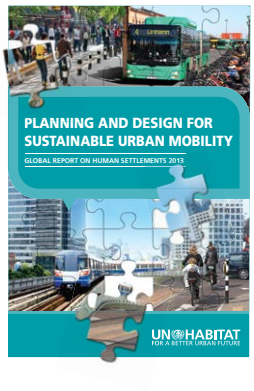


# PLANNING AND DESIGN FOR SUSTAINABLE URBAN MOBILITY

## GLOBAL REPORT ON HUMAN SETTLEMENTS 2013

## Moving Goods in the City: Growing Patterns of Urban Logistics

**The movement of goods must be taken into account when planning urban mobility systems, says the United Nations Human Settlements Programme, UN-Habitat.**

According to the *Global Report on Human Settlements 2013 - Planning and Design for Sustainable Urban Mobility,* goods transport is often neglected or addressed separately during urban transport planning. However, as cities transform in size and form, so too does the business of moving goods effectively without causing environmental damage, negative social impacts, and logistical headaches.

"Providing a single solution applicable to all major cities of the world is impossible given that the geography, history, levels of economic development and government policies of each is different." says UN Under-Secretary-General and UN-Habitat Executive Director, Dr Joan Clos."For citizens and commuters urban density provides benefit and convenience, but can also increase the cost of commercial goods transport. This is why the two must be addressed together during the urban planning process."

Today's high levels of freight distribution traffic and other motorized forms of transport congest the narrow winding streets of some cities built before the advent of the car. Additionally, freight distribution logistics requires a lot of urban space that is hard to acquire in the traditional city center. For example, container terminals and their access ramps, container and chassis storage locations consume a lot of urban space. Faced with a growing distribution problems and the need for space, freight companies in many cities have built intermodal terminals and distribution centres beyond city limits, thus contributing to urban sprawl. All these issues make land-use planning and integration of transport vital for all urban mobility systems.

## Aerotropolis: a new urban form to address logistics problems

The aerotropolis – a logistics hub growing near and around major airports – is a new and growing urban form created to overcome distribution hurdles in the global transport chain. Distribution facilities tend to grow near these hubs, which interface with other transport systems. This new urban form requires lots of space, highlighting the importance of land-use planning, but at the same time such developments have the potential to encourage sustainable development of such outlying areas.

The aerotropolis contains an inner zone of distribution centres, logistics complexes and manufacturers. A ring of office parks, hotels, restaurants, and convention centres, and then a largely residential periphery for employees are another feature. High-capacity highways and rail lines link it to the rest of the metropolitan area.

## Distribution facilities

Once international freight reaches a city, the goods still need to be stored and delivered. The "solution" has been to build distribution centres. However, these are another land consumer due to their one-floor design to house multiple activities . For example, warehousing in such facilities account for an estimated 0.8 per cent of non-agricultural and forestry land in England and Wales.

Logistics zones, sometimes called "freight villages", are even larger areas and are entirely devoted to freight distribution. These are areas of transport, logistics and distribution of goods that should be served by rail, road, sea and air modes of transport. These zones are true villages because they contain hotels, convention centres, restaurants and other everyday services. They exist in Brazil and Malaysia as export-orientated free trade zones that access the global markets through their airports and ports. China's economic zones are similar.

## Logistics sprawl

"Logistics sprawl" is a key trend and the term used to describe the spread of goods transport facilities in metropolitan areas. Severe land shortages in large cities and the large urban renewal projects of the 1960s and 1970s, have been the main forces behind this development. Due to the vast amounts of land required and the need for access to highways, logistics and transport companies closed urban distribution centres in inner-city areas and opened new ones in the periphery.

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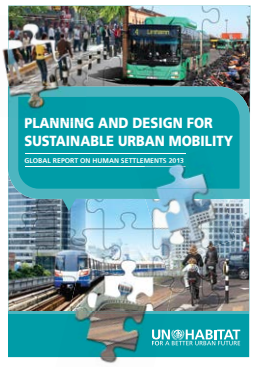


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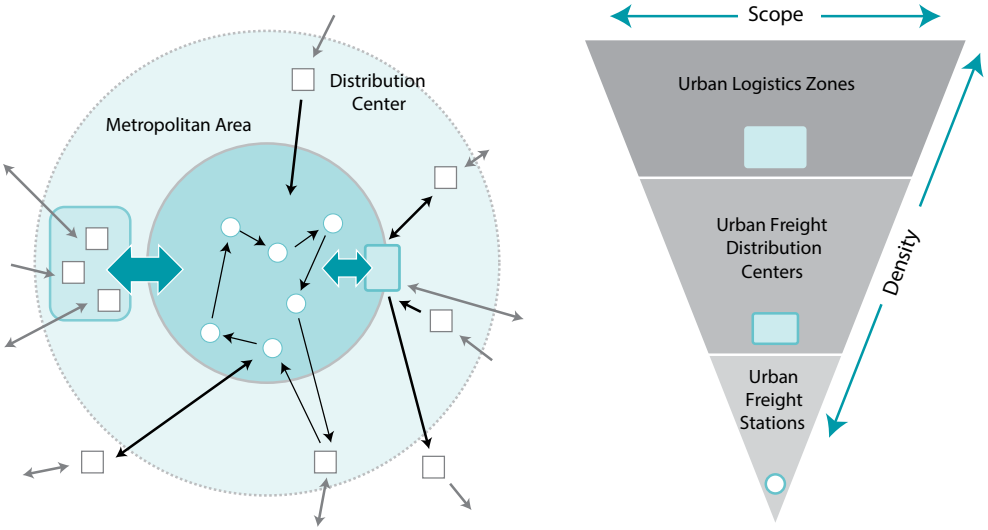
Figure 4.5: **City logistics and land use**




No matter the nature of the urban goods transport trends, modern freight distribution systems (including the so called 'reverse logistics', namely the collection of garbage and materials for recycling) generate major environmental, economic and social and institutional challenges. Urbanization, along with its associated growth in consumption, has now reached a point where a more concerted approach is needed to freight distribution. For this, an understanding of key challenges in urban freight distribution, and the dissemination of practices and methods, is required.

