emissions beyond regulatory standards. Informal delivery fleets also tend to have limited access to finance for renewal and weak compliance incentives, locking in high-emitting vehicles (SLOCAT, 2024 ; Mejia, 2021).

Freight traffic also generates intense and uneven noise pollution, particularly during night-time and early morning

operations, and near markets and logistics sites). Noise exposure is associated with sleep disturbance and stress-related health outcomes, and it disproportionately affects residents living along freight corridors-often lower-income communities located near major roads and terminals (ITF, 2025).

Urban freight increases exposure to crashes through frequent interactions between large vehicles and vulnerable road users in dense streets, widespread use of motorcycles/3-wheelers for deliveries (high injury risk) and working conditions (time pressure, long working hours and informal operations). Beyond the increased probability of accidents, freight workers are also exposed to ergonomic strain and injury from manual handling and fatigue and stress from precarious conditions. This highlights a dual burden: freight systems generate risks both for the general public and for the workers who sustain them. These risks are particularly relevant in Global South contexts where informality is widespread, and occupational and health (OSH) protections are limited (Mejia, 2021). The public health impact is therefore both direct (injuries/deaths), with risks heightened where street design and enforcement are weak (World Bank, 2024). Despite this, road safety and injury risks remain significantly underestimated in freight discussions.

Environmental impacts

Urban logistics also contribute to climate change through CO_2 from fuel combustion and short-lived climate pollutants (notably black carbon). Additional climate-relevant sources in freight systems include refrigerant leakage from cooling equipment (cold chains for food/medicine), which can be significant when maintenance is weak and equipment is ageing (Mejia, 2021).

Urban freight activities can also affect soil and water quality through fuel and oil leaks, inadequate vehicle maintenance and poorly managed loading areas. At the same time, the growth of e-commerce increases packaging and solid waste volumes. These impacts are particularly pronounced in cities where waste collection, recycling systems and environmental controls remain limited.

Health and environmental impacts as primary drivers for promoting vehicle decarbonisation

In dense urban corridors, the near-term argument for electrifying freight vehicles is often strongest on health grounds. Evidence highlights that electrifying electric motorcycles delivers zero tailpipe emissions, thereby reducing exposure to local pollutants that drive respiratory illness, and delivering tangible improvements in urban air quality.

However, framing electrification primarily as a health solution risk overlooking broader system-level constraints and trade-offs. Vehicle electrification does not automatically mean decarbonisation, as emissions are partly shifted upstream to the power sector. The case of the United Arab Emirates (UAE) transition to electric vehicles illustrates this well: while interest in EVs is rising, and solar production is developing, the overall electricity mix remains a challenge, and reported net emissions gains from EVs are only partial. This implies that vehicle strategies should be coupled with power-sector decarbonisation trajectories and with local renewable generation where feasible.

Opportunity: Capitalise on environmental and public health imperatives to drive a transformation of the sector (vehicles, practices, technology)

The growing demand for urban logistics presents an opportunity to improve both public health and job conditions by investing in safety training, and by developing more robust vehicle and labour standards. Electrification of delivery fleets, especially motorcycles and three-wheelers, offers immediate benefits for air quality and health, particularly in densely populated neighbourhoods. The “health-first” framing can be particularly effective in Global South contexts where public acceptance and political coalitions may form more readily around visible local benefits than around long-term climate targets alone. Achieving these gains requires strengthening enforcement, improving vehicle maintenance, and promoting access to finance for cleaner fleets.

Urban logistics data beyond surveys: New opportunities, persistent blind spots

Traditional surveys: essential foundations, but increasingly insufficient on their own

Survey-based methods remain essential to establish an urban freight baseline, particularly where no structured freight data exists. They are also among the few approaches that can document dimensions operational datasets rarely capture well, such as delivery practices, receiver constraints, and the organisation of informal or own-account freight. However, their scope is inherently limited and increasingly misaligned with evolving logistics systems. Traditional surveys only partially capture freight traffic in cities. They tend to underestimate light commercial vehicles, and often fail to cover motorised two-wheelers, cargo bikes and other emerging delivery modes. They can also miss a growing share of e-commerce-related flows. This creates a paradox: one of the fastest-growing segments of urban logistics is also among the most heavily digitalised, yet conventional survey methods still capture it poorly.

In addition, surveys are costly to design, implement and repeat, and they often provide snapshots that quickly become outdated in rapidly changing segments such as e-commerce, instant delivery and platform-based logistics (Mejia, 2021 ; Expert interviews, 2026). Their value is therefore clear, but their replication over time is often difficult and expensive. This is why surveys increasingly need to be complemented by higher-frequency data sources that can support regular monitoring, while recognising that no single source provides a complete picture.



Field survey on informal transport in Abidjan (Ivory Coast) - Transitec 2025 study
Photo: Transitec

Higher-frequency data sources can improve monitoring but remain incomplete

A growing range of operational and digital data sources can provide more continuous insight into vehicle movements, delivery activity and the use of urban space (Dablanc & Adoue, 2024). These sources expand analytical capacity, but also introduce new governance, access, and representativity challenges. Several types are particularly relevant for city authorities:

- **Telecom data and GPS traces:** Delivery workers, like other road users, leave digital traces that can potentially be used to analyse movements and stops. However, logistics vehicles are difficult to isolate from broader geolocation datasets. Some freight-related digital sources have existed for years, including truck tachographs and tolling data on major roads, but they are still rarely used for logistics planning and modelling. Privacy concerns, commercial secrecy, and limited spatial coverage still constrain access, highlighting the tension between data availability and usability.
- **Vehicle-generated data (OEM / floating car data / telematics):** Data provided by manufacturers, OEMs or data brokers can support origin–destination analysis, routing patterns and stop detection for trucks and vans. These datasets can be powerful for metropolitan diagnostics, but they are not neutral from a governance perspective. Their availability depends on budget, and access conditions depend on commercial providers. This creates a dependency on private actors and reinforces inequalities between cities with different financial capacities. The amount of information that a local authority can use is therefore closely linked to its financial capacity.
- **Company and platform data:** often seen as one of the richest potential sources. Logistics companies, e-retailers and delivery platforms hold detailed operational information on routes, fleets, volumes and service patterns. In practice, however, these data remain difficult to mobilise. Public authorities often request data through fragmented or one-off initiatives, which companies tend to view as a commercial risk and burdensome. Even when partnerships are established, they usually cover only one sector, one operator or one period. They can improve understanding of a specific market segment, such as express parcel delivery, but they rarely provide a representative picture of urban logistics as a whole. Companies remain reluctant to provide their data, which is increasingly central to their business models. Technical difficulties are also common, especially where datasets differ in structure, format and quality. A more realistic approach may be to require a limited set of simple indicators rather than full operational datasets. Examples include the weekly number of deliveries, kilometres travelled in residential streets, or the share of low-emission vehicles in delivery fleets. Some cities have conditioned the right to make deliveries in certain part of a city to the provision of such indicators. For instance, Barcelona has linked the use of a large share of its designated loading and unloading bays (“Area DUM”) to a mandatory digital check-in. Drivers must register the stop through the city-approved system, which enables the municipality to verify compliance in real time while simultaneously generating a structured dataset on freight activity. This model has also proven successful in Paris, with the city administration requesting monthly reports on a set number of KPIs from micromobility operators who have been given a license to operate in the city. This data is then used to inform the city’s own policy and plans on cycling infrastructure and parking management.
- **Incidental data from public management systems:** generated through traffic and parking management systems. These data are not collected primarily to understand urban logistics, but as by-products of regulation and operations. This “data by design” vs. “data by-product” distinction is important: such datasets are often more accessible and sustainable over time, making them valuable for local authorities. They are often internal to existing public management systems and can therefore provide relatively regular indicators at limited additional cost, aside from anonymisation and processing requirements. In many European cities, automated number plate recognition cameras used to monitor low-emission zones can provide information on heavy goods vehicle and light commercial vehicle traffic. Their coverage remains incomplete, as they do not always capture foreign vehicles or movements outside regulated areas, but they still provide useful information on fleet composition and fleet renewal. In the Netherlands, such data is increasingly used in connection with the gradual roll-out of Zero Emission City Logistics zones. In Belgium, truck road pricing has also become a valuable source of freight traffic data, particularly in Brussels, where anonymised data from Viapass is used to analyse heavy goods vehicle movements. Since the introduction of the GDPR, processing has been carried out by trusted third parties, while aggregated and anonymised outputs remain accessible to public authorities. These examples highlight how regulatory infrastructures can double as data infrastructures.
- **Parking management systems:** They can play a similar role. In Barcelona, the SPRO/AreaDUM application requires delivery drivers to identify themselves when they start loading or unloading on street. This provides real-time information on the number and location of delivery operations, as well as on the driver’s broad activity sector. Such systems are especially useful for understanding curbside demand and the spatial distribution of deliveries. They show that parking regulation tools can also function as logistics observation tools.

These sources can significantly improve visibility on fleets, traffic patterns, delivery stops and curbside use, and they can strengthen regulation and traffic management. However, they do not fully represent urban logistics. Most capture vehicle movements, stops or traffic composition, but provide limited information on commodity types, delivery practices, receiver behaviour, contractual arrangements or working conditions. They may also reinforce a structural visibility bias: the most formalised and digitised operators are typically easiest to measure, while informal practices remain partly outside the data landscape (Expert interviews, 2026).

