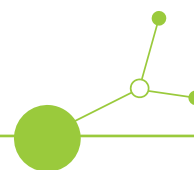


Common assessment tool



Version 1
11 2024

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1. Introduction

This document represents the Deliverable 1.2.1 of the Interreg CENTRAL EUROPE 2021-2027 CE0200590 - Green LaMiS Project. The document is developed within the Activity 1.2 - *Development and adoption of the common strategy and action plan of the WP1 -Assessment and monitoring of services' environmental impact for a Joint Action Plan.*

It is intended to present the common assessment tool, whose goal is the estimation of the carbon footprint of home-delivered social services (HDSS) for the social enterprises operating in the three cities involved in the Project: Bergamo (IT), Klis (HR), and Szombathely (HU).

The tool translates the methodology defined in the Deliverable 1.1.1 - *Transnational methodology co-design* into an operational instrument.



2. Scouting of the Services

The first need while defining the common assessment tool compliant with the theoretical co-design methodology was the identification of the home-delivered social services (HDSS), provided by the Social Enterprises (SE), to be considered for the Project.

Thus, a scouting activity was carried out, cooperating with the Municipalities involved in the Project, to collect and investigate the mobility features and needs of the HDSS. For this purpose, the first form *Social Services Description* was shared and discussed with Municipalities. Its structure and contents are reported hereby.

Social Service Title
<p>Describe the service considering the territorial context, the recipients, the type of operators and the vehicles used (max 3000 characters)</p> <ul style="list-style-type: none"> • Type (e.g. home care, meal delivery, etc.) • Type of provider (directly managed public body, social enterprise, national health service, etc.) • Type of users (elderly, disabled, minors, etc.) • Number of users in charge of the service • N° of operators employed in the service • Operator characteristics (average age, gender, professional qualification) • Vehicles used for the movement of operators (how many, which ones, owned by?) • Characteristics of the territory (roads, territorial morphology)
Organization of the service
<p>Describe how the service is performed:</p> <ul style="list-style-type: none"> • Days and times of service provision • How shifts and operator movements are organized (what criteria are followed in assigning users to the individual operator and defining operator movements from one user to another) • Average number of users taken care per operator • Average time spent by operators at users' homes • Average time operators move from one user to another - • Type of vehicles used (ownership of the vehicle and power supply and/or use of public transport) • Km travelled • Incidence of fuel costs and/or km reimbursements on the service (% of total service costs) • Adoption of a digital system for detecting performance and movements (clocking machine) • Other relevant with respect to the organization of the service • Geolocation of users



Constraints

Describe the constraints of the service:

- It is a service that involves a public contract
- Is the service fully paid for by the institution or is there an economic participation also by the users? If yes, in what %?
- What are the criteria for calculating the fee by the public body (minutes, hours, km yes/no)
- Time constraints,
- Provides a night and/or public holiday service
- Obligation to ensure the stability of operators for each user (users always followed by the same operators)
- Characteristics of the vehicles to be used (e.g. for meal delivery and/or for transporting wheelchair users, etc.)
- Possible environmental criteria in the call for tenders

Vehicles

Describe the type of vehicles used by the operators:

- Cars - petrol, hybrid, electric? Owned by? How many vehicles?
- Public transport - which ones?
- Scooters - petrol, electric, owned by, how many,
- Other

Expected improvements

Try to describe the aspects that can be improved from a mobility, social and economic point of view.

Municipalities first internally deployed a scouting activity to identify an initial set of HDSS that could be suitable for the Project. 3 services were identified for both Bergamo and Szombathely and 1 service was identified for Klis.

A further selection was carried out jointly by WG1 and the Municipalities to target a sub-selection of the HDSS to be considered, based on two criteria:

- Completeness of data, to allow for the meaningful application of the co-design methodology developed.
- Potential for initiatives to have an impact on actual carbon footprint reductions. Results of this selection process are reported in the following chapters, listing the HDSS collected, organized by the Municipalities, adopting the structure of the *Social Services Description form*.

Finally, 2 services were considered for both Bergamo and Szombathely, and 1 service for Klis.



2.1. Bergamo

For the Municipality of Bergamo, two services were selected, as reported hereby.

2.1.1. Social Transport for People with Disabilities by Partnership of Bodies

Social Service Title
<p>Social Transport for People with Disabilities - Aiding families to ensure the social integration of their relatives.</p> <p>The service includes accompanying people with disabilities from their residences to various services within the Municipality of Bergamo. Service is carried out by volunteers who work every day from 7:00 AM to 6:00 PM, as well as by paid operators. Services use 18 vehicles, (11 equipped with lifts for wheelchair). Vehicles have 9 seats each.</p> <ul style="list-style-type: none"> • Provider Type: A partnership involving Municipality of Bergamo, ASD I Pellicani, Solco Consortium, L'Impronta Cooperative • User Type: Severely and moderately disabled people • Service Details <ul style="list-style-type: none"> ○ Number of paid operators: 12 ○ Number of volunteers: 37 ○ Characteristics of volunteers: average age 60 years, predominantly male ○ Organizational coordinators: 3 women, average age 45 years • Vehicles Used <ul style="list-style-type: none"> ○ Number owned: 12 ○ Number on loan: 2 ○ Number leased: 1 • Territorial Characteristics: The transports take place within the City of Bergamo, involving urban traffic with high traffic volumes at certain times (which unfortunately largely coincide with the transportation needs). This results in delays and the need for careful planning of the transport to optimize the needs of the passengers and manage costs effectively. Therefore, extreme attention is dedicated to the planning of daily routes.
Organization of the service
<p>Two kinds of service for people with disabilities:</p> <ul style="list-style-type: none"> • Daily and consistent service: Accompanying disabled people to services and projects (activities part of their Life Project). • Occasional service: Activated upon request for accompaniment to medical visits or specialist facilities. <p>Activation Methods:</p> <p>Service is activated upon request from families, social workers from the department of the Municipality of Bergamo, or the housing/community services.</p> <p>For transportation of people with severe disabilities, transportation to the service is scheduled year-round at specific times and with a predetermined itinerary. During the summer, scheduling is adjusted to accommodate outdoor activities associated with the services/projects. Two vans are assigned to the Città Leggera housing network.</p> <p>Services are organized based on requests and are available from Monday to Friday, from 7:00 AM to 6:00 PM. Shifts are arranged according to the availability of volunteers. On certain routes, given the sensitivity of the individuals and the complexities involved, the service is managed by a hired operator. In any case, complete coverage of the service has always been ensured.</p>