The 21st century city is one of intense people, material and information flows. and, goods transport is a central component of this environment. Until recently goods transport was never at the forefront of the urban planning process. One of the main challenges to urban goods transport today is to balance its efficiency, whilst minimizing congestion, the emission of pollutants, noise and accidents. A move towards so called 'green city logistics has already started in some cities, and is in part encouraged by higher energy costs. Such strategies are mostly centred on the rationalization of deliveries; the development of freight facilities and the use of non-motorized modes of transport.

### Cost of transport around the world

Non-motorized transport refers to the transportation of passengers via human or animal powered means including bicycles, rickshaws, pedicabs, animal-drawn carts and walking.

With animal power being largely a rural feature, the focus in this report is on human-powered modes (bicycles, cycle rickshaws) and walking.

Formal public transport services are those available to the public for payment, run on specified routes to timetables with set fares, and within the context of this report, in an urban area. They may be operated by public or private organizations and cover a wide range of modes, namely bus, light rail (tramways and street cars), metros, suburban rail, as well as waterborne transport (ferries, boats).

Informal (motorized) transport (also referred to as 'paratransit') relies on privately owned vehicles whose

operators often lack necessary permits or do not meet requirements for vehicle size, insurance coverage or driver standards. Even if some operators are fully licensed, they may deviate from routes or charge unauthorized higher fares, as a result of which they are considered informal.

Private motorized transport involves vehicles that are powered by an engine and are used by individuals or private companies to transport passengers. Light-duty vehicles (cars, SUVs, light trucks and mini-vans) and two- or three-wheelers remain the key modes of private motorized transport in urban areas.

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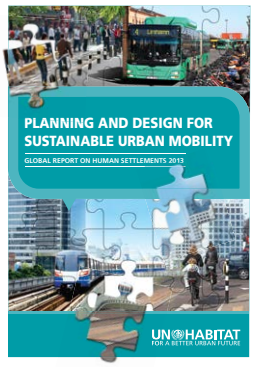


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## GLOBAL REPORT ON HUMAN SETTLEMENTS 2013

Goods transport remains a central element of urban sustainability. This makes it a crucial to consider the role and impact of goods transport in the urban context, if planning accessible mobility for passengers is to be effective. This is especially so, considering the close interactions between urban land-use, urban form and goods transport within an increasingly contested landscape.

## Conclusion

In most cities, the neglect of urban freight distribution and management – both in land-use and transport planning – makes goods transportation a major impediment to sustainable urban mobility. Decisions regarding urban goods transport have, to large degree, been made within the confines of company boardrooms, rather than by urban planners. The business logic of goods transport favours fewer deliveries, with larger trucks, to destinations with larger storage areas. Thus, urban goods transport has been a major driver of urban sprawl. Night or off-peak deliveries, freight stations and consolidation centres that allow shared-use of delivery vehicles, and bicycle carriers suited to the constraints of urban circulation, might be called for.

Table 4.1: **Major actors in urban freight distribution and their land-use handhold**

| Transport sector | Function | Land-use handhold |
|---|---|---|
| Maritime shipping companies | Key actors in global trade, owning fleet assets that are capital intensive. Establish shipping networks composed of a sequence of ports of call. | Limited. Often through parent companies (e.g. terminal operators, third-party logistics providers). |
| Port terminal operators | Operate major port terminal facilities, mostly through concession agreements. Interface between maritime and inland transport systems. | Mostly lease terminal facilities with long-term bails. |
| Port authorities | Manage the port's land and its development, such as leasing terminal facilities. Interact with maritime and inland stakeholders. | Landlords controlling significant parcels of centrally located waterfront real estate. |
| Real estate promoters | Development freight-related activities on their real estate, such as logistics. Lease for distribution facilities. | Various private commercial real estate holdings depending on local regulations. Lease the facilities to private companies such as freight forwarders. |
| Rail and rail terminal operators | Responsible for moving freight inland, from raw materials to containerized shipments. Own and/or operate terminal facilities. | Significant handhold in central areas, including terminals and rights of way. |
| Trucking industry | Carry freight over short to medium distances. Provide and organize road transport services between terminals, distribution centres and final customers ('last mile'). | Limited holdings (warehouses) but heavy users of road and terminal facilities. |
| Third-party logistics providers | Organize transport on behalf of their customers. Contract transport and distribution activities, sometimes with their own assets (e.g. trucking companies, air cargo, distribution centres). | Various, but mostly limited (some can own distribution centres). |
| Air freight transport companies | Provide air transport services for high-value and time-sensitive cargo. | Significant holdings (e.g. distribution centres) near airport facilities. |
| Freight forwarders | Provide services to cargo such as packaging as well as load consolidation (different small loads into one large load). Organize regional and international freight deliveries, either by contracting to transport operators (truck, maritime, rail) or third-party logistics providers. | Significant holdings in logistics zones. Many rent the facilities they use. |

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