Baseline data scarcity as a barrier to logistics emissions assessment

Data also plays a central role in assessing GHG emissions from urban freight. Emissions inventories require information on vehicle types, energy sources, mileage, payloads, and operating conditions, yet this data is often unavailable or difficult to collect at the city level. In many cases, private operators hold the most relevant information but do not share it, limiting cities' ability to establish robust baselines and evaluate the impact of logistics measures. To address this, some initiatives have developed simplified self-monitoring tools and subsidised baseline data collection in order to make emissions assessment more feasible, even in low-capacity contexts. Where more detailed operational data is available, including telematics from carriers or OEMs, it becomes possible to estimate not only emissions, but also vehicle use patterns, charging behaviour and broader cost-performance indicators. In practice, however, the main challenge remains the same: without access to minimum baseline data, designing, implementing, and evaluating urban freight decarbonisation policies remains difficult.

Opportunity: Use pragmatic data-sharing and governance arrangements to build a more complete picture of urban logistics activity

The digitalisation of urban logistics and the multiplication of operational data sources create an opportunity to build a more complete, higher-frequency and potentially lower-cost picture of logistics activity, provided sources are combined through pragmatic governance arrangements and data-sharing frameworks. This can strengthen both regulation and planning by complementing episodic survey snapshots with more regular monitoring of movements, stops and curb activity, while keeping surveys for what digital traces cannot capture.

A second opportunity is to engage universities and research teams as methodological anchors, drawing on their survey expertise and analytical rigour to document poorly visible segments and to strengthen interfaces between public authorities, operators and researchers through applied partnerships and joint projects.

Finally, the growing need to produce emissions baselines for urban logistics can serve as a lever to expand minimum data collection : environmental accounting can justify investments in measurement that simultaneously improves sector visibility, supports policy evaluation and helps mobilise climate-related support for monitoring capacity.

From workforce availability to logistics capability: addressing skills gaps in a rapidly transforming sector

A sector in transition and a growing skills–performance gap

Logistics and urban logistics comprise two main job sets: transport (driving, shipment loading/unloading, and distribution) and warehousing (handling, picking, and order preparation). They can have different operational characteristics (driving can mean being away from home, while warehousing creates local jobs). They also share many characteristics, including the increasing share of white-collar tasks and technical skills.

The Logistics Performance Index 2023 (World Bank, 2023) benchmarks countries on six dimensions, including the "competence and quality of logistics services", placing skills and professionalism at the core of measured logistics performance alongside infrastructure and border management. It also frames the 2020s as a decade of supply-chain transformation in which performance increasingly depends on the effective deployment of IT solutions and data-driven approaches to improve visibility and manage flows, while noting that digitalisation can be harder to implement in low- and middle-income contexts where access to technology and enabling infrastructure-notably electricity-remain binding constraints. However, this transition is uneven, and in many low- and middle-income contexts, limited access to enabling infrastructure—particularly reliable electricity and digital connectivity—constrains the adoption of such solutions.

Against this backdrop, the logistics and freight sector are undergoing a rapid transition, driven by digitalisation, new delivery models and emerging automation. This transformation is both technological and organisational, reshaping work and shifting skill requirements from traditional operational know-how to hybrid technical, digital, and managerial competencies (Blix, 2017; McKinnon et al., 2017; SLOCAT, 2024). A key implication is a widening skills spectrum across occupational levels, with bottlenecks that directly condition service quality, reliability, and safety performance, and shape the feasibility of reforms that rely on stronger planning, compliance, and operational discipline (McKinnon et al., 2017; Marei & Savy, 2020).

The 'missing middle': a binding constraint on system performance

The World Bank analysis associated with the 2016 LPI provides a structured view of skills gaps by distinguishing four occupational tiers:

01 operative/ blue-collar staff

02 administrative logistics staff

03 logistics supervisors

04 logistics managers

Shortages are reported across all four levels but are particularly acute in lower-performing LPI countries, especially in mid-level roles (administrative staff and supervisors). At the same time, management shortages are also significant in several regions.

There is a generalised perception that shortages range from difficulties recruiting drivers and warehouse operatives to challenges filling senior supply chain management positions, and suggest constraints are likely to persist or worsen over the medium term. As a result, logistics systems may function, but with reduced reliability, weaker quality control, and limited capacity to scale or formalise.

Robust labour-market statistics with adequate sectoral and occupational detail are typically unavailable in developing contexts, limiting diagnosis and calibration of training responses and increasing reliance on survey-based and indirect evidence.

Persistent shortages and weak job attractiveness

Beyond measurement limits, the World Bank analysis points to structural drivers that reinforce shortages: logistics jobs often have low prestige and relatively weak attractiveness (working hours and conditions, pay and career prospects); vocational preparation is often insufficient; and developing countries face limited skilled labour supply despite high unemployment rates. This is partly due to the speed of technological and digital innovation, which requires fast, frequent upskilling. Competency requirements evolve faster than training systems can adapt, further widening the gap between available skills and operational demands.

Training pipelines under strain and misaligned with industry needs

Another driver of persistent shortages is a weak education and training pipeline. Overall, the logistics workforce lacks sufficient volume and resources, even in contexts with strong academic systems. Universities often face resource constraints, and the number of graduates in logistics, supply chain, urban planning and related fields appears misaligned with growing needs (Expert interviews, 2026; McKinnon et al., 2017).

Stakeholders also underline a structural disconnect: technology institutes may be better positioned to deliver applied skills, yet they are often insufficiently connected to private sector needs, creating a persistent "translation gap" between curricula and operational realities (Expert interviews, 2026), limiting the employability and immediate productivity of graduates.

Global evidence confirms that many developing regions lag in training budgets, course content, and educational quality, and that available training is often limited to short-term, on-the-job learning (McKinnon et al., 2017). It also points to the need for skills development ecosystems that go beyond individual firms by combining vocational institutions, higher education, professional associations, and public agencies, and by strengthening retention and career pathways so workforce development efforts can accumulate rather than be undermined by churn (McKinnon et al., 2017).

Public-sector capacity gaps and planning blind spots

Skills gaps are also visible in the public and para-public ecosystem responsible for data production and planning. In Nouakchott (Mauritania), urban freight depends heavily on imports and operates through a port–warehouse–city logistics chain, with limited public planning and weak data availability. Freight distribution within the urban area is highly heterogeneous, reflecting a light regulatory framework: heavy trucks, vans and a rapidly growing fleet of three-wheeled vehicles coexist, the latter expanding since 2018–2019 in a legal grey zone. Stakeholder engagement is emerging (multi-actor workshops in 2022 and 2025). However, the case illustrates how a lack of training and technical capacity in survey design and analysis can undermine the usefulness of collected data, even when resources are mobilised (Expert interviews, 2026). Without adequate competencies in survey design, data collection protocols, and data analysis, cities face persistent planning blind spots and struggle to justify or calibrate interventions.

Enabling conditions for inclusion in logistics workforces

Gender inclusion emerges as both a workforce and skills-development gap. Initiatives exist (e.g., eco-driving training for women in India; "women lab" approaches in Latin America, recommended by Despacio), but the topic remains less mature in logistics than in passenger transport and is still inconsistently integrated by funders and programmes (Expert interviews, 2026).

Expert interviews (2026) identify practical enabling conditions, safe facilities, appropriate infrastructure such as toilets, and targeted pathways as necessary to expand participation, consistent with global evidence of women's under-representation and constraints linked to norms, safety, and unequal access to education (SLOCAT, 2024).

Working conditions as a structural driver of shortages

Working conditions often combine long hours, variable income, and high exposure to road risk, which can deter entry and worsen retention, reinforcing skills shortages over time (McKinnon et al., 2017; Marei & Savy, 2020). In Abidjan, interviewees report workdays exceeding 12 hours, incentive schemes that push longer hours, and frequent accidents, particularly among non-local drivers unfamiliar with the city (Expert interviews, 2026).

These conditions create a self-reinforcing cycle: poor working conditions reduce job attractiveness and retention, which in turn limits skill accumulation and professionalisation within the sector. Where social protection exists, it may still be conditional or incomplete, and accidents and illness can still force involuntary exits from the labour market, with workers losing jobs, contracts, or income when they are temporarily or permanently unable to work (Expert interviews, 2026).



Man carrying a load in Antananarivo (Madagascar)
Photo: Transitec

Platform delivery models and the risk-transfer challenge

Platform-enabled delivery illustrates how evolving business models can reshape both skills needs and labour conditions. In some contexts, workers seek employee status as platform commissions rise, but weaker labour constraints can limit effective negotiation outcomes (Expert interviews, 2026). The UAE example shows a distinct arrangement in which workers are employed through intermediary service companies (linked to visa rules), trained and deployed across platforms, with strong standardisation-yet with mechanisms that can transfer operational risks onto workers through deductions and variable pay structures (Expert interviews, 2026). Overall, platform-enabled models raise the bar for digital literacy, compliance, and performance management, and raise questions about employment status, protection, and bargaining power (SLOCAT, 2024; Blix, 2017). The inclusiveness of emerging logistics labour models must be carefully studied when coordinating the entry of new platforms

Opportunity: Turn workforce growth into a logistics capability dividend through targeted skills pipelines

A large and growing labour pool can be turned into a demographic dividend for urban logistics, helping the sector keep pace with economic expansion and rapid operational change. This is not achieved by absorbing workers into low-skilled jobs, but by equipping them with the competencies needed for modern, reliable logistics services. Capturing this dividend requires sustained investment in skills development pipelines, including digital capabilities and the “missing middle” of administrative and supervisory roles, so that workforce growth translates into higher service performance, productivity gains and more inclusive employment opportunities, notably for young workers and women.