- Average number of users/assisted individuals: 100
- Response time: 15 minutes

In 2023:

- 90,000 km, with a 42% fuel cost impact for medium-mild disability user transports
- 51,000 km, with a 10% fuel cost impact for users with severe disabilities

All disabled people transported live within the territory of the Municipality of Bergamo.

There are no digital systems for the detection of movements or the geolocation of vehicles.

Constraints

For people with medium-mild disabilities, their families are expected to cover 70 % of the costs of the service. For people with severe disabilities, the costs are covered by the Municipality and Consorzio Solco.

The cost of each route for families is fixed.

There are no night or festive services, except for accompaniment during the summer holidays.

It guarantees the use of means with lift for wheelchair users and accessible for elderly people with mobility difficulties

Vehicles

- 15 diesel vans
- 1 electric van
- Other 2 small diesel vans

Expected improvements

- Increase the presence of volunteers with research campaigns on social media and media.
- Hybrid/electric vehicle fleet.
- Adoption of a digital detection system for transport time monitoring.

2.1.2. Day Centre for people with disabilities (C.D.D.) of the City of Bergamo

Social Service Title

The Day Centre for people with disabilities (C.D.D.) of the City of Bergamo is a service for severely disabled people who need continuous and specific assistance.

The C.D.D. is an accredited service within the system of Socio Health of the Lombardy Region and is part of the network of socio-health services in the territory.

The C.D.D. is authorized, accredited and contracted by the Regional Board with Resolution n. 1147 of 23/11/2005 for no. 33 places and provides semi-retirement social- and healthcare services to the benefit of severely disabled people.

The Centre is organized in such a way to ensure high-level educational, social and health interventions and rehabilitation, able to build integrated paths between the different professional figures to realize effective and efficient individualized projects.

The C.D.D. guarantees, from 9 am to 4 pm, from Monday to Friday, for 235 days a year, the provision of services to guests on the basis of the Individualized Educational Project (P.E.I.), which involves families and is characterized by the opening to the outside, in an integration with the resources present on the territory.

Among the many opportunities offered to users is the daily transport service from 7.45am to 9.00am Home/ C.D.D. and from 4pm to 5.15pm C.D.D./ Home, after the ordinary frequency at the C.D.D. from 9.00 to 4pm.



- Type (for example home care, meals delivery, etc.): transport service dedicated to people attending the Day Centre for Disabled Persons of the City of Bergamo
- Type of provider (public body directly managed, social enterprise, national health service, etc.): public body with contracted transport service. Note: C.D.D. is a service of the Bergamo Municipality accredited within the Lombardy Region's Social Health System and is part of the territory's social - health services network
- Type of user (elderly, disabled, children, etc.): disabled, aged between 18 and 65
- Number of users with the service: 33 users
- Number of operators in the service: 4 drivers + 4 assistants
- Operator characteristics: average age: 56 years; sex: - Females: n. 4 - Males: n. 4; professional qualification: driver/ transport employee with disabilities
- Vehicles used for the movement of operators: four vans, each minibus maximum 9 transported, including driver and assistant on the vehicle.
- Characteristics of the territory (streets, territorial morphology): the Day Centre for people with disabilities (C.D.D.) is located in via Pizzo della Presolana n.7, in the territory of the Municipality of Bergamo (altitude 249 m. above sea level, area 40,16 km², inhabitants 120,649 (31-5-2024), density 3.003,98 ab. / km².

Organization of the service

The disabled transport service is carried out with four suitable, approved and licensed, according to current regulations for public transport of disabled people, including in wheelchairs, vans. The vans comply with European standards.

The service includes transportation from the guest's home to the C.D.D. and vice versa, respecting the agreed and scheduled times and modalities.

- Days and times of service provision: The service is carried out 5 days a week from 7.45 am to 9 am and from 4 pm to 5.15 pm, excluding Saturday and Sunday, public holidays, as well as short periods of suspension of activities by the C.D.D.
How the shifts and movements of operators are organised (what criteria are followed in assigning users to individual operators and in defining the movements of operators from one user to another): The transport service is carried out in the City of Bergamo with functional routes, appropriately articulated and organized according to the needs of users and C.D.D. and the overall functional management of transported people (also based on the total number of wheelchairs to be transported), taking into account their respective residences and the territorial location, with the time and the modalities agreed. Four vans are used for the transport service, each of which is equipped with a driver and an assistant to users during the transport. Each of the four vans operates in a specific area of the City of Bergamo with functional and homogeneous routes compared to the area of residence of users.
- Average number of users per operator: 7 users transported per minibus, with a driver and an assistant
- Average time spent by operators at the users' homes: approximately 3 minutes per stop, the time is longer if the disabled person using the transport is in a wheelchair because the vehicle's own mobile platform must be used to get on and off.
- Average time of operators moving from one user to another: approximately 8 minutes
- Type of vehicles used (vehicle ownership and electricity supply and/or use of public transport): passenger vehicles approved and authorised for use in relation to the current legislation on public transport for disabled persons, even in a wheelchair. Equipped with wheelchair access by means of a mobile platform.
- Km travelled per day by the four vans (morning + afternoon): 230 km on average per day
- Fuel cost: 7 % of total service costs
- Adoption of a digital system for performance and movement detection (stamp): daily paper detection



