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CO-MOVE

D.1.1.1 Stakeholder engagement and state of the art

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1. Executive summary

The territory of Central Europe is characterised by uneven transport connections and mobility opportunities, both across and within regions, particularly between urban areas and rural and peripheral contexts.

The common challenge addressed by the CO-MOVE project is to improve accessibility and connectivity in peripheral and low-density areas by complementing existing public transport systems with community-based and flexible mobility solutions. This approach builds on the joint development and implementation of governance, planning, social and digital innovations.

CO-MOVE will develop and test innovative mobility models, including community-based carpooling and flexible transport services, designed to better respond to local needs and to integrate with existing mobility networks.

The project will strengthen the capacities of public authorities, operators and local communities in co-designing, planning and delivering inclusive and sustainable mobility solutions.

A new generation of mobility services — community-driven, flexible and digitally supported — will become an integral part of regional mobility systems, enhancing accessibility, reducing transport poverty and fostering social inclusion and territorial cohesion. Integration is central to the CO-MOVE approach, as many existing solutions remain fragmented and poorly connected to traditional public transport networks, limiting their scalability and long-term impact.

Project Partners (PP) will jointly co-design, test and validate innovative solutions in three pilot areas (Alpago, Heart of Slovenia and Nyíregyháza), addressing different territorial challenges. The project will support the integration of community-based mobility into existing networks, improve coordination among local initiatives and experiment new service models in areas with limited or no flexible mobility options.

CO-MOVE will leverage participatory approaches, stakeholder engagement and transnational cooperation to ensure that the developed solutions are adaptable, replicable and responsive to the diverse mobility ecosystems of Central European rural and peripheral regions.

This report provides an overview of the current state of play in the three pilot areas, analysing territorial characteristics, mobility patterns, existing services and levels of digitalisation. It highlights key challenges, gaps and opportunities that will inform the co-design and implementation of the pilot actions.

The analysis aims to support the development of more integrated, inclusive and sustainable mobility systems, providing a solid knowledge base for the next phases of the project and for the elaboration of innovative, community-oriented mobility solutions.

2. Territorial and mobility context

2.1. Alpago

The area: identification and socio-economic data

Alpago comprises three municipalities in the province of Belluno — Alpago, Chies d'Alpago and Tambre — coinciding with the Unione Montana Alpago. Together with the neighbouring Longaronese-Zoldo side (Longarone, Ospitale di Cadore, Soverzene, Val di Zoldo and Zoppè di Cadore), it forms the wider "Alpago-Zoldo" Internal Area recognised under the national "Strategia Aree Interne 2021-2027", the two sides having been grouped together on account of their comparable demographic and territorial profile. CO-MOVE's pilot, however, targets the Alpago sub-area exclusively; figures for the full eight-municipality Internal Area are used below only where a more granular breakdown is unavailable, and are identified as such.

Population: approximately 9,100–9,200 inhabitants (Alpago ~6,600; Chies d'Alpago ~1,250; Tambre ~1,290); combined area ~170.6 km²; density ~53–54 inhabitants/km². Between 2015 and 2025 the population declined by an average of ~7%, most steeply in Chies d'Alpago (over 10%); numerous hamlets, particularly in Chies d'Alpago and Tambre, remain subject to depopulation.

Employment rate: ~44.7% area-wide (CCIAA Treviso-Belluno|Dolomiti, ISTAT 2019), roughly seven points below the provincial/regional average — though this is weighed down by municipalities outside the Alpago sub-area (Val di Zoldo 36.9%, Zoppè di Cadore 22.9%); Alpago and Tambre likely sit at or above the area average.

Local economy: business units are spread fairly evenly across sectors, but employment is far more concentrated — manufacturing accounts for just 13.2% of business units yet 26.3% of jobs, followed by construction (16.3%). This reflects numerous small enterprises alongside a smaller number of larger employers concentrated in the industrial areas of Paludi (Alpago) and Longarone, whose manufacturing specialisation index (2.62) far exceeds the regional average (1.37). This concentration of employment in two locations is a strong driver of commuting demand and a compelling rationale for carpooling.

Tourism: Alpago holds ~20% of the Internal Area's guest beds (1,097), second only to Val di Zoldo. Key attractions include Lago di Santa Croce and the Cansiglio plateau — a 7,000-hectare Natura 2000 site and Italy's second-largest forest.

Access to social, health and upper-secondary education services remains limited, especially for the ageing population; residents rely mainly on Belluno and, for some services, on Treviso province via the Fadalto pass.