Inefficient and weak supporting infrastructure of logistics

Bottlenecks and increased costs due to weak road connections

In many Global South cities, inefficient, insufficient, or poorly maintained supporting infrastructure slows urban logistics performance. For example, logistics operators often face degraded or discontinuous road networks and limited street capacity, which hinder vehicle flows, contribute to fleet deterioration, and complicate deliveries in urban areas with poor road connectivity.

These shortcomings are compounded by weak connections between major freight generators (wholesale markets, industrial zones, ports) and the urban road hierarchy, which concentrates freight traffic on a limited set of corridors and intensifies local bottlenecks. The immediate effects include low delivery reliability, higher operating costs and travel-time variability, increased double-parking and unsafe curbside practices, and greater exposure to congestion and road-safety risks (Kiribou, 2026; Mejia, 2021).



Traffic congestions next to street market Yaoundé (Cameroon)
Photo: Transitec

Lack of infrastructure for efficient, low-emission delivery models

These infrastructure gaps also complicate the adoption of more efficient and lower-emission distribution models (consolidation, route optimisation, clean vehicles), as operators lack secure, accessible spaces for loading/unloading, transhipment and staging, and may face constraints in energy reliability and charging availability (Mejia, 2021; World Economic Forum, 2025). They affect all types of operators, from small informal actors to structured companies, and can worsen working conditions through risky handling practices and a lack of basic amenities at logistics nodes (Mejia, 2021).

Opportunity: Invest in road maintenance and network upgrades to create more efficient urban logistic systems

The need for improved infrastructure presents an opportunity to enhance urban logistics performance. Upgrading degraded road networks and improving connectivity between logistics generators can reduce bottlenecks, lower operating costs, and increase delivery reliability. To realise this, cities require comprehensive infrastructure planning, solid financial backing, stronger governance, and investment in maintenance and technical capacity to address existing gaps, ensuring long-term sustainability and resilience in urban logistics systems.

Overloading vehicles accelerates pavement deterioration

Overuse from rapid urbanisation, combined with underinvestment in maintenance and skills, can produce a "depletion cycle" in which roads and logistics-relevant interfaces degrade faster than they can be rehabilitated (Thusi & Mlambo, 2023). Overloaded vehicles also accelerate road infrastructure deterioration because pavement damage rises disproportionately with axle load. Even moderate overloading can sharply reduce pavement service life, especially on thin, unpaved, poorly drained, or already deteriorated roads. High temperatures and water infiltration aggravate the problem, intensifying rutting, cracking, and maintenance needs. Beyond infrastructure impacts, overloaded vehicles also undermine road safety by reducing stability, increasing braking distances, and raising the risk of rollover, brake failure, and mechanical damage (Gomes et al., 2023).





Overloaded vehicle in Pointe-Noire (Republic of the Congo)
Photo: Transitec

Poor maintenance can lead to seasonal inaccessibility (e.g., erosion during rainy periods), directly affecting the movement of goods and people and market access, with risks that can extend to peri-urban supply corridors feeding cities (Ngezahayo, Burrow and Ghataora, 2019). Poor roads can also discourage freight operators from using new vehicles.

Urban logistics vulnerability under compound geopolitical and climate risks

Interdependence and uneven vulnerability to compound shocks

In most urban freight systems in the Global South, supply chains are increasingly global and interdependent, making them more efficient but also more exposed to compound shocks, geopolitical tensions, border frictions, energy and food price volatility, and climate events. The Logistics Performance Index from 2023 found that overall logistics performance ratings were broadly stable compared with 2018, with top performers (Singapore : 4.3, Finland : 4.2, China : 4) still rated around 4.1/5 and bottom performers (Angola : 2.1, Madagascar : 2.3, Fiji : 2.3, Iraq : 2.4) around 2.1/5, despite the pandemic and the supply chain crisis.

The report explains that this relative stability reflects the LPI survey's focus on structural capabilities (infrastructure, border processes, service quality, tracking and tracing) that are less sensitive to short-term shocks. At the same time, vulnerability remains highly uneven across countries and corridors. The LPI "timeliness" dimension deteriorated, meaning shipments were less consistently delivered within the expected time window. In addition, the 2023 survey introduced a standalone question on disruption exposure (i.e., whether shipments faced significant disruption), and results show that shipments to low-income destinations are reported as disrupted far more often than shipments to high-income destinations.

Geopolitical tensions multiply disruption effects across logistic systems

Political instability and border tensions can quickly disrupt logistics through route changes, added procedures, and uncertainty that raises costs and reduces predictability. Border frictions can persist even under regional integration frameworks, and sudden closures or restrictions can force rerouting and create additional administrative layers and margins. (i.e., Bangkok, Thaïlande) (Interview notes, 2026)

Disruptions generate a number of ripple effects – they can:

Sharp cost inflation

Trigger sharp cost inflation through longer distances, added fees and delays, with the majority of price increases being borne by the end-consumer.

Disrupt logistics operations

Disrupt logistics operations, interrupting service patterns, delaying shipments, reducing corridor reliability, and forcing rapid reorganisation of routing, warehousing and staffing,

Reduce labour availability

Reduce labour availability where migrant workers leave, are expelled, or face tighter quotas and eligibility conditions.

LPI 2023 notes that shocks can generate cascading effects (including export restrictions and demand overshooting) and affect transport services and trade routes (Arvis et al., 2023). Evidence on African food systems shows that long and import-dependent supply chains increase vulnerability: food supply chains in Africa can be significantly longer than in Europe, transport costs can raise food prices substantially, and reliance on imported staples -such as wheat, with a large share shipped over long distances - heightens exposure to global disruptions (SLOCAT, 2024). In such context, prolonged disruption is not only a price issue but can increase the risk of shortages where import dependence is high and domestic alternatives are limited (SLOCAT, 2024).

Climate and public health events as systemic stressors

Similarly, flash floods, droughts, or sanitary crises (like the COVID pandemic) can damage or impede transport infrastructure, interrupt deliveries, and affect labour availability. For example, a 2023 drought affected the Panama Canal, temporarily reducing the number of ships that could pass through and causing long delays in shipping times.

Such events can bring cities and their logistics systems to a standstill. These shocks remind us that urban logistics systems must be planned with economic, climate, and public health resilience in mind, accounting for multi-level disruptions that can occur, from climate and health to economic and institutional ones.

Morocco's mobility roadmap shows how to plan resilience into transport infrastructure that supports logistics operations, including strategic corridors and access networks. It notes that linear systems are vulnerable to failure and calls for risk-informed upgrades, updated design standards, and adaptation and insurance mechanisms, particularly for flood risks (Ministère de l'équipement, du Transport, de la Logistique et de l'Eau et al., 2018).



Road network deterioration following heavy rains in Touba (2025)
Photo: Transitec

Gateway dependence and landlocked exposure as structural risk factors

Cities that depend on a limited set of gateways and cross-border interfaces are particularly vulnerable to these disruptions (Expert interviews, 2026).

Gateway dependence further amplifies risk. In Mauritania, Nouakchott is a key gateway city, with around 80% of national imports flowing through the port and onward to the hinterland and neighbouring countries, illustrating how national distribution becomes vulnerable when it relies on a small number of strategic nodes (Expert interviews, 2026).

Interface delays and urban access constraints

Reliability is often shaped less by time at sea than by delays at interfaces-ports, airports and multimodal facilities-and by "beyond the gates" constraints. The 2023 Logistics Performance Index links dwell times to the urban environment around gateways, including congestion in dense port cities, the capacity of domestic logistics systems, and land-use/zoning to absorb and distribute flows (Arvis et al., 2023). Finally, LPI 2023 indicates that disruptions are perceived as more severe when trading with lower-income destinations, pointing to structural fragility in low-performing environments and the urban corridors and gateway cities that serve them.

Security constraints and high cost of risk mitigation in last-mile operations

Weak regulation and inadequate urban freight infrastructure can increase exposure to insecurity by forcing deliveries into poorly controlled conditions: limited street lighting, no designated loading/unloading space, and constrained access around markets and dense commercial areas. This leads to longer dwell times, handling spilling onto the street, and higher risks of theft and competition for public space. These same constraints also contribute to illegal occupation of public space and congestion. São Paulo's off-hour delivery pilot shows that security considerations then become a design constraint and a cost driver: risk mitigation relies on selecting lower-risk areas, avoiding high-risk cargo, and coordinating with the police to align night patrols with delivery windows. In São Paulo, some participating firms also deployed armed escorts, adding substantial costs (reported at 40–50% of the freight price), underscoring how security conditions can directly affect the scalability and economics of off-hour delivery schemes (Expert interviews, 2026; Yoshizaki et al., 2018).

Opportunity: Use structural upgrades and diversified connectivity to absorb shocks and reduce long-term vulnerability

Cities of the Global South, especially those lower-ranked on the LPI scale, have an investment potential in the foundational assets (LPI covers six aspects of logistics: efficiency of customs procedures, quality of transport infrastructure, competition in the freight market, quality of logistics services, ability to track shipments in real time, and timely delivery at destination) that can strengthen the resilience of their logistics sytems to geopolitical disruptions and environmental shocks.

To increase their resilience levels, these cities can also align with the global tendency to diversify trading routes and partners. As major economies seek alternative corridors, Global South countries can also reduce dependence on single gateways or corridors and position themselves as strategic urban nodes along these corridors to attract connectivity investment, while keeping agreements balanced and avoiding counterproductive trade-offs that undermine long-term autonomy.