- Other information relevant to the organization of the service: it is specified that guests of the C.D.D., in addition to ensuring the daily transport service from 7.45 am to 9.00 am Home/ C.D.D. and from 4 pm to 5.15 pm C.D.D./ Home, after the ordinary frequency at the C.D.D. from 9.00 am to 4 pm, the A/R transport service is guaranteed even in case of change of frequency schedule at the C.D.D. from full-time to part-time.
- Users' geolocation: not provided

Constraints

Constraints of service:

- Is a service that involves public procurement: yes
- Is the service entirely at the expense of the body or is there also an economic participation by users? If yes, in what %: the monthly frequency fee of the user at the C.D.D. includes, in addition to participation in the various activities provided annually in the program of the C.D.D. (social and health activities with a high degree of integration, rehabilitation, socio-rehabilitation, educational and recreational) and the canteen service, also the transport service.

The attendance fee covers part of the social assistance costs on a monthly basis and in relation to economic situation, as defined by ISEE (individual of the adult attending the C.D.D. and not of the family; family ISEE only in case of minor person), according to proportionality parameters.

- What are the criteria for calculating the tariff by the public body (minutes, hours, km yes/no): same criteria as indicated in the previous point
- Time constraints: the service must guarantee the transport of at least 33 disabled people, who must arrive at the C.D.D. approximately at 9.00 am each morning and start the return journey approximately at 4pm
- Operates a night and/or holiday service: no
- Requirement to ensure the stability of operators for each user (users always followed by the same operators): normally
- Characteristics of the means to be used (e.g. for delivery of meals and/or transport of persons in wheelchairs, etc.): the disabled person's transport service is carried out by suitable vans, approved and licensed to use in accordance with the current regulations for public transport of disabled people, including wheelchair. The vans comply with European standards.
- Possible environmental criteria in the tender: The vehicles used must comply with the following technical characteristics:
 - To ensure the transport of at least 33 disabled persons, with seats fitted with double-breasted or lap belts, if disabled persons in wheelchairs are fitted with wheelchair-accessible seats and have special safety and anchorage systems, all approved according to the current regulations on public transport and safety;
 - The vehicles must be equipped with air conditioning systems for the summer and winter periods;
 - Vehicles for wheelchair users must be equipped with appropriate equipment and a platform which can be lifted vertically to enable the wheelchair to be moved up or down, or by special slides in accordance with the law on disabled transport and safety;
 - Seating must be secured for all passengers, including security and assistance personnel;
 - The vehicles must be equipped with suitable wheelchair seats, with appropriate and adequate anchoring and safety systems;
 - Slides/ramps/handling devices for wheelchair access to trucks must be designed, sized and slope compliant with transport disability and safety regulations;
 - The height of the passenger compartment between the floor and the interior surface of the vehicles must comply with the regulations on transport for disabled people and safety;



- The climbing door must be equipped with handrails and have a step of height in accordance with the current regulations on disabled transport and safety;
- The vehicles must be maintained in perfect efficiency according to the current regulations and in perfect hygiene and cleanliness;
- The vehicles must be covered by insurance.

Vehicles

- 4 diesel vans

Expected improvements

To optimize and harmonize the routes of the transport service according to the needs of users and C.D.D. and the overall functional management of people transported (also based on the total number of wheelchairs to be carried), taking into account their respective residences and geographical location.



2.2. Klis

The Municipality of Klis identified one service to be considered.

2.2.1. Household assistance and meal delivery services

Social Service Title
<p>The municipality provides household assistance services and meal delivery services for socially disadvantaged residents.</p> <p>The service provider is a local self-government unit.</p> <p>Service users are elderly and infirm citizens, and there are 60 of them on the territory of the municipality.</p> <p>10 women between the ages of 40 and 60 are employed to provide domestic help services. They have a secondary vocational education.</p> <p>The roads in the municipality are in good condition, the biggest problem is the distance of the settlements in the municipality, and better connection of the area is our mission, which we are working on with the aim of progress.</p> <p>The municipality already owns one electric vehicle, and soon we will acquire another through leasing.</p>
Organization of the service
<p>Every woman who is employed in the field of providing social services has an average of 6 beneficiaries that she visits.</p> <p>Working hours are from Monday to Friday from 7:30 a.m. to 3:30 p.m.</p> <p>The exact time of service provision is agreed with the service user.</p> <p>The average transfer time from one beneficiary to another is approximately half an hour. The time spent with beneficiary also depends on the day or the situation, for example the tour of the disabled takes longer than other tours.</p> <p>Social services providers use personal vehicles or public transport.</p> <p>The distance from one beneficiary to another is approximately 15 km.</p> <p>All employees have a tour diary and records of working hours.</p> <p>Female employees perform various tasks, from picking up groceries to helping around the house, paying bills, etc.</p> <p>They use google maps to locate users.</p>
Constraints
<p>The service is paid for exclusively by the institution.</p> <p>The criterion for calculating compensation is exclusively working hours.</p> <p>Services are not provided at night, on holidays or on weekends.</p> <p>Beneficiaries are always serviced by the same operators.</p> <p>The vehicles will be used to provide help at home and for food delivery services to needy beneficiaries.</p>
Vehicles
<p>Operators use petrol and diesel vehicles and public transport (bus).</p>
Expected improvements
<p>Mobility management is an approach to service creation and delivery that starts and ends with the user. However, despite its recognition on the tourist market, the municipality's traffic accessibility is limited primarily due to its location, relief,</p>



but also the degree of development of certain forms of transport, but proposals for improving the transport system are being worked on, which would affect transport connectivity.



