

# Green and Inclusive Regional Mobility Solutions

## Demand-Responsive Transport in low density areas

### Intermunicipal Community of Coimbra Region

7<sup>th</sup> March 2024



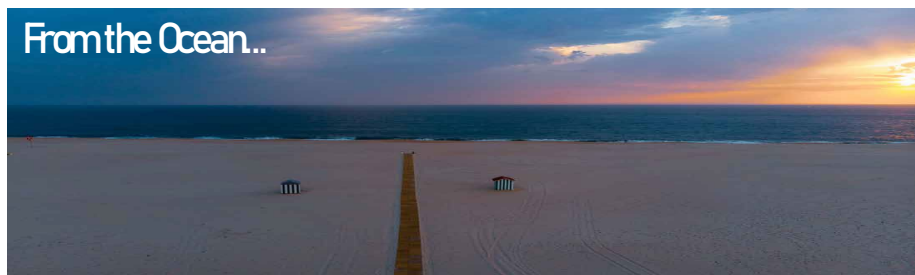
## Coimbra Region Intermunicipal Community (CIM-RC)

***CIM-RC** is a legal public association of 19 interconnected municipalities that share a supra-municipal strategy for regional economic, social and cultural development, located in the heart of Portugal.*

***Vision:** From the Atlantic ocean to the highlands, 19 municipalities growing together and serving around 437.000 citizens.*

***Mission statement:** As one of the most progressive Regions of Portugal, we seek to improve the cohesion, economical and sustainable growth, territorial development of our 19 municipalities and to assure the connection with the central government.*

From the Ocean...



To the mountains.



Portugal

Intermunicipal  
Community of  
Coimbra Region



# Coimbra Region Intermunicipal Community (CIM-RC)

Intermunicipal  
Mobility  
Authority



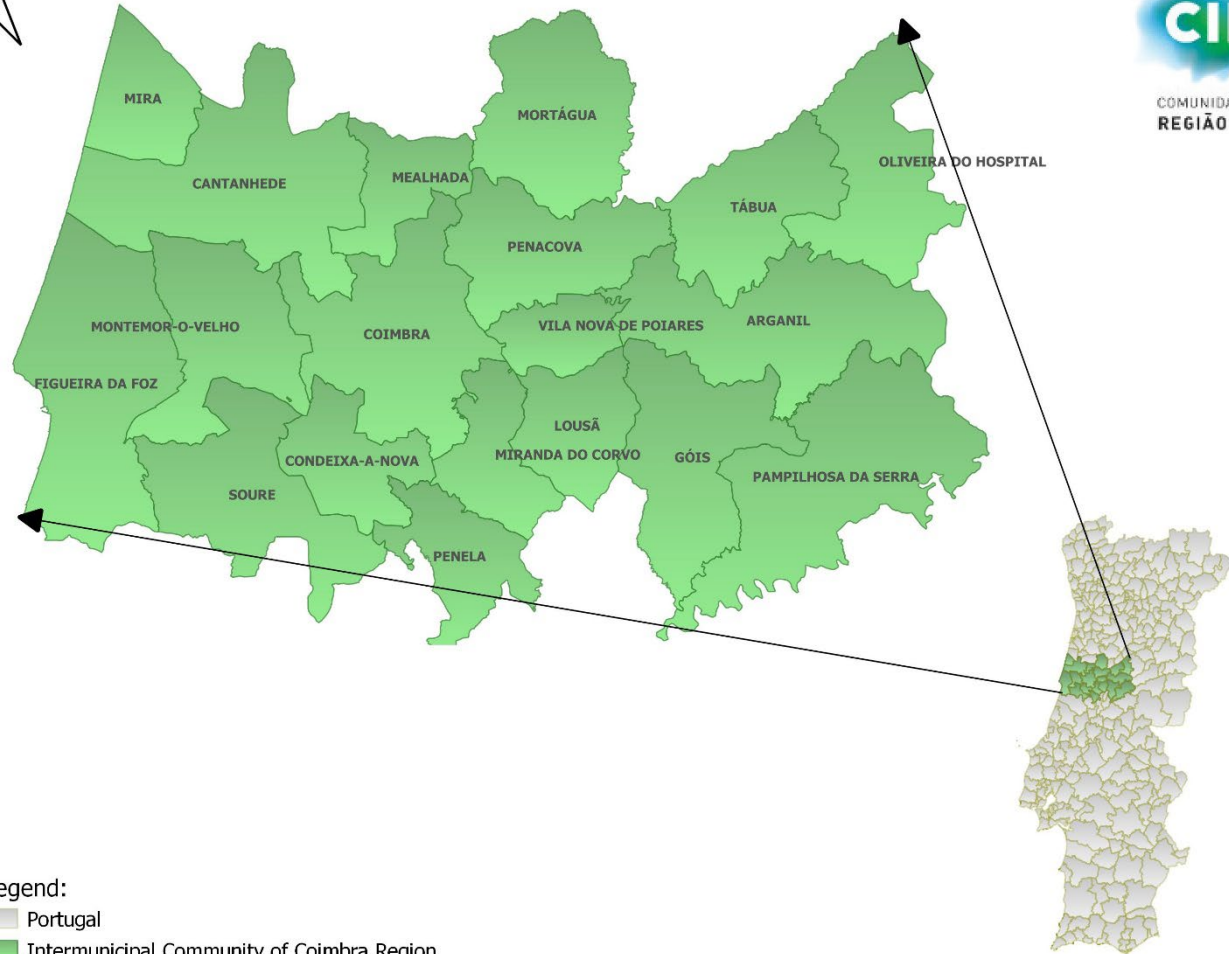
Planning and  
Managing  
Public Transport



+ 200 buses/day  
+6 Million km  
every year

74,8% of comutes are  
made by car

11,8% - population that  
use Public transport

