Ensuring accessibility and mobility efficiency in low-density areas – new approaches

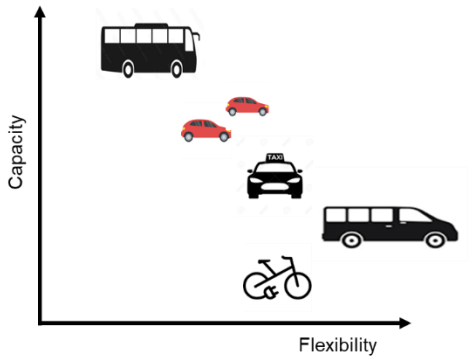
The transport sector was undoubtedly one of the worst affected by the pandemic. To date, most operators continue to report occupancy levels of around 80% of the levels in 2019 - a figure common to many cities and regions with heterogeneous characteristics. While in the cities, public transport has shown some resilience and new forms of micro-mobility have been developed, in rural areas, the decrease in demand has worsened the efficiency of the operation, which was is inherently loss-making. **Innovative and flexible solutions are available to ensure accessibility to under-covered areas.**

Key messages

- Rural areas have specific conditions that require **greater support for achieving efficiency, effectiveness and sustainability in transport** and the **adoption of multimodal and intelligent solutions.**
- **Traditional transport systems seem to be inefficient** in responding to the needs of the population as a whole, and especially those residing in rural areas.
- **Transport on Demand is one of the best studied transport solutions** and there are several proposals to address this problem in an economical and efficient way.

Different approaches for different territories

There are several innovative approaches to adapting supply to demand in lower-density areas. Capacity, frequency, coverage, and land use characteristics are key factors in their suitability. We describe 5 different approaches:



1) Transportation on demand based on local taxis (CIM-RC)
2) Intermodality Train + Electric bike (CM Agúeda)
3) Transport on demand Conventional buses (Extremadura)
4) Transport on demand Car polling lanes (France) ECOV
5) Community Bus Transport (Sweden)

Approach 1 Transportation on demand based on local taxis.

- Transportation on demand based on local taxis on demand.
- Focused on enable an offer in terms of transport services in low-density areas
- Adjusted to the needs of the population and the characteristics of the territory.
- Service has routes, stops, and schedules but with the flexibility to make adjustments in order to give the best response to user needs.

Example: https://www.interregeurope.eu/good-practices/sit-flexi-intermunicipal-demand-responsive-transport-solution
Coimbra, Portugal

Approach 2 Traditional service but condition to demand.

- Environmental and economic efficiency because buses will not run without demand.
- Adapt bus size to actual demand. For example, the use of smaller buses.
- Adjustment of itineraries and timetables to the needs of users.
- Better service management.
- Encourage the use of public transport.

Example: https://www.interregeurope.eu/good-practices/transport-on-demand-for-extremadura-tadex
Extremadura, Spain

Approach 3: intermodal hubs connecting train and e-bikes sharing systems.

- Promote last mile accessibility between public transport lines and low-density rural areas based on bike sharing
- Encourage the use of public transport and low carbon soft modes.
- Increases the area of influence and coverage of both systems.

Example: https://ruralsharedmobility.eu/demonstrators/agueda/
Agueda, Portugal

Approach 4: High frequency carpooling lines

- His composed with an origin, a destination, and physical stops in between located on the road.
- A passenger goes to the stop, reports his presence and destination through an SMS, mobile application or the telephone assistance.
- This request is displayed on roadside dynamic message signs located upstream and at the stop.
- The passenger and the driver share their costs.

Example: https://www.ecov.fr/en/story/lane-high-frequency-carpooling-line-lyon
Leon Area, France

Approach 5: The Village Bus

- Flexible bus service, without schedule and without designation driver
- Book trip via the Internet, - Minimum 2 passengers
- One of the passengers drives

Example: https://www.youtube.com/watch?v=c6XSSoWxvVU
County Council of Västernorrland, Sweden.
CISMOB visions on different solutions

	Flexibility	Capacity	Inclusivity	Investment and maintenance Costs
1	**	**	*****	**
2	****	*	**	*****
3	*	*****	***	***
4	**	***	****	*****
5	*****	**	****	****