2.3. Szombathely

For the Municipality of Szombathely, two services were selected, as reported hereby.

2.3.1. Day care for the elderly by Pálos

Social Service Title
<ul style="list-style-type: none"> • Type of provider: Pálos Károly Social Service Centre and Child Welfare Services - a municipal nonprofit social institution (hereinafter: Pálos) • Type of users: Elderly individuals who are able to care for themselves at their home, but are happy to meet fellow elderly people in daytime and play, talk, learn, dine, spend time together. Some of them access the day care centre alone, but some need help in transport which is provided by Pálos. • Number of users in charge of the service: In 2023, a total of 282 elderly individuals received the service in 5 daycare centres. • N° of operators employed in the service: 24 caregivers • Operator characteristics: <ul style="list-style-type: none"> ○ Average age: 45-50 ○ Gender: only female ○ Professional qualification: The majority of caregivers possess qualifications as social caregivers and nurses. • Vehicles used for the movement of operators/transport of clients: <ul style="list-style-type: none"> ○ Which ones: 9-person minibus Renault Traffic (2010) ○ How many: 1 ○ Owned by: Pálos • Characteristics of the territory: <ul style="list-style-type: none"> ○ Roads: The minibus moves in the city where the roads are a little above average quality. The city is relatively flat so it's easy to move around with any type of vehicle. ○ Territorial morphology: Szombathely is a city with appr. 75.000 inhabitants, on 97,2 km2. Height above sea level: 216 m. The city is basically flat with good road network, satisfactory for transportation
Organization of the service
<ul style="list-style-type: none"> • Days and times of service provision: <ul style="list-style-type: none"> ○ The 5 day-care centres are open every day; on weekdays 8.00-16.00, on weekends and holidays 8.00-14.00. • How shifts and operator movements are organized: <ul style="list-style-type: none"> ○ Most of the elderly who use the daytime service reach the senior clubs independently; however, there are some who are transported by the institution. ○ The elderly are picked up by the driver at their homes at a pre-arranged time. The drivers are aware of who has requested transportation on a given day and based on their place of residence, they pick up the elderly one after another and transport them to the club. • Average number of users taken care of per operator: <ul style="list-style-type: none"> ○ In 2023, transportation was authorized for a total of 12 individuals.



- Currently, Pálos transports 5 individuals to a club, but this number is subject to change. Due to increased demand, transportation is also provided using the institution's passenger vehicle.
- Drivers typically take between 6 to 10 minutes to travel from one location to another.
- The driver assists the elderly with boarding and alighting; otherwise, it is arranged with the elderly individuals that the driver will arrive at a specific time, and they are expected to wait in front of their house.
- On average the drivers cover 30 km/day.
- Type of vehicles used:
 - 1 9-person minibus Renault Traffic (2010)
- Ownership of the vehicle:
 - owned by Pálos, a 100% municipal institution.
- Km travelled: the minibus covered 10.787 km in 2023.
- Incidence of fuel costs and/or km reimbursements on the service:
 - The annual fuel cost for the minibus constitutes approximately 0.35% of the total cost of the service.
- Adoption of a digital system for detecting performance and movements (clocking machine):
 - We do not have available information about this yet.
- Other relevant information with respect to the organization of the service:
- Geolocation of users:
 - Within the city, the institution provides daytime care for the elderly exclusively to residents of Szombathely.

Constraints

- Public contract involvement:
 - According to Act III of 1993 on Social Administration and Social Services, providing daytime care for the elderly is a mandatory task for municipal governments in settlements with a population exceeding 10,000.
- Economic participation by users:
 - According to the municipal decree 11/1993 (IV. 1.) of the General Assembly of Szombathely City with County Rights on the fees for personal care social and child welfare services, a fee must be paid for the service. The decree regulates the amount of the personal contribution fee to be paid.
- Criteria for calculating the fee by the public body:
 - According to Government Decree 29/1993 (II. 17.) on the fees for personal care social services, in the case of daytime care, both the institutional and personal contribution fees must be calculated on a per-care-day basis. The amount of the personal contribution fee is stated in the agreement, which is determined based on the beneficiary's income from the previous month.
- Time constraints:
 - The senior clubs are open every day of the year: from Monday to Friday, they operate between 8:00 AM and 4:00 PM, and on weekends and public holidays, they are open from 8:00 AM to 2:00 PM.
- Obligation to ensure the stability of operators for each user:
 - There is no obligation as such in terms of the activities carried out in the daycare service or senior clubs.
 - The transportation of elderly however can only happen by the designated drivers of the institution.



- Characteristics of the vehicles to be used:
 - The minibus is not suitable for transporting people with physical disabilities/in wheelchair.
- Possible environmental criteria in the call for tenders:
 - We do not have available information on this

Vehicles

Describe the type of vehicles used by the operators:

- Fuel: gas
- Ownership: Pálos
- Number of vehicles: 1

Expected improvements

- Introduction of electric vans:
 - Electric vans produce zero emissions, contributing to reduced air pollution and a cleaner environment, which is especially beneficial in urban areas.
 - Over time, electric vehicles generally have lower operating costs compared to traditional diesel or petrol vehicles. Savings on fuel and reduced maintenance costs can make the service more economically sustainable.
 - Electric vans can be equipped with modern accessibility features such as low floors, ramps, and advanced safety systems, improving the ease of boarding and alighting for elderly passengers.
- Route Planning and Optimization:
 - Optimized routes minimize travel time and distance, reducing the overall time each trip takes. This leads to quicker pickups and drop-offs, enhancing the efficiency of the service.
 - Efficient route planning can accommodate more passengers within the same timeframe. By ensuring that the most effective routes are used, more elderly individuals can be served without increasing the number of vehicles.