Community and social services active in Alpago:

- "Gruppo Operativo Giovani": active-citizenship initiative for young people 14+ (60 participants, 2023)
- "Informa Immigrati": support service for immigrant residents
- Socio-assistive service centre (Alpago): accredited for 82 elderly residents plus a 10-place day centre; currently at 65 due to staff shortages (25 additional care workers needed for full capacity)
- Co-housing facility in Lamosano (Chies d'Alpago): up to 12 places for vulnerable elderly
- "Grigio brillante": cognitive-stimulation programme for older residents

Existing mobility services

The TPL line service (DBUS and MOM, the latter running complementary lines from Treviso), generally satisfactory but weaker outside term-time and at weekends and in the more remote areas; road network converging on the Valbelluna axis, with southern access via the A27 (Fadalto-Lago di Santa Croce and Pian di Vedoia); NCC; informal mobility patterns; and potential latent demand not yet captured.

Key mobility challenges:

- No formal carpooling solutions; only informal, word-of-mouth arrangements
- TPL concentrated along the Belluno–Ponte nelle Alpi–Alpago corridor, with limited service to peripheral hamlets and higher-altitude settlements (e.g. Cansiglio/Tambre)
- Pronounced seasonal demand linked to tourism (Lago di Santa Croce, Cansiglio)
- Ageing population increasingly reliant on private cars for services located outside the area
- Fragmentation between TPL, NCC and informal mobility, with no shared coordination mechanism

- Substantial commuting demand towards the Paludi and Longarone industrial poles, poorly served outside standard shift hours — a strong potential use case for carpooling

2.2. Heart of Slovenia

Statistical overview of the area: 6 municipalities; 2 statistical regions (NUTS 3: 5 in Central Slovenia & 1 in Central Sava); 2 macro regions (NUTS 2 - Western & Eastern Slovenia).

- Area: 751.5 km² (3.7% of Slovenian territory), rural character; forest coverage 58% (national average)
- Inhabitants: 69,853 (only 1 settlement above 10,000 and 1 above 5,000 inhabitants)
- Population density: 102 inhabitants/km² (range 61–193), close to the national average (105)
- Age of population: 42.1 years (SI average: 44.4)
- Development index: 1.11 (most developed SI municipalities: ~1.25–1.35)
- Labour migration index 0.39–0.67; only 24.6% of the working-age population remains employed in the region — reflecting strong daily commuting outflows
- Passenger cars per 1,000 inhabitants: 594 (SI: 587) — car-dependent, moderately motorised area

Main mobility flows in the pilot area:

- Daily commuting towards Ljubljana — the dominant flow, for employment, education and services
- Local trips to municipal centres — jobs, schools, kindergartens, health and administrative services, shopping
- First/last-mile connections to transport hubs — between rural settlements and bus/train stations
- Short-distance inter-municipal trips — work, education and social activities

Key challenges:

- Population spread across small and remote settlements
- Car is the primary mode of transport for most residents
- No formal carpooling solutions — only informal practices exist
- No car-sharing services available
- Existing mobility services (DRT, volunteer transport, tourist shuttles) are limited in scope and not integrated
- Public transport limited, focused on peak hours, low frequency on weekends
- Limited coordination between transport modes and directions
- Poor connections from remote settlements to local centres and transport hubs

2.3. Nyíregyháza

Nyíregyháza is the centre of Szabolcs-Szatmár-Bereg County, an important regional hub surrounded by a dense network of smaller settlements closely connected to it economically and socially.

A special characteristic is the “bokortanya” (hamlet settlement) structure, unique in Hungary: small residential clusters organised around central community spaces (“tanyaköz”), traditionally linked to agricultural activities and strong local social ties.

The pilot area primarily covers Salamonbokor, Szabadságbokor, Felsőpázsit, Jánosbokor, Szelesbokor, Benkőbokor, Kazárbokor, Vargabokor, Antalbokor, Rókabokor, Sulyánbokor, Gerhátbokor and Kovácsbokor.

- Low population density and scattered settlement patterns
- Ageing population trends
- Higher vulnerability to transport disadvantage and social exclusion
- Unemployment higher in hamlet areas than in inner residential districts

Nyíregyháza's Sustainable Urban Development Strategy identifies improving accessibility of hamlet settlements as a strategic objective, including flexible, smaller-capacity transport services integrated into the city's public transport system.

Main mobility patterns: daily mobility is strongly oriented towards central Nyíregyháza for employment, education, healthcare, shopping and administrative services.

Existing mobility services: the local bus network (modernised after 2020) ensures main urban connections. Outer areas are served by the H-lines. In the first pilot area, the H40 line (central bus station–Sulyánbokor) operates every 120 minutes, travel time over 60 minutes per direction, route length approaching 30 km; several hamlets remain only partially accessible. In the second pilot area (Felsőpázsit / Tokaji Road corridor), lines 1A and 51 reach only the Vásártér area, leaving outer sections (Airport/former Cipőgyár area, Füzesbokor, Dankóbokor) largely underserved.