Cities can also bandwagon on the growing momentum and investments into building climate resilience into logistics supply chains, so that decarbonisation and adaptation reinforce each other rather than compete for resources.

Governing urban freight and logistics in Global South cities

This section explains how cities can influence freight outcomes and why governance arrangements often determine whether technical solutions can scale. It then reviews the motives and instruments available—ranging from basic traffic and curb regulation to environmental requirements, electrification enabling conditions, land-use tools to secure logistics space, integration into urban mobility plans, time-shifting deliveries, and pathways from pilots to scale—before clarifying how responsibilities and levers are distributed across local, metropolitan and national levels.

Policy objectives and instruments

Urban logistics as a public policy domain: *expanding mandates and expectations*

As a privately dominated sector, logistics is not a natural target for governance (unlike public transportation services or the organisation of major utilities, for example). However, because of its important externalities, both negative and positive, from air pollution, congestion, and road safety hazards to job creation, local economic development, and urban productivity, logistics is a sector public policy can help govern. Moreover, the growing number of challenges associated with this sector calls for a rethink of public intervention.

Today, most public authorities govern this sector poorly, either failing to ensure long-term implementation and enforcement of urban logistics policies or missing the design of such policies altogether. However, city administrations have a wide range of tools to strengthen governance in this sector, including both "hard" measures (e.g., bans on certain types of freight activity, waste collection services…) and "soft" initiatives (e.g., organising consultations, collecting urban freight data).

The sections below detail the range of policy measures cities can implement to govern their urban logistics systems better.

Institutional capacity and dialogue: *logistics forums and dedicated expertise*

Cities must also better understand, model and forecast goods flows. "Freight Forums" or "urban logistics charters" are now part of local authorities' vocabulary. Most European cities have established consultative bodies with transport and logistics companies and their organisations, along with representatives from the business community, residents, and associations.

Effective freight forums serve as spaces for public consultation and help secure buy-in from participants who feel invested in the process. Successful forums enable negotiations on the technical or financial aspects of urban logistics measures. Building on this, the London Freight Forum has helped translate consultation into delivery. It has supported the emergence and scaling-up of practical measures such as delivery retiming and out-of-hours operations, backed by "quiet deliveries" guidance to manage noise impacts. It has also provided a structured interface for aligning business practices with TfL-led tools and programmes (e.g., consolidation and more efficient servicing plans), helping reduce peak-hour freight pressure while improving operational feasibility for operators and receivers.

In São Paulo, the off-hour delivery pilot did not become mandatory, but it helped institutionalise freight within the city administration. In 2015, OHD became a formal city programme, and the Secretariat of Transport created a dedicated Division of Freight Transport.

Paris offers another useful example. In the early 2000s, the city created a small, dedicated freight team in response to growing dissatisfaction among freight operators and the need for more structured dialogue on urban logistics. This led to the Freight Charter in 2006, later revised into a broader sustainable logistics framework, and helped anchor freight issues within municipal policy. Paris also maintains regular dialogue with the sector through a partner committee that meets twice a year and brings together around 150 participants from public and private organisations. This arrangement combines policy coordination, stakeholder engagement, and the gradual build-up of institutional expertise on urban freight.

Basic regulation of freight movements : *allocating street space and time*

Historically, urban freight regulation has tended to be enacted through the prism of space or public realm management, rather than through systemic policies. Local authorities typically intervene through traffic and parking powers to manage where, when and how delivery activity can take place. The goal of such policies is to reduce congestion, minimise safety risks and public nuisance, and rebalance the use of scarce curb or road space.

Such policies can combine:

Access and circulation rules

Vehicle type restrictions, weight/size limits, route constraints, delivery time windows, and area-based restrictions for certain types of vehicles such as heavy-duty trucks in city centres. Low Emission.

Loading/unloading management

Designation of on-street bays, rules on eligibility and use, and maximum dwell times. Capping delivery times when using on-street loading/unloading bays is a common way of regulating delivery stops. Most freight activities are allocated 20 to 60 minutes, with 30 minutes generally being the norm.

These measures are often straightforward to implement, but their effectiveness depends on spatial planning, enforcement capacity, and the availability of credible alternatives. For example, off-street loading, adapted delivery schedules, or nearby consolidation options can help logistics delivery actors coordinate their activities when faced with other access or circulation rules.

However, weak spatial planning or enforcement can lead to systematic misuse (or underuse) of loading space, thereby impacting policy credibility. In New York City, efforts to introduce "microhub" parking zones to transfer deliveries from trucks to lighter modes have faced implementation challenges. Delivery drivers often misuse these spaces or leave them vacant, and double parking remains common.

Tightening environmental requirements: *LEZ/ZEZ and freight-responsive urban pricing*

A more advanced regulatory approach moves beyond managing access and stopping rules and instead sets explicit environmental requirements for vehicles, along with pricing measures, to accelerate fleet renewal. Urban tolls, low-emission zones, or congestion pricing are examples of this type of regulation.

Urban tolls offer a major opportunity to "fine-tune" urban freight transportation behaviour: tolling allows different pricing by time (off-peak versus peak hours), day, vehicle type (clean vehicles), and vehicle size or tonnage.

There are few practical cases. The most famous city toll is Singapore's Electronic Road Pricing (ERP) system, in place since 1998. Trucks are charged a congestion fee which is 1.5 times that of passenger vehicles. The London congestion charging system only covers parts of the city centre. Commercial vehicles pay the same amounts as private vehicles, due to a two-year negotiation that took place before the implementation of the congestion pricing scheme (carriers' organisations argued that trucks and vans should not pay at all as there is no alternative to using a road vehicle; and city authorities claimed that freight vehicles should pay more than cars as they contribute more to negative impacts on the environment and road damage). A compromise was then agreed upon. 'Area C' in Milan, Italy, serves both as a Low Emission Zone and a pricing system. There are also truck tolls in Scandinavia (Stockholm and Gothenburg, for example). In Switzerland and Belgium, truck pricing schemes also apply to urban streets (only in Brussels in Belgium; in all cities in Switzerland).

Alongside pricing, many cities are introducing environmental access regimes that restrict which freight vehicles can enter defined urban areas. Low-emission zones (LEZs) typically ban the oldest and most polluting vehicles and are primarily designed to reduce local pollutants such as NOx and particulate matter, rather than CO_2. Compliance is commonly defined through manufacturing-based emission classes (e.g. Euro standards[1]). Zero-emission zones (ZEZs) go further by requiring zero tailpipe emissions for vehicles entering the zone-often with phased timelines and differentiated requirements by vehicle type.

The London Low Emission Zone, in place since 2008, illustrates a metropolitan-scale scheme covering both heavy goods vehicles (trucks) and light commercial vehicles (vans) across Greater London, with compliance monitored through automatic number plate recognition and penalties. Several European cities have also announced or begun implementing ZEZ trajectories, including large Dutch cities, with phasing organised from 2025 to 2030 by vehicle category. In practice, LEZ/ZEZ schemes work best when they combine predictable phase-in schedules, credible enforcement, and parallel measures that make compliance feasible for operators.

As access requirements tighten, cities often need to complement restrictions with fleet-transition support packages, notably charging availability, targeted incentives, and workable operating conditions for carriers, so the shift to cleaner vehicles is achievable not only for large fleets but also for smaller operators and subcontractors.

1. Euro Standards : European standards setting emission limits for local pollutants from new vehicles sold in the European Union. The first Euro standards (Euro 1) came into effect in 1992 ; the standard currently in force is Euro 7 (since 2024).

Making fleet electrification workable: *enabling conditions and multi-level regulatory signals*

In practice, "workable operating conditions" means ensuring that the transition is compatible with day-to-day delivery operations: reliable access to charging at the right locations and times, curb and access rules that do not penalise compliant vehicles, and cost and contractual conditions that allow carriers-especially smaller firms and subcontractors-to invest without undermining service reliability. Shenzhen's approach in the 2010s clearly illustrates how cities can operationalise this enabling agenda (Liu et al., 2020). By 2019, Shenzhen had deployed around 70,000 electric logistics vehicles (including 24,000 vans, 6,000 pickup trucks, and 40,000 small trucks), supported by a four-fold package that combined public charging deployment, kilometre-based operating subsidies, road and street privileges, and measures to address electricity and parking costs (Liu et al., 2020).

Other regulatory levers operate at different levels of government. At the city level, public procurement and fleet mandates can create market signals and aggregate demand: New York City's Executive Order 53 (2020) set a pathway for the municipal fleet across the city's agencies to become 100% electric by 2040. At the national or supranational level, CO_2 standards for trucks and vans can accelerate manufacturer-side transformation by requiring reductions in average emissions of new vehicles entering the market, including through EU regulations. In the United States, California's Advanced Clean Trucks (ACT) regulation (adopted by the California Air Resources Board in 2020) requires an increasing share of zero-emission heavy-duty truck sales, starting with the 2024 model year. These multi-level measures matter for cities because local access regimes and incentives work better when they align with broader regulatory signals that shape vehicle supply and costs.