2.3.2. Support Services for People with Disabilities by FEHE

Social Service Title

Support Services for People with Disabilities - partly home service (helping with everyday tasks at home, doing shopping etc.), partly transportation (driving the disabled to school, work or to health service).

Type of provider: Public Nonprofit Ltd. for the Disabled and Homeless. (abbreviation in Hungarian: FÉHE)

It's a nonprofit company owned 100% by the Municipality of Szombathely City with County Rights, aiming to provide services for the disabled and the homeless within the territory of the city and the surrounding small region (75.000 + appr. 25.000 inhabitants).

- Users: Disabled persons living in their own home
- Number of users: 60-65 persons per year, on a daily-weekly basis.
- Number of operators: Altogether 5. 2 persons as trained therapeutic staff, 2 drivers, 1 group leader also participating in the everyday tasks
- Operators
 - Average age: 51 (between 46-56).



- Gender: 1 man, 4 women.
- Qualifications: 1 university graduate social worker, 4 social workers with lower level qualification (tertiary level training)
- Vehicles:
 - 2 cars: a Ford Transit 9-person minibus from 2018, barrier-free, suitable for entering with wheelchair; a 5-person Renault Kangoo from 2014. The vehicles are owned by Public Nonprofit Ltd. for the Disabled and Homeless. The cars run with diesel.
 - 2 bicycles with average features (non-electric)
- Territory: the morphology of Szombathely and its surrounding is favourable for transport, relatively flat with small bumps only. The road network covers the area well which helps reaching out to each person in need.

Organization of the service

- Service is provided on workdays between 08.00 till 16.00, the times are not sharp (the morning may start from 7.00 when there are requests for it).
Rush hours are 7.00-11.00, 13.00-15.30
- Shifts and operator movements are organised on a weekly basis by the group leader, based upon the users' requests submitted previously. Single requests are handled individually, if they fit in the fixed shift order. Shift orders are prepared a week ahead. Operators are assigned to their usual users/clients as much as possible to keep service provision as smooth and helpful as possible.
- An average operator works with 5 clients requiring home service + 5 clients requiring help in travel.
- Average time spent by operators at users' homes: 60-70%
- Average time operators move from one user to another: no exact data available
- Type of vehicles used:
 - 2 cars: a Ford Transit 9-person minibus from 2018, barrier-free, suitable for entering with wheelchair, and a 5-person Renault Kangoo from 2014. The vehicles are owned by the service provider Public Nonprofit Ltd. for the Disabled and Homeless. The cars run with diesel.
 - 2 bicycles with average features (non-electric)
 - Operators providing home help often use public transport both in the city and outside. Cars are used in the cases when transport is needed for the disabled person, or the transport of a heavy item is necessary.
- Km travelled: In the year of 2023 the Ford Transit covered 32.402 km and the Renault Kango 17.811 km.
- Incidence of fuel costs and/or km reimbursements on the service: 12,2%
- Adoption of a digital system for detecting performance and movements (clocking machine):
 - No.
- Geolocation of users:
 - Attached map of the city with dots indicating the locations of clients

Within the city, the institution provides daytime care for the elderly exclusively to residents of Szombathely.

Constraints

- Public contract involvement:
 - There is a contract with the central government for providing obligatory social services for the public, financed by the central budget. Another contract with the local government covers extra services financed by the local municipality budget. The financing of the service provision comes from 3 sources: central budget 88.73 %, municipal budget 2.99 %, payments of the users/clients 8.28 %. According to



the municipal decree 11/1993 (IV. 1.) of the General Assembly of Szombathely City with County Rights on the fees for personal care social and child welfare services, a fee must be paid for the service. The decree regulates the amount of the personal contribution fee to be paid.

- Criteria for calculating the fee by the public body:
 - Based upon the real costs of the service and the travel costs per km, and decreased if the financial status of the client justifies it.
- Time constraints:
 - Service is provided only on workdays, between 8-16.
- Obligation to ensure the stability of operators for each user:
 - There is always a strive to create long-term links between user/client and operator. Whenever possible, the same operator is assigned to a certain client
- Characteristics of the vehicles to be used:
 - 1 of the 2 vehicles (the Ford Transit 9-person minibus) is barrier-free, an electric ramp for entering with wheelchair is installed.
- Possible environmental criteria in the call for tenders:
 - There no experience at the Municipality to apply environmental criteria in calls for tenders, it's new and has to be investigated first

Vehicles

Describe the type of vehicles used by the operators:

- 2 cars: a Ford Transit 9-person minibus from 2018, barrier-free, suitable for entering with wheelchair; a 5-person Renault Kangoo from 2014. Both cars run with diesel. The vehicles are owned 100% by the service provider (Public Nonprofit Ltd. for the Disabled and Homeless).
- Operators use public transport when no heavy item transport is needed, or the disabled person does not need transportation. (A usual home service is provided with public transport travel or bicycle.) Local and regional bus and train are used.
- No scooters are used (and changing for scooter does not seem to be a good choice)

Expected improvements

- modal change from car to bicycle or e-bike in home service cases to decrease CO2 emission and increase traffic attenuation
- change of cars for electric to decrease CO2 emission (electric cars, being less noisy can put less stress on children/people living with autism)
- reorganization of home service cases for combining runs when shopping is needed, which could be done and delivered with an e-cargo bike instead of separate bicycle runs or car use
- the use of a route optimization software could decrease mileage to be covered with the service provision
- changing from bicycle to e-scooter would only have one positive effect: saving travel time, thus becoming more effective time-bound.