Key mobility challenges: low frequency and rigid schedules; long travel times due to loop-like routing; car dependency and transport poverty among vulnerable groups; infrastructure limitations (roads, stops, passenger information); lack of integration between local and regional public transport (separate tariffs, no seamless transfers).

3. 3. Digitalisation and innovation

3.1. Alpago-Zoldo

DBUS currently operates as MaaS Operator within the Regione Veneto MaaS4Veneto initiative (PNRR), with its own mobile app integrating multiple mobility services. The app already incorporates data from other operators — including Trenitalia for rail and MOM, which also serves the Alpago area — and allows tickets to be purchased directly through the app.

The workshop identified the need for a dedicated platform with deep-link integration from the DBUS app to enable booking of the community carpooling service. BePooler (Citec group) has been identified as a candidate technology provider: its MaaS integrator scenarios (search-and-deeplink, or API-based pooling request) directly match this need, and its smart-parking and digital-wallet features could support the reserved-parking and cost-sharing components of the pilot.

More broadly, DBUS is investing heavily in digitalisation, having launched the DEGREE4ALPS project to advance digitalisation in rural mountain areas (Cadore) as a lever for development and territorial cohesion. This has introduced an on-demand service with booking, real-time vehicle-occupancy monitoring and real-time passenger information via the app. Aware that this can be challenging for some users — particularly the elderly — DBUS has also set up call-centre support, while continuing to encourage the shift towards app-based booking, including through dedicated training sessions to help older residents use the app and gain

greater mobility autonomy. The company has expressed clear willingness to support further territorial digitalisation efforts where opportunities for collaboration arise.

More generally, DBUS's approach to innovation is oriented towards introducing mobility solutions precisely where traditional public transport, by cost and operating model, is poorly matched to local mobility demand and territorial characteristics.

3.2. Heart of Slovenia

- Digital tools available for public train and bus routes; integrated tickets for bus and rail
- Online tickets for local Hop on – Hop off tourist trips; automated bike-sharing systems
- Only phone bookings for local elderly transport services
- No integrated ticket combining bus, train, bicycle and on-demand transport
- Within DEGREE4ALPS, a digital booking system for DRT services is being introduced and tested

Digital tools remain mainly available for national services (train, intercity bus). Local-level digitalisation is limited: schedules for intermunicipal bus services are often hard to find and not user-friendly, especially for elderly users.

3.3. Nyíregyháza

Digitalisation relies mainly on national-level journey planners (Menetrendek.hu, Google Maps) and the operator's MÁV Plusz app. Local ticketing is only partially digitalised: MÁV app supports daily tickets/season passes, but full single-ticket purchase (comparable to BudapestGO) is limited; single tickets are available via NM Mobiljegy and integrated apps.

The Gyerebusz platform (gyerebusz.nyiregyhaza.hu) is the main digital enabler for demand-responsive transport (lines 900, 901, 902) — online booking, but no map-based visualisation or dynamic route planning yet.

The digital ecosystem remains fragmented: limited integration between fixed-route and demand-responsive services, no unified platform for trip planning, booking, real-time tracking and dynamic service management.

4. 4. Community and stakeholder dimension

4.1. Alpago-Zoldo

Stakeholders mapped during the workshop:

- Mobility Manager — Paludi (company referents: Marchon, Unifarco)
- Mobility Manager — Longarone
- GAL (Gruppo di Azione Locale) Prealpi e Dolomiti
- IPA (Intesa Programmatica d'Area) Dolomiti Prealpi Bellunesi
- Mayors of the 3 Alpago municipalities
- Activists — Consulta Giovani (youth council) / Gruppo Operativo Giovani (Unione Montana Alpago)

- "Informa Immigrati" (immigrant support service)
- Socio-Assistive Service Centre Alpago
- CAI / Sentieri (Italian Alpine Club / trail network)
- Tech Provider — candidate: BePooler

4.2. Heart of Slovenia

Key stakeholders

- Municipalities and local authorities (Kamnik, Litija, Šmartno pri Litiji, Lukovica) — identify local needs, support coordination and integration into local planning; coordination gap: different priorities and limited intermunicipal joint planning
- End users and local communities (elderly, youth, commuters, students, families) — main users, provide feedback; gap: limited awareness of services, strong car dependence
- NGOs and local associations — support vulnerable groups; gap: fragmented, project-based activity
- Tourism stakeholders — identify seasonal mobility needs; gap: tourist services not integrated with everyday mobility
- IT and digital solution providers — support digitalisation; gap: lack of integrated platform, poor interoperability
- Employers, schools and public institutions — generate daily mobility demand; gap: strong car commuting dependence

Other stakeholders — public transport operators coordinated at national level (bus & rail): Slovenian Railways, Ljubljana Bus Station, DUJPP (Public Transportation Management Company), SŽ - ŽIP d.o.o. Coordination gaps include missing train/bus connections to Lukovica and Šmartno pri Litiji, limited evening/weekend/holiday service, and poor cross-operator schedule transparency.