Securing space for logistics: *planning, zoning and limiting logistics sprawl*

Spatial planning has become a core instrument for managing urban logistics as demand for warehouses, logistics parks and proximity facilities rises, forcing urban administrations to accommodate these assets while limiting land-use conflicts and externalities. In practice, this responsibility spans three complementary planning levels:

- At the regional level, Development of regional master plans that include logistics activities. Planning and investment in business parks, logistics parks, and economic activity zones that house numerous logistics facilities are integral to regional logistics planning.
- At the metropolitan, urban mobility plans (see above) can also promote a more coordinated spatial organisation of logistics facilities within an urban area by avoiding strictly municipal decisions on the location of warehouses, thereby counteracting the phenomenon of "logistics sprawl."
- At the urban level, zoning ordinances organise the rules (siting, architecture, landscaping, safety) for the construction of logistics facilities as well as the inclusion of off-street loading areas.

Cities can also mobilise their property and procurement tools by issuing tenders that grant access to public or semi-public spaces for urban logistics uses, including

the repurposing of underused assets such as petrol stations or parking facilities. Paris illustrates an assertive "logistics urbanism" approach: since 2000 the municipality has sought to reintroduce logistics facilities within the city to support consolidation and reduce last-mile distances, notably through its 2024 zoning ordinance, which structures a "zone of major urban services" to anchor large terminals and multi-storey "logistics hotels" (with a first logistics hotel inaugurated in 2018 near Porte de la Chapelle) and identifies around 150 "logistics perimeters" where new developments must integrate a logistics function. In London, the Cross River Partnership similarly identifies potentially available "urban logistics hubs" and "micro logistics hubs" across central London that could be useful for logistics operators.

Urban mobility plans: *integration of logistics*

Integrating logistics into urban mobility plans is a key element of the way governments can better manage urban logistics. An important part of that effort is the establishment of a robust diagnostic. Collecting detailed information on freight movements and logistics facilities is part of that effort. Another part of a transport plan includes regulations and soft measures, often discussed within freight forums.

At the European level, Sustainable Urban Mobility Plans (SUMPs), notably through specific Sustainable Urban Logistics Plans (SULPs), have been standardised, and guidelines are provided for cities willing to engage in transport and logistics planning. For the European "urban nodes", SUMPs are required. They integrate freight and logistics as activities that deserve attention together with other transport activities and services (service trips, passenger transport). These plans are designed at a metropolitan level (as opposed to strictly local or municipal), which can facilitate operators' adaptation at a macro level.

Managing the curb for deliveries: *design, enforcement and digital control*

Curbside management - the management of the public space between the street and the sidewalk - has become a practical lever for cities to accommodate freight and delivery operations in dense areas. Municipalities routinely designate on-street loading and unloading areas in a wide range of formats, yet these spaces are often loosely enforced and heavily contested, leading to frequent misuse for non-delivery purposes such as short shopping stops, extended parking by service vehicles, long-term parking by adjacent businesses, or occupation by street vendors.

In response, cities are experimenting with digital management to protect delivery functions and improve turnover:digital tools increasingly structure access and compliance. Barcelona has managed standard on-street delivery areas digitally since 2016, requiring commercial drivers to use the SPRO app when stopping to load or unload (see the relevant case study). In Seattle, the Urban Freight Lab - a partnership between the city, universities and operators - tests innovative configurations for loading and unloading facilities. The most advanced approaches move towards "smart" and even virtual delivery zones, where delivery space is defined through digital geo-fences rather than physical markings, allowing locations and rules to shift dynamically in response to city constraints such as road works or events that temporarily increase delivery demand.

Shifting deliveries in time

Night deliveries, or rather late evening, are an important way forward in urban logistics optimisation. They have been tested and analysed for developing countries' situation by Dias et al. (2019). Logistics operators are more in favour of night operations, but receivers are more reluctant. Security issues (attacks and thefts) arise in some neighbourhoods. Early morning deliveries are more secure although less accepted by residents because of noise.

In New York City, the municipality enforced an original scheme in the 2010s (Holguin-Veras, 2018): it paid subsidies to retailers and restaurants that accepted deliveries outside normal business hours. After this initial phase, the city relaunched the scheme in 2024[2]. In Sao Paolo, the off hour delivery pilot was quite successful and adopted as a formal city program (see the case study).

The Dutch PIEK (Dutch word for peak noise) program implemented a label for silent urban logistics and the manufacturing of silent delivery equipment and vehicles.

From pilots to scale: *innovation support and market uptake pathways*

Some cities have set up innovation agencies with active strategies for urban logistics. Paris&Co (the City of Paris's regional innovation agency) created an incubator for urban logistics start-ups, Rolling Lab based at Chapelle International (an urban logistics hub) in Paris. Transport for London (TfL) has launched its London Freight Lab, which began with an Innovation Challenge bringing together hundreds of start-ups and SMEs in urban freight tech.

2. https : //www.nyc.gov/html/dot/downloads/pdf/off-hours-delivery-overview.pdf

Urban logistics as a public service: *essential flows, resilience and service gaps*

Public administrations already organise certain urban freight flows, with waste collection as the most obvious example, with other activities like recycling following. In many developing cities, a significant share of these activities remains informal, and could benefit from professionalisation.

In some extreme cases (pandemics, geopolitical disruptions and wars, climate events), local, regional or national governments may step in to directly manage urban logistics. In Tokyo, for example, some warehouses have been designated as emergency shelters in a crisis that requires protecting the population. In the City of Paris[3] several underground urban warehouses have been labelled as refuges in disaster scenarios.

In less extreme cases, local governments may also intervene where private urban logistics services are insufficient or fail to meet public needs. French law goes particularly far in this regard, allowing municipalities to organise public freight transport and urban logistics services 'if private services are insufficient'. This provision is unique in Europe, allowing local authorities to subsidise and regulate a shared delivery service in a city centre (for example), notably using electric vehicles.

3. The City of Paris zoning ordinance is remarkable (see section 3.3.5).



Tokyo
Photo: SeanPavone

The different levels of governance: from local to national

Several institutional levels govern urban freight and logistics, using the tools identified above. In general, federal and state roles over local municipalities are stronger in the South than in the North.

Level	Integrated alliances, federal, national level	Regional / state / provincial level	Metropolitan level	Municipal level	Neighbourhood level
	Examples: • Brazil • European Union and EU member states • India • USA	Examples: • 'Entidades federativas' (federal entities) in Mexico • German 'Länder'	Examples: • Ciudad de México • Grande São Paulo • Greater London • Lagos City	Examples: • Bangkok • Dakar • City of Paris • Medellín	Examples: • Paris arrondissements or London boroughs • Bairros and favelas in São Paulo • Distritos of Lima • Mexico City – Centro Histórico
Common types of interventions	• Freight vehicle manufacturing standards (NOx emissions, PM emissions, CO2 emissions). • Inter-state legislation (road safety, data privacy, freight transport market entry, etc.) • Federal/national truck pricing schemes • App-based instant delivery • Cross-border parcel transport regulation. • Delivery drone regulation • Federal/national strategy for disaster logistics • Management of geopolitics impacts on ports, cross-border e-commerce, etc.	• Regional highway management • Regional freight and logistics strategies and master plan • Regional truck pricing schemes. • Fleet decarbonisation incentives and vehicle renewal programmes • Regional charging and alternative-fuel infrastructure planning • Coordination of municipal access and freight regulations • Location and planning of logistics parks and consolidation facilities	• Sustainable Urban Logistics Plans • Low Emission Zones • Zero Emission Zones • Data collection and modelling • Delivery drone authorisation • Zoning ordinances • Congestion pricing • Disaster logistics preparation	• Freight forum management • On-street loading/unloading zones • Public procurement: inclusion of rules favoring high quality logistics providers • Off-hour delivery schemes • Delivery time windows • Possible: low emission zones, congestion pricing, zoning ordinances, data collection.	• Loading/unloading areas' design • Public parcel locker location • Pilots for testing proximity hubs, microhubs for ecommerce. • Community organisation for healthy food supplies, waste collection, home deliveries for the elderly, etc. • Community organisation for delivery workers • Community organisation for residents in case of a major logistics development.
Global South specificities	Stronger powers in the South at the national or federal level, especially on the most important/capital city. Example: investments in large ports, dry ports, business parks, free zones ; investments in major infrastructure ; main regulation of truck and commercial traffic	Important coordinating role where metropolitan governance is fragmented and municipal capacities are uneven; particularly relevant for freight corridors, logistics parks, wholesale markets and infrastructure spanning several jurisdictions. Mandates and resources may, however, be limited or overlap with national and local authorities.	Metropolitan areas in the global south are often merged with municipalities/ cities and are more integrated than in the north	Cities in the global south are usually larger and more integrated than in the north (cities are often equivalent to large metropolitan areas). They have less regulatory power than in the North.	Highly relevant in dense historic centres, market districts and areas with constrained street networks. Neighbourhood-level measures can accommodate strong variations in street capacity, commercial activity and logistics practices within the same city. They may also provide a pragmatic way to regulate freight progressively, rather than imposing uniform city-wide restrictions.

Key recommendations

This section distils the previous definition, diagnosis and governance review into a targeted set of priority actions. It then presents implementable, sequenced recommendations, linking each to the enabling conditions (institutional capacity, stakeholder dialogue, data, and enforcement) required for replication in Global South contexts.

Logistics can no longer be framed as a purely private, business-led matter. It is a critical backbone of the urban economic system shaping how reliably goods reach households and firms, how efficiently commercial districts and markets are supplied, and how smoothly production and services operate.

When logistics is poorly managed, the impacts quickly spill over beyond individual companies, translating into higher system-wide costs and prices, loss of productivity, unstable supply of essential goods, and mounting pressure on already constrained urban space. In dense cities, these dysfunctions also manifest as negative externalities that become public concerns: congestion, air pollution and rising GHG emissions, poor labour conditions, safety risks, and conflicts over curbside and land use.