3. Data collection

Once the services under analysis were selected, data collection was carried out. An Excel sheet was prepared to support, facilitate, and standardize the data collection process.

The Excel sheet was divided into three distinct sections:

- General Service and Inventory Information;
- Fleet and Activity data;
- Features of the journeys.

The *General Service and Inventory Information* section covered general information about the service, details about the person completing the form and the inventory year.

Specifically, the requested information included:

- City of the Services
- Service Name
- Service operator
- Inventory year
- Inventory compiled by
- Position of compiler
- email (compiler)
- Number of users served
- Number of operators/volunteers involved
- Notes

The *Fleet and activity data* section collected data on how the service is provided. Specifically, a survey was conducted on the vehicles used and whether some trips are made using public transportation or bicycles.

In particular, the information required for each vehicles used were:

- Model (as detailed as possible)
- Plate
- Fuel Type
- Km travelled in inventory year
- Fuel upfilled in inventory year (if available)

Then, the compiler had to indicate if any trips were made using public transportation or bicycles. If the answer was positive, it was required to indicate the estimated kilometers traveled annually by all volunteers/operators during the inventory year using the specified mode of transport.

Finally, the *Features of the journeys* section examined the territorial characteristics of the service. Specifically, it investigated whether trips start from the same address and end at the same location (e.g., at the operator's headquarters). Additionally, it requested the provision of:

- Location of the starting point
- Location of the users



- Location of the ending point of the services

The locations could be provided in the following formats:

- .shp file or a shared google map reporting these location (BEST)
- .jpeg file showing the location on a map (GOOD)
- .xlsx file reporting the addresses of these location (STILL ACCEPTABLE)

Each SE was required to complete a form for each service under analysis. Below is a summary image of the form that was provided to the SEs.

General Service and Inventory Information																																						
City																																						
Service Name																																						
Service Operator																																						
Inventory year																																						
Inventory compiled by																																						
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Fleet and Activity data																																						
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Using bikes?	Y/N	Estimated amount of km covered yearly by all the operators/volunteers																																				
Km travelled in inventory year by bike																																						
Using PT?	Y/N	Estimated amount of km covered yearly by all the operators/volunteers																																				
Km travelled in inventory year by PT																																						
Notes																																						
Features of the journeys																																						
Fixed starting point of the service?	Y/N	The movement is (usually) starting and ending everyday by the same place (operator's headquarters)																																				
Fixed ending point of the service?	Y/N																																					
Location of te starting point	Please attached (alternatively):																																					
Location of the users	.shp file or a shared google map reporting these location (BEST)																																					
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Figure 1 - Excel form provided to collect data on services.

The service selected for the Municipality of Klis is provided by operators/volunteers who travel independently using their own vehicles. Therefore, there is no database detailing how the service is delivered. It was thus necessary for the Municipality of Klis to directly interview the operators performing the service. The survey aimed to identify the trips made during an average week. The weekly data collected were then considered suitable and representative to estimate the annual trips.



4. Functional structure of the common assessment tool

The common assessment tool is intended to estimate the carbon footprint of home-delivered social services (HDSS) for the social enterprises operating in the three cities involved in the Project: Bergamo (IT), Klis (HR) and Szombathely (HU). The tool is the operative counterpart of the methodology defined in the Deliverable 1.1.1 - *Transnational methodology co-design* into an operational instrument.

The functional structure of the tool is represented in Figure 6, where the various components are depicted with specific shapes.

A graphical representation of the functional structure, the flowchart, describes the operations to be performed, visualized with a series of symbols and the sequence in which they must be executed. In particular, there are steps requiring manual input by the user, questions that split the flowchart into different branches based on the responses, available data used for calculations, and the synthesis process.

An overview of the symbols used in the functional framework is shown in the following figure.

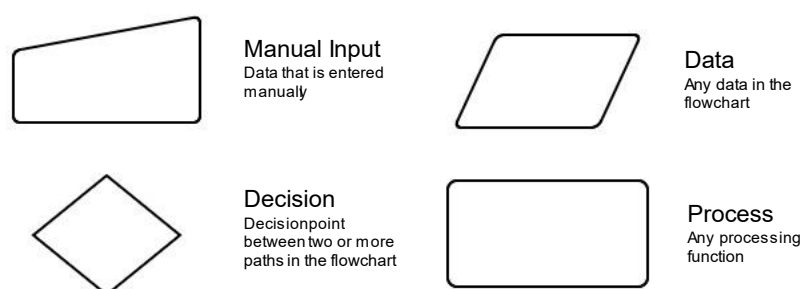


Figure 2 - Description of symbols used in the functional scheme

The initial steps are represented by symbols with only an outgoing arrow, indicating manual input of information by the user. These are grouped as follows:

- General Service and Inventory Information;
- Information on the vehicle fleet, organized by typologies:
 - Number of internal combustion engine vehicles (gasoline, diesel, or hybrid), highlighted in violet in the figure;
 - Number of electric vehicles, highlighted in green in the figure;
- Indication of kilometers traveled using public transportation, highlighted in blue in the figure.

Some of this information then involves a sequence of actions and decisions that define useful data, conversion factors if necessary, and emission factors relevant to defining the carbon footprint.

General Service and Inventory Information input collects information about the services and, in particular, useful data for calculating the carbon footprint intensity, such as the number of operators, and the users served.

Information on the fleet of internal combustion engine vehicles input includes the number of vehicles in service of this technology. The flowchart following this input splits into two branches based on the availability of the information about fuel consumption (enter fuel consumption in liters or not).