Community-based municipal transport services already active: Sopotnik and Prostofer (elderly transport, 4 municipalities, volunteer-based), a DRT pilot shuttle (DEGREE4ALPS, 1 municipality), Hop on-Hop off tourist shuttles (1 municipality), and PoKolo/Kamkolo e-bike rental (4 municipalities). Common gaps: booking only by phone/email, limited weekend and off-season availability, incompatible bike-sharing systems between municipalities.

4.3. Nyíregyháza

Key stakeholders:

Local representatives — elected officials connecting residents with municipal decision-making

Local community actors and farm caretakers / settlement caretaker service — support daily needs (meal delivery, shopping, medicine, administrative tasks)

Local NGOs / community organisations — intermediaries between residents and authorities

Local population (hamlet settlements) — end users, varying demographics (ageing in Salamonbokor/Szabadságbokor, younger in Felsőpázsit)

MÁV Group — main PT provider; planned to supply pilot-phase buses

Bus drivers — route execution, IT tools, vehicle operation

Dispatchers — managing the IT platform

IT developer — further development of the GyereBusz platform (route planning, map visualisation)

Level of cooperation: the modernised local bus network is subject to continuous updates with relevant stakeholders; targeted engagement will be initiated for pilot preparation and implementation.

5. 5. Outlook and relevance for pilot

5.1. Alpago-Zoldo

Envisaged pilot design elements:

- Dedicated carpooling stops/meeting points, integrated into or alongside the existing TPL stop network
- Reserved parking at key locations (e.g. industrial areas, or little villages centre)
- Digital platform with deep-link integration from the DBUS app (candidate: BePooler), covering booking, matching and reserved-parking/cost-sharing functions
- Vehicles: municipal fleet and/or volunteer drivers

Open questions to be resolved during pilot design:

- Legal basis: in the absence of a dedicated Italian carpooling law, terms of service will need to rest on the general cost-sharing/non-profit principle, following the approach used in comparable Interreg pilots (Co&Go, MELINDA/Taxito)
- Tariff/cost-sharing design: per-km contribution versus flat per-trip contribution, and how this interacts with existing DBUS/MaaS4Veneto fare structures
- Stop authorisation: formal procedure, together with the Provincia di Belluno as Ente di Governo del bacino TPL, for integrating carpooling meeting points into or alongside the existing TPL stop network
- Insurance and liability framework for drivers and passengers, to be clarified with BePooler and/or benchmarked against comparable Interreg legal-framework studies
- Governance model: how day-to-day coordination will sit alongside DBUS's role as MaaS Operator, and how GAL/IPA structures might support outreach in the more peripheral municipality (Tambre)

Priority use cases for the pilot:

- Commuting to the Paludi and Longarone employment poles, outside standard shift hours
- Seasonal tourism peaks around Lago di Santa Croce and the Cansiglio plateau
- Access to health, administrative and upper-secondary education services outside the area for the ageing population

5.2. Heart of Slovenia

Pilot expectations

- Gain deeper insight into real mobility needs, especially in peripheral areas, and ensure solutions are practical, accepted and locally tailored
- Explore how to connect and coordinate existing (fragmented) services

- Assess the potential of new solutions (social carpooling, DRT) to achieve behavioural change in transport patterns
- Prepare a framework and action plan for developing mobility services, supporting municipalities in integrating solutions into local strategies and future investments
- Encourage more shared and sustainable mobility practices in an area currently highly dependent on private car use — motivating residents to actually use new solutions, not just explore them

5.3. Nyíregyháza

Nyíregyháza's SUMP prioritises accessibility of the outskirts and fleet modernisation, but no dedicated model yet exists for hamlet settlements — a clear opportunity for CO-MOVE.

Relevant elements for pilot design:

- Co-design of routes, service structure and operational parameters with residents, community actors and stakeholders
- Vehicle provision through the MÁV Group fleet or dedicated procurement if needed
- IT development: enhancing the DRT platform with map-based functionality and flexible route planning, for both dispatchers and drivers
- H40 service extension: DRT service every ~2 hours complementing the fixed-route backbone
- New DRT service for currently underserved areas (both pilot sub-areas)