A systemic approach is needed because logistics performance is not driven by a single lever - or by a single sector - but by how multiple components function together and interact. Focusing on freight transport alone, or on isolated operational measures, fails to address the broader set of conditions required for efficient logistics systems. These include infrastructure standards and access rules, service organisation, information flows, and day-to-day coordination between actors. In this sense, logistics should be understood and managed as a multi-dimensional ecosystem, where progress depends as much on the quality of interfaces and cooperation between stakeholders as on the performance of any individual operator or mode.

This underlines the essential role of public authority leadership in governing urban logistics systemises. The role of government is not to substitute private initiative, but to provide strategic direction, establish an organising framework, and enable collaboration across a fragmented landscape of actors and interests. By convening stakeholders, aligning rules and investments, and evaluating the trade-offs in limited urban space, public authorities can ensure that logistics delivers public value-reliability, safety, reduced environmental impacts and fairer access-alongside economic performance.

Sustain awareness and capacity-building so urban logistics is consistently integrated into sustainable urban mobility agendas

National authorities, city networks, and development cooperation actors should sustain and scale their advocacy and capacity-building efforts to ensure urban logistics is systematically integrated into urban agendas, particularly sustainable urban mobility policies and planning processes. This requires moving beyond general messaging to targeted support for decision-makers and practitioners: clear framing of logistics issues, practical entry points for integrating them into mobility plans, and peer-learning formats that make the topic tangible for both public and private stakeholders.

Core output

A sustained capacity-building process (knowledge materials, training and peer-learning activities) that provide a step-by-step guide to support decision-makers and practitioners in integrating logistics into mobility planning and implementation.

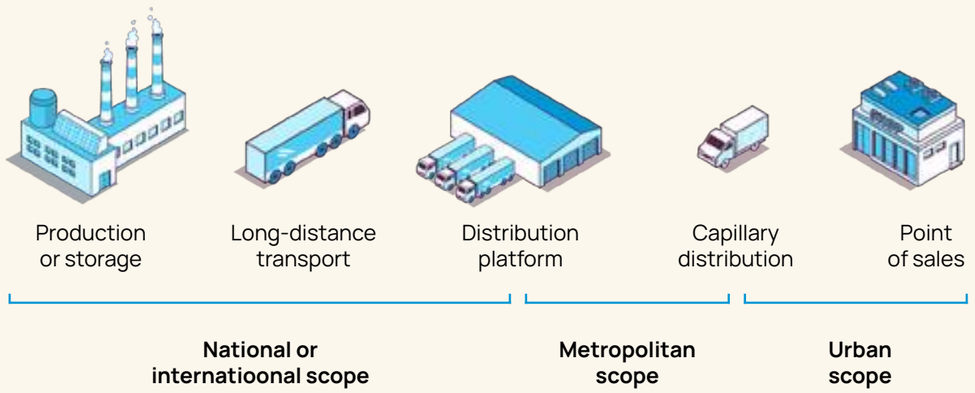
Establish a dedicated public Urban Logistics Task Force to lead coordination

Cities should establish a dedicated public task force responsible for metropolitan and urban logistics, with a clear mandate to lead, coordinate and sustain action over time. This function should sit within (or be formally connected to) the core urban governance system so it can bridge transport, public space management, land-use planning, environment, economic development, and enforcement.

The task force should serve as the city's organising interface with the full ecosystem of actors shaping urban logistics, including formal and informal operators; shippers and receivers; market and terminal managers; platforms; business associations; and worker representatives. By convening stakeholders, aligning roles and responsibilities, and ensuring coherent implementation across the different components that determine logistics performance, the task force helps translate strategic intent into day-to-day operational change while safeguarding public value alongside economic performance. The task force should coordinate with other public stakeholders, such as ministries, agencies, and transport and urban departments.

The Urban Logistics Task Force should operate from the metropolitan scale down to proximity areas, ensuring continuity between strategic planning and street-level delivery conditions.

Figure 12 **Territorial scales of a logistics chain**



Source: CAF (2019) Estrategia CAF en Logística Urbana Sostenible y Segura. Caracas: CAF, p45

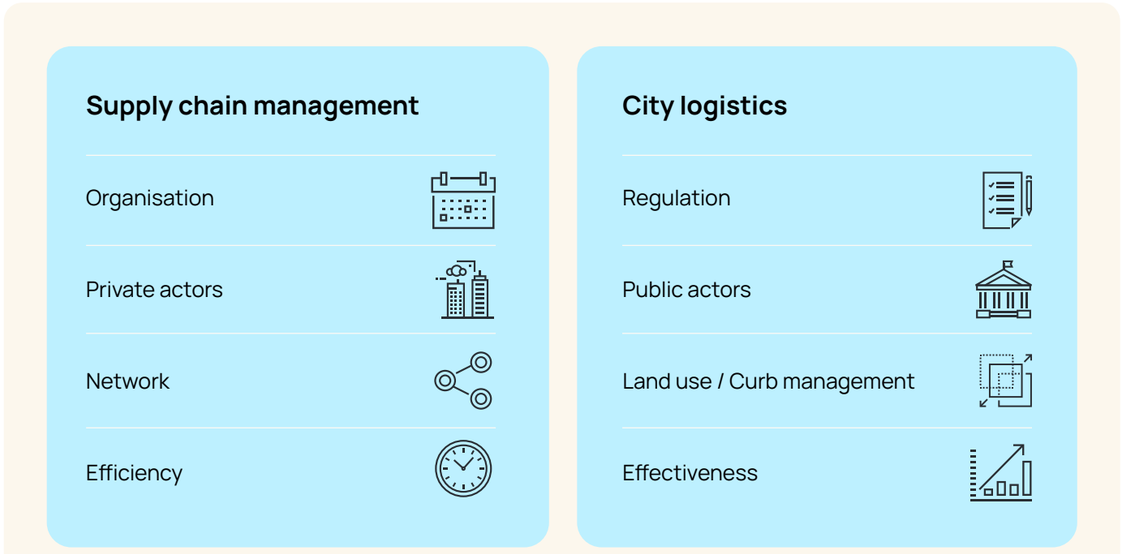
Core output

A formally mandated Urban Logistics Task Force with defined roles and coordination routines, resourced with adequate staff, budget and operational tools.

Establish a public–private Urban Logistics Consultative Forum as a problem-solving platform

Urban logistics brings together actors with different incentives, time horizons, and accountability frameworks: cities prioritise safety, air quality, public space management, and equity, while operators prioritise service reliability, costs, asset utilisation, and contractual constraints. These objectives are not always aligned, and misunderstandings can quickly lead to low compliance, weak enforcement, or technically sound but operationally unworkable measures.

Figure 13 **Global supply chain and city logistics differences.**



Source: Notteboom, Notteboom, Pallis, A. and Rodrigue, J.-P. (2026). Port Economics, Management and Policy. Routledge.

The task force provides direction and ensures delivery across departments, while a consultative forum structures dialogue and co-design with stakeholders, helping turn policy intent into workable measures.

A public–private logistics forum provides a structured space to surface issues early, share constraints transparently, and co-design workable solutions through an ongoing, collaborative approach.

Prepare the forum through stakeholder consultations and network mapping

Ahead of the first meeting cycle, the task force should :

- identify the stakeholders and the already consolidated business units and their level of interest and engagement in the reform ;
- consult stakeholders to understand their structure, representation, context-specific stakes and expectations; and map the logistics network to clarify the structure of service provision, key origin–destination pairs, main nodes/ hotspots, and levels of accessibility across the urban area.

Set up a Consultative Forum (geared towards problem-solving, not symbolic consultation)

The consultative forum should be a problem-solving forum where private stakeholders, represented through consolidated organisations where possible (formal and informal), present their challenges to government or authorities to discuss and find solutions constructively. The forum should be chaired independently to ensure that no political or private agenda is pursued.

Organise regular meetings and a clear work programme

The forum should meet at least twice a year, with additional meetings as needed to prepare major reforms or pilots. Each meeting should be decision-oriented and conclude with a short set of agreed outputs, for example: a prioritised problem list and an agreed sequence of solutions; the design of a pilot with clear scaling criteria; or a compliance and enforcement pathway for a new measure (including timelines and the conditions that make compliance feasible).

Use the task force to mobilise working groups and deliver implementable actions

Between forum meetings, the task force should organise reflection and working groups with identified stakeholders to co-develop tailor-made actions, particularly their scope, content, implementation steps, monitoring arrangements, and expected level of stakeholder involvement. Organise regular working meetings to progress actions at different stages, with participation adapted to the topic and expected outputs. These working groups should also provide a practical basis for public–private collaboration where relevant (e.g., data sharing protocols, curb management arrangements, identification of consolidation sites, or solutions to improve charging access and operating conditions). Set up and mobilise a reflection and working group dedicated to discussing and addressing gender challenges and inclusivity throughout the process.

Core output

A functioning consultative forum convened at least twice a year, with documented decisions and active working groups delivering implementable action notes.

Define an integrated and sequenced urban logistics strategy, anchored in urban and mobility planning

In many Global South cities, urban logistics is still addressed through fragmented measures, such as ad-hoc traffic restrictions, isolated pilots or reactive enforcement, without a shared diagnosis of freight demand, critical nodes (markets, gateways, warehouses) and the operational requirements of last-mile delivery, including essential supply chains such as food distribution. This fragmentation is compounded by blurred mandates and accountability, data scarcity, and political economy constraints, which together produce a persistent mismatch between logistics needs and urban space allocation. Cities should therefore adopt an approach that is both strategic (long-term direction and priorities) and operational (deliverable measures, enforcement, investment and monitoring), explicitly tied to mobility planning, land-use regulation and urban development.