If fuel consumption in liters is known, the value for each vehicle must be specified. CO₂ emissions are then calculated using a conversion factor and subsequently an emission factor.



If fuel consumption in liters is not known, it is requested to specify whether to proceed by providing the emission factor for each vehicle or not. In the first case, the user is asked to indicate the kilometers traveled and the corresponding emission factor for each vehicle. Otherwise, only the kilometers traveled must be specified (see Figure 3). While in the first case, CO₂ emissions are calculated directly, in this second case, the system considers an average emission factor for the vehicles and then calculates CO₂ emissions,

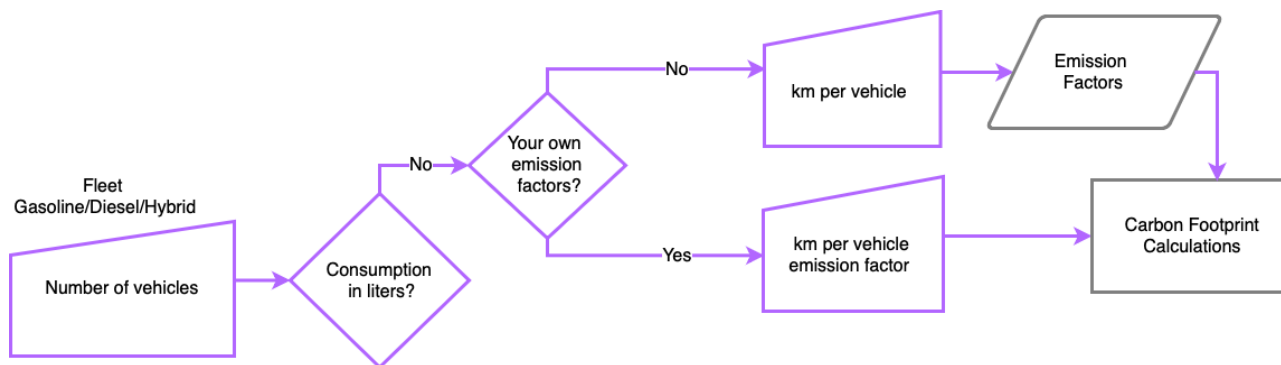


Figure 3 - Flowchart related to *Information on the fleet of internal combustion engine vehicles* input when consumption in liters is not known

For the number of electric vehicles in service, if present, it is necessary to specify whether energy consumption in kWh is known or not.

If known, the value for each vehicle must be indicated; otherwise, only the kilometers traveled by each vehicle must be specified, to which a conversion factor is applied. Whether specifying kWh or kilometers, the process branches into two different paths considering the market-based or location-based approach (see Deliverable 1.1.1 - *Transnational methodology co-design* for a methodological description of the two approaches).

To proceed with the market-based approach, it is required to indicate the percentage of certified renewable electricity used. The remaining amount of electricity is then multiplied by a proper residual mix emission factor to assess CO₂ emissions, see Figure 4.

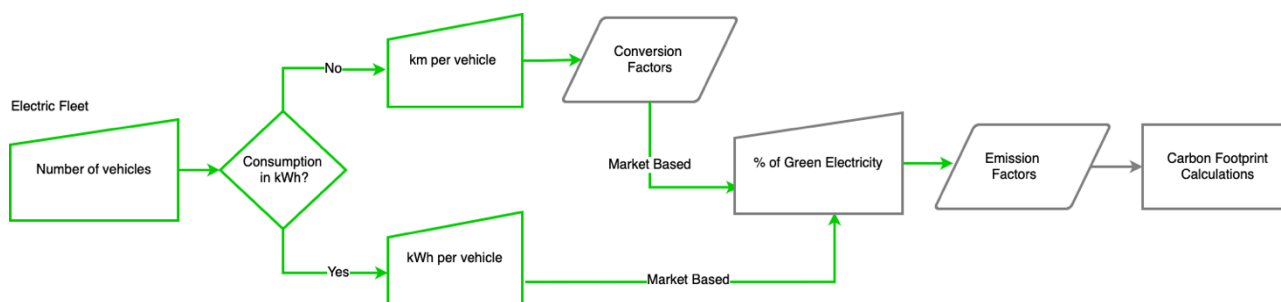


Figure 4 - Flowchart related to *Information on the fleet of electric vehicles* input with Market Based approach.

In the location-based approach, the emission factor is directly applied to consumptions, and CO₂ emissions are assessed, see Figure 5.

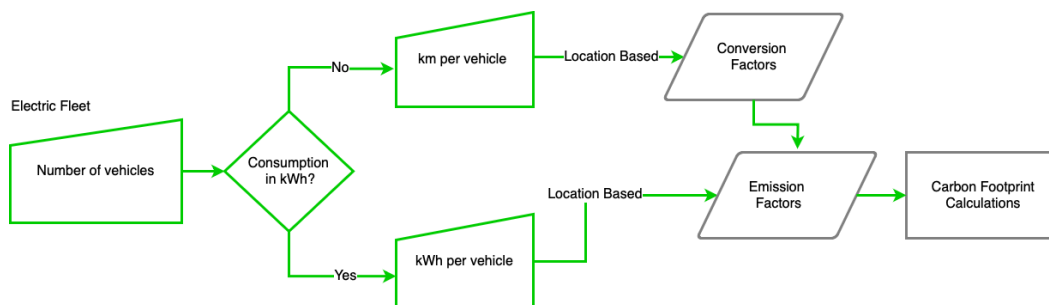


Figure 5 - Flowchart related to *Information on the fleet of electric vehicles* input with Location Based approach.

Information on public transportation input requires the kilometers traveled based on the type of vehicle used (bus, metro, etc.) and provides relative emissions by type according to specific emission factors.