Define a strategic–operational framework and embed it in core planning instruments

Cities should formalise an urban logistics strategy (or dedicated chapter) within the main mobility plan (e.g., SULP or equivalent) and connect it to land-use and urban development tools. The strategy should set out:

- a clear diagnosis ;
- priority objectives (efficiency, safety, air quality and decarbonisation, affordability of essential goods, decent work) ;
- a sequenced action plan.
- an implementation and monitoring framework.

Build a robust diagnosis that links flows, places and constraints

The diagnosis should treat urban logistics as a whole system, covering the full chain from gateways and storage to distribution, last-mile operations and reception conditions, and the interactions between formal and informal arrangements. It should also identify stakeholders and representation structures, building on the stakeholder identification and engagement process set out in the previous recommendation (consultative forum and working groups). At minimum, the diagnosis should combine:

- mapping of logistics-intensive generators and receivers (markets, retail clusters, hospitals, industrial areas) ;
- identification of critical nodes and interfaces (gateways, terminals, consolidation points) ;
- a basic flow picture (key OD pairs, peak periods, dominant vehicle types) ;
- an assessment of binding constraints (curb space conflicts, access bottlenecks, safety hotspots, enforcement gaps).

Treat food distribution and other essential supply chains explicitly to avoid policies that unintentionally undermine urban affordability and access.

Align logistics with mobility and urban planning decisions

Integrate the urban logistics strategy into mobility planning and align it with broader urban planning and land-use objectives, so logistics requirements are addressed alongside housing, economic development, public space, and environmental priorities. Rather than “overriding” urban planning logics, this alignment should ensure that logistics considerations are consistently reflected in land-use and development choices-clarifying, at a high level, where key logistics functions can be accommodated within the urban area and how planning and development instruments will support this direction, in coherence with the wider urban and land use planning strategy.

Clarify mandates and implementation pathways

A strategic document only delivers results if responsibilities are clear. Cities should set up (or confirm) a logistics task force as the lead authority for urban logistics (cf. Establish a dedicated public Urban Logistics Task Force to lead coordination), establish coordination with land-use/planning departments, and translate the strategy into implementable instruments: regulations, procurement and concessions, targeted investments, and enforcement protocols. Where political sensitivity is high, early engagement with carriers, retailers, and receivers is essential to avoid stalemates and ensure measures are workable and enforceable (cf. Establish a public–private Urban Logistics Consultative Forum as a problem-solving platform).

Use the strategy to sequence actions and scale what works

The strategy should function as an “action backbone”: pilots should be designed with scaling potential in mind, and short-term operational fixes should be linked to medium-term investments. Frame longer-term regulatory trajectories (e.g. cleaner fleets) as multi-year pathways with clear milestones and predictable phase-in schedules, recognising that compliance, investment cycles, and enforcement capacity take time to mature. This provides continuity between planning and delivery and reduces the risk of one-off measures that do not accumulate into system change.

Core output

A statutory urban logistics strategy (or dedicated mobility-plan chapter) with objectives, a sequenced action plan, a coordinating authority and a clear implementation plan.

Safeguard and programme logistics space across planning scales

Urban logistics requires physical space, from warehouses and logistics parks to proximity facilities. However, these spaces often compete with higher-value uses. They are displaced to more peripheral areas, increasing delivery distances to the city centre and generating negative externalities such as more km travelled, higher fuel prices, GHG emissions, and ultimately higher delivery prices borne by consumers. Cities should therefore safeguard and programme logistics space as a strategic urban resource, using planning and development instruments across scales.

Secure logistics space or land at three complementary planning levels

- At the regional level, development master plans should identify and protect strategic logistics areas (business parks, logistics parks, economic activity zones) and guide investment decisions that structure regional distribution and gateway access.
- At the metropolitan level, metropolitan mobility and land-use planning should steer the spatial organisation of logistics facilities across jurisdictions and counter "logistics sprawl", so that warehouse location outcomes are not driven solely by fragmented municipal decisions. Cities like London have developed industrial land policies for this purpose as part of the wider London Plan Guidance, updated every 5 years, which gives Greater London local authorities clear, actionable mandates for industrial land management and coordination.
- At the local urban level, zoning ordinances can help translate this guidance into enforceable rules for logistics sites. For example, this can be done by systematically requiring off-street loading capacity in developments where delivery activity is structurally significant. Safeguarding logistics land should prioritise developing consolidation sites that can act as urban consolidation centres (UCCs), distribution centres, or shared transhipment facilities, helping reduce last-mile distances and improve load factors.

Mobilise public assets and procurement to unlock space

Cities should complement regulation with an active land and asset strategy, using tenders, concessions, or temporary occupancy agreements to make public or semi-public spaces available for logistics uses, including repurposing underused assets such as petrol stations, abandoned building sites, or parking facilities, where appropriate.

Core output

A safeguarded logistics land programme (mapped priority sites + zoning/development tools) enabling consolidation functions (e.g., UCCs) and proximity logistics.

Manage public space for deliveries through structured curbside governance and enforceable operating rules

Even when logistics land is protected, and facilities are well located, day-to-day urban logistics performance depends on how public space design accounts for delivery flows (especially in denser parts of a city) through access, stopping, and loading rules. Cities should manage street operations as a practical policy domain, with rules and design principles that reduce congestion, safety risks and nuisance while preserving reliable supply, including for essential flows such as wholesale distribution.

Allocate and manage curb space with clear, enforceable operating rules

Cities should allocate loading/unloading space where delivery demand is structurally high (commercial streets, markets, mixed-use districts) and define simple operating rules: eligibility, time windows where relevant, and maximum dwell times to ensure turnover. Design measures for enforcement, with clear signage, consistent rules, and practical sanctions.

Design delivery space to minimise misuse and support turnover

Physical layouts should make the intended use self-evident and discourage long-term or non-delivery parking. Where conflicts recur, cities can test dedicated layouts (including micro-hub-type configurations) to improve turnover and reduce spillovers onto sidewalks and traffic lanes.

Enable efficient small modes for proximity deliveries

Street design and access rules should actively facilitate space-efficient delivery modes, such as cargo bikes and small utility vehicles, which are often better suited to short-distance deliveries in dense areas. This requires dedicated road infrastructure (such as cycle lanes), safe operating conditions, practical stopping space close to delivery points, and access arrangements compatible with constrained neighbourhood networks.

Core output

A signed and enforceable loading/unloading scheme (locations + operating rules + enforcement protocol), accompanied by dedicated infrastructure, enabling reliable deliveries by efficient small modes.

Beyond governance and planning instruments, logistics performance also depends on a set of cross-cutting workstreams that require sustained implementation efforts. For many Global South cities, priorities typically include gateway corridor governance, fleet transition packages, skills development, the integration and upgrading of informal delivery systems, and the organisation of circular and reverse logistics.

Strengthen Integrated Gateway Corridor Management and Governance

City authorities should treat gateway logistics as both a critical network function that keeps flows reliable and efficient (nodality) and a territorial system anchored in urban planning and local economic development (polarity). For cities in the Global South, this translates into two priority recommendations:

Adopt corridor-based urban logistics planning	Identify, map, and actively manage the main port–logistics zones–wholesale markets–urban distribution corridors as urban logistics systems-not only as national links. Use this corridor lens to set and enforce consistent measures on routing, curb/loading management, access regimes and time windows, traffic enforcement, and safety interventions in bottleneck areas.
Establish integrated multi-level governance to align interests	Create a formal coordination mechanism between port authorities, customs, national corridor agencies and municipal departments (traffic management, land-use planning, enforcement). This interface should align decisions on access conditions, operating hours, control procedures, investment priorities, and land allocation so corridor performance and urban liveability objectives are managed consistently across scales.

Core output

A formal multi-level corridor governance mechanism with a shared action plan aligning port/corridor stakeholders or agencies and city departments on access, operations and priority investments.

Supporting the transition of vehicles in an incentive-based way

To incentivise the transition of urban logistics vehicles in Global South cities, policies should be designed as a **sequenced package** that reduces upfront costs, de-risks investment, and progressively tightens requirements as infrastructure and market readiness improve.

01	Prioritise incentives for low-carbon (electric), **high-utilisation light fleets** (2/3-wheelers, Light commercial vehicles) before heavy-duty segments, to maximise early uptake and local air-quality benefits.
02	Combine **time-bound purchase incentives** (rebates, VAT/import-duty relief) with **accessible finance** targeting micro-operators and informal fleets.
03	Implement **replacement** schemes tied to verified de-registration of the oldest, most polluting vehicles.
04	Align taxes/fees with emissions and vehicle age, and remove fiscal distortions that incentivise older, higher-emitting imports.
05	Roll out charging/swapping first at logistics nodes (depots, markets, consolidation hubs) and adopt a clear strategy (depot charging, public fast charging or swapping model ?). Public policy can use PPPs to scale faster: cities provide land/permits and service standards (uptime, safety, transparent pricing) while private operators invest and run infrastructure.
06	Incentivise consolidation and higher load factors (micro-hubs, managed loading) and, where street conditions allow, higher-capacity vehicles to cut vehicle-kilometres.

Overall, the most effective incentive strategy is a balanced package that reduces upfront costs through subsidies and financing, deploys enabling charging and energy infrastructure, and provides clear, phased regulatory signals, while including small operators and using pilots to de-risk investment so the transition can scale without disruption or unfair impacts.

Core output

A sequenced fleet transition package combining targeted incentives and finance, charging rollout at logistics nodes, and a clear phased regulatory trajectory.

Build national skills pipelines for logistics, seize the digital transition, and strengthen public-sector capability

National authorities should address three closely linked capacity challenges: meeting the growing need for qualified logistics personnel; seizing the sector's digital transformation; and upgrading the competencies of public stakeholders so governance, regulation, and implementation can keep pace with operational change. Many of these skills will be deployed in urban logistics and last-mile operations, where reliability and compliance requirements are increasingly demanding.

Structure training pathways for high-value and system-critical roles

Training systems should prioritise roles that are scarce in both volume and quality and that directly condition reliability and safety, including drivers, dispatchers, warehouse supervisors, route planners, fleet coordinators, and compliance-oriented administrative staff. Programmes should be anchored in recognised qualifications with specialised tracks for operative roles, administrative logistics, supervisors, and managers, so skills development translates into improved service performance rather than short-term labour absorption.

Co-design curricula with the private sector to close the "translation gap"

Co-develop curricula with consolidated industry organisations, major employers, and professional bodies to ensure training reflects real operating conditions, technology use, and compliance requirements. Build in structured workplace learning (apprenticeships/placements), agreed competency standards, and credible certification from the outset.

Embed digital competencies as a core requirement, not an add-on

Mainstream digital literacy across training streams, reflecting the sector's growing dependence on IT-enabled coordination and data-driven tools (dispatching, routing, tracking, customer interfaces). Training design should remain realistic about enabling constraints in low- and middle-income contexts, while ensuring that digital uptake does not concentrate capability only in a small share of firms.

Strengthen institutional capability among public stakeholders

Training efforts should include targeted capacity-building for public and para-public actors involved in logistics governance and planning administrations, enforcement bodies, procurement and contract management units, and agencies overseeing implementation-so that public decision-making can match the sector's pace of change and support coherent delivery.

Link skills investment to inclusion and retention

Training pipelines should incorporate enabling conditions and targeted pathways for under-represented groups, especially women, while recognising that retention also depends on job quality and safety. Workforce development efforts accumulate only when skills match credible career pathways and workable conditions.

Core output

A national logistics training programme that upgrades both industry skills and public-sector capability, through certified courses co-designed with employers and targeted modules for public officials.

Regulate platform-based delivery through clear market-entry and operating conditions aligned with city objectives

Public authorities can use a combination of regulatory, contractual, and land-use instruments to maintain oversight of rapidly expanding platform-based delivery services. The objective is not to restrict innovation, but to ensure that market entry and operating models remain compatible with mobility, public-space, environmental and labour objectives.

Introduce an operator licensing or registration scheme	Require platform-based delivery companies to obtain an authorisation to operate, subject to minimum requirements on vehicle registration, insurance, worker safety, consumer protection and compliance with local transport rules. A national framework can establish common requirements, while cities retain responsibility for locally relevant operating conditions. For example, Türkiye regulates electronic commerce intermediary service providers through national legislation and implementing regulations (Republic of Türkiye Ministry of Trade, 2024).
Use competitive authorisation where operators make intensive use of scarce public space	Where legally feasible, cities can select a limited number of operators through transparent calls for applications and attach conditions to their authorisation, including fleet size, service quality and public-space fees. Paris applies this approach to free-floating shared bicycles: it selected three operators through a competitive process, with public-space occupation agreements specifying fleet ranges and fees. Although this is not a freight scheme, it provides a transferable governance model for platform-based services using urban public space (Ville de Paris, 2025).
Make data sharing a condition of market access	Require operators to provide standardised, anonymised data on fleet size, delivery activity, vehicle types, origins and destinations, parking or loading activity, and incidents. This would give cities visibility over a rapidly changing sector and support evidence-based regulation.
Set explicit operating conditions for platform deliveries	Permits can specify requirements for vehicle emissions and noise, loading and parking practices, road safety, delivery time windows, use of designated infrastructure, and, where justified, maximum fleet deployment in particularly constrained areas.
Regulate the spatial footprint of platform logistics	Integrate dark stores, micro-fulfilment centres and other instant-delivery facilities into land-use and building-permit frameworks. Cities can define where these facilities are appropriate and impose conditions relating to access, loading space, operating hours, noise and street impacts.
Build review and enforcement mechanisms into authorisations	Use time-limited permits, periodic performance reviews and graduated sanctions, including fines, suspension or non-renewal for repeated non-compliance. This lets regulation evolve as technologies and business models change, rather than locking cities into permanent arrangements.

Core output

A regulatory and authorisation framework for e-commerce and platform delivery operators, combining licensing or competitive tendering where appropriate, operational and service standards, data-sharing requirements, and land-use controls for logistics facilities such as dark stores.

Make informal logistics integration a core pillar of urban logistics strategies, focused on collective upgrading, decent work, and operational gains

As with informal transport improvement policy, reforms to the informal urban logistics sector should be framed as an integration and upgrading process, not an elimination process. The objective is to modernise operations while raising the bar on safety, labour protection, and environmental performance. Hence, improvements in logistics efficiency translate into better working conditions, improved livelihoods, and more reliable urban supply. The city should treat this integration agenda as a key priority of its urban logistics strategy, a long-term initiative, not a marginal add-on, starting with a public–private consultative forum and working groups.

Use representation and collective arrangements as the entry point for reform

Given the fragmentation of informal logistics, integration efforts should start by working with existing representation structures where they exist (associations, cooperatives, market committees, intermediaries) and by supporting the emergence or consolidation of representative bodies where they do not. These collective arrangements provide a practical basis to: engage operators at scale; understand business models and constraints; identify obstacles to upgrading (cost structure, asset access, time constraints, enforcement exposure); and co-design feasible pathways. The consultative forum and technical working groups should explicitly include these representative bodies to ensure those affected negotiate, understand, and own the integration process.

Prioritise work and welfare outcomes alongside operational improvements

Upgrading should target workers' conditions (safety, working time and fatigue, basic protections, facilities, and exposure to road risk) while also delivering operational improvements that stabilise incomes. The point is not only to impose "better standards", but to help operators move away from operating permanently on the margin by improving processes that can reduce costs and increase revenues-better trip organisation, fewer empty runs, improved reliability for customers, and more predictable operating routines.

Provide targeted support programmes for practical skills and "light" digital adoption

Rather than assuming new rules will drive compliance, authorities should implement hands-on accompaniment programmes that build capability where it immediately improves productivity and safety. This can include short, modular training on basic dispatching and routing practices, messaging-based coordination, simple tracking and payment tools, and customer/receiver management, paired with basic digital literacy support. The aim is to capture quick operational gains without requiring full formalisation upfront, and to prevent digital change from excluding informal operators.

Anchor integration in concrete urban functions and spaces to make it tangible

Design integration measures around specific, high-impact segments, market supply and neighbourhood replenishment, waste/recycling flows, or last-mile parcel delivery, where authorities can combine operating rules with practical support (e.g., managed access and loading arrangements, micro-hubs or consolidation points, designated operating spaces). This makes reform visible, allows for staged implementation, and reduces the risk of disrupting essential supply chains.

Treat integration as a long-term programme, not a one-off project

Because informal logistics systems are resilient and adaptive, integration requires sustained effort: iterative engagement, progressive upgrading packages, and continuity in governance. The process should be resourced and monitored as a core component of the broader urban logistics strategy, with clear responsibilities and a stable forum where problems and solutions can be addressed collaboratively over time.

Core output

A national logistics training programme that upgrades both industry skills and public-sector capability, through certified courses co-designed with employers and targeted modules for public officials.

Organise and Incentivise Reuse Flows as a Formal Urban "Reverse Logistics" System

City governments should treat reuse and re-employment flows (repair, refurbishment, redistribution, second-hand sales) as a planned reverse logistics function, not only as a waste issue. This requires enabling collection, sorting and redistribution networks that can "close and slow material loops" while creating local value and jobs.

Some of the main policy measures (focused on incentives) include:

Zone

Plan and zone dedicated circular logistics nodes integrated into urban development plans

Incentivise

Implement economic incentives to make reuse competitive: reduced local fees/taxes for certified reuse activities ; grants or concessional finance for repair/ refurbishment equipments

Mandate

Create predictable "take-back" responsibilities with producers/retailers (starting with high-volume streams such as packaging, electronics, textiles)

Core output

A formal reverse-logistics programme with designated nodes, enabling incentives and clear responsibilities for priority reuse/repair/refurbishment streams.

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MobiliseYourCity is a global partnership supporting cities and countries in developing and emerging economies to turn sustainable urban mobility planning into concrete investment and action. Backed by the European Union, France and Germany, and working with implementing, finance and knowledge partners, it helps members develop investment-ready mobility pipelines aligned with climate ambition, urban development priorities and local needs.

Over the past decade, the Partnership has grown to 82 member cities and 16 member countries, supporting 75 projects across 38 countries, identifying over EUR 30 billion in sustainable urban mobility investment needs and leveraging EUR 4.4 billion for SUMP and NUMP implementation. As it enters its second decade, MobiliseYourCity is shifting from proof of concept to scaled delivery by accelerating implementation, strengthening investment alignment, expanding practitioner knowledge and mobilising broader support for sustainable mobility.