The flow concludes with a process named *Carbon Footprint Calculations*, which synthesizes the results, reporting emissions by vehicle type and the total carbon footprint produced by the service under analysis.



Green LaMiS

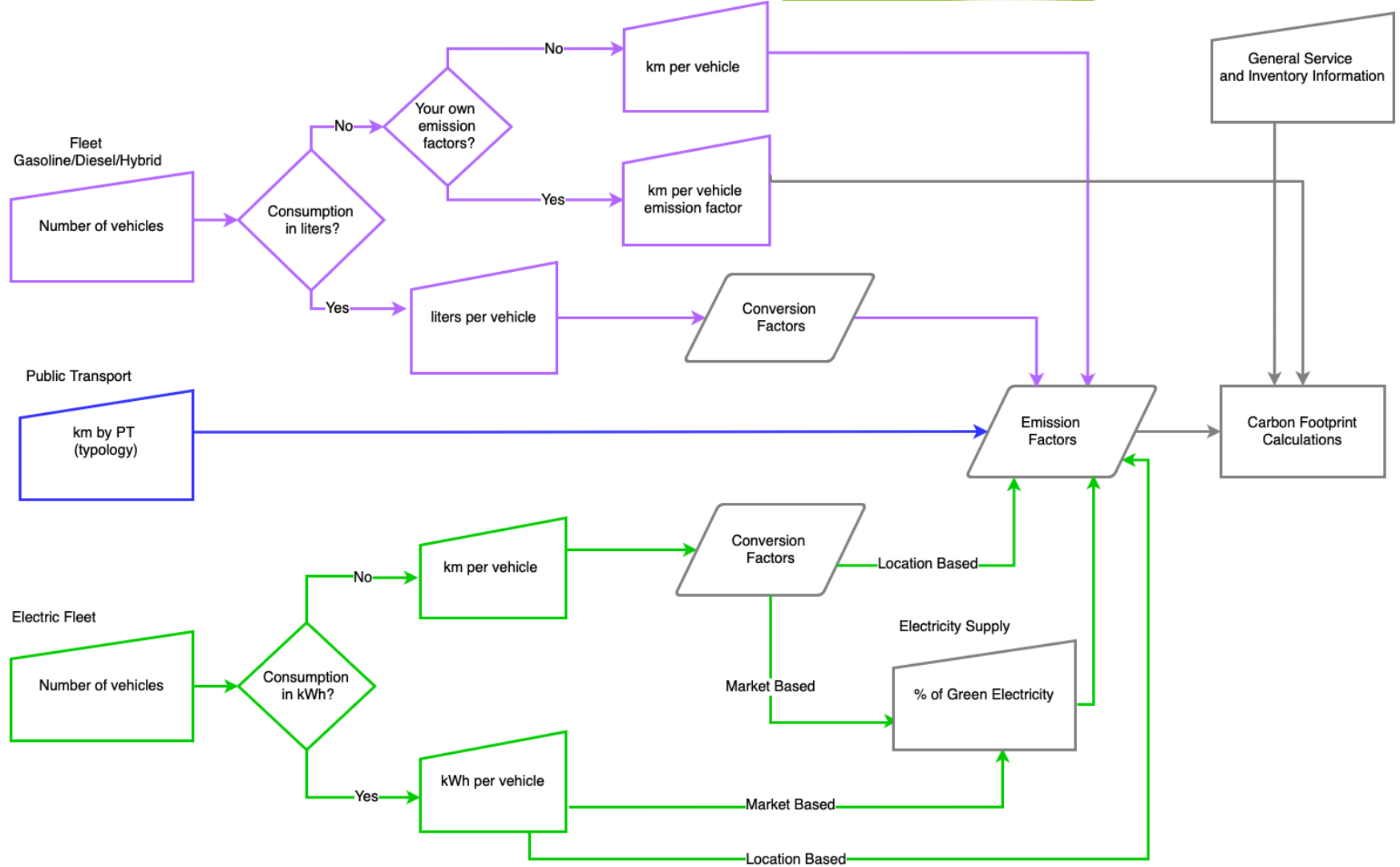


Figure 6 - The functional structure of the tool



5. Conclusion

This document represents the Deliverable 1.2.1 of the Interreg CENTRAL EUROPE 2021-2027 CE0200590 - Green LaMiS Project. The document is developed within the Activity 1.2 - *Development and adoption of the common strategy and action plan of the WP1 -Assessment and monitoring of services' environmental impact for a Joint Action Plan.*

It presents the common assessment tool, designed to estimate the carbon footprint of home-delivered social services (HDSS) for the social enterprises operating in the three cities involved by the Project: Bergamo (IT), Klis (HR) and Szombathely (HU).

The definition of the tool required a preliminary activity of scouting of the HDSS mostly suitable to be considered within the Project. This task was carried out in different steps, involving both the Municipalities and the WP1 team. The result was the selection of a set consisting of 5 HDSS: 2 for Bergamo, 2 for Szombathely and 1 for Klis. The selected services were identified based on two main criteria: completeness of data and potential to be impacted by initiatives.

After the selection of the services, a detailed data collection was deployed to feature such services from different perspectives oriented towards the assessment of their carbon footprint by means of the tool. The area considered were: *General Service and Inventory Information, Fleet and Activity data and Features of the journeys.*

Finally, the functional structure of the tool was designed in compliance with the methodology defined in the Deliverable 1.1.1 - *Transnational methodology co-design.* A detailed description of this structure is reported inside this document, covering all the possible casuistry envisaged by the methodology.



References

- [1] Interreg CENTRAL EUROPE 2021-2027 CE0200590 - Green LaMiS Project - Deliverable 1.1.1 - *Transnational methodology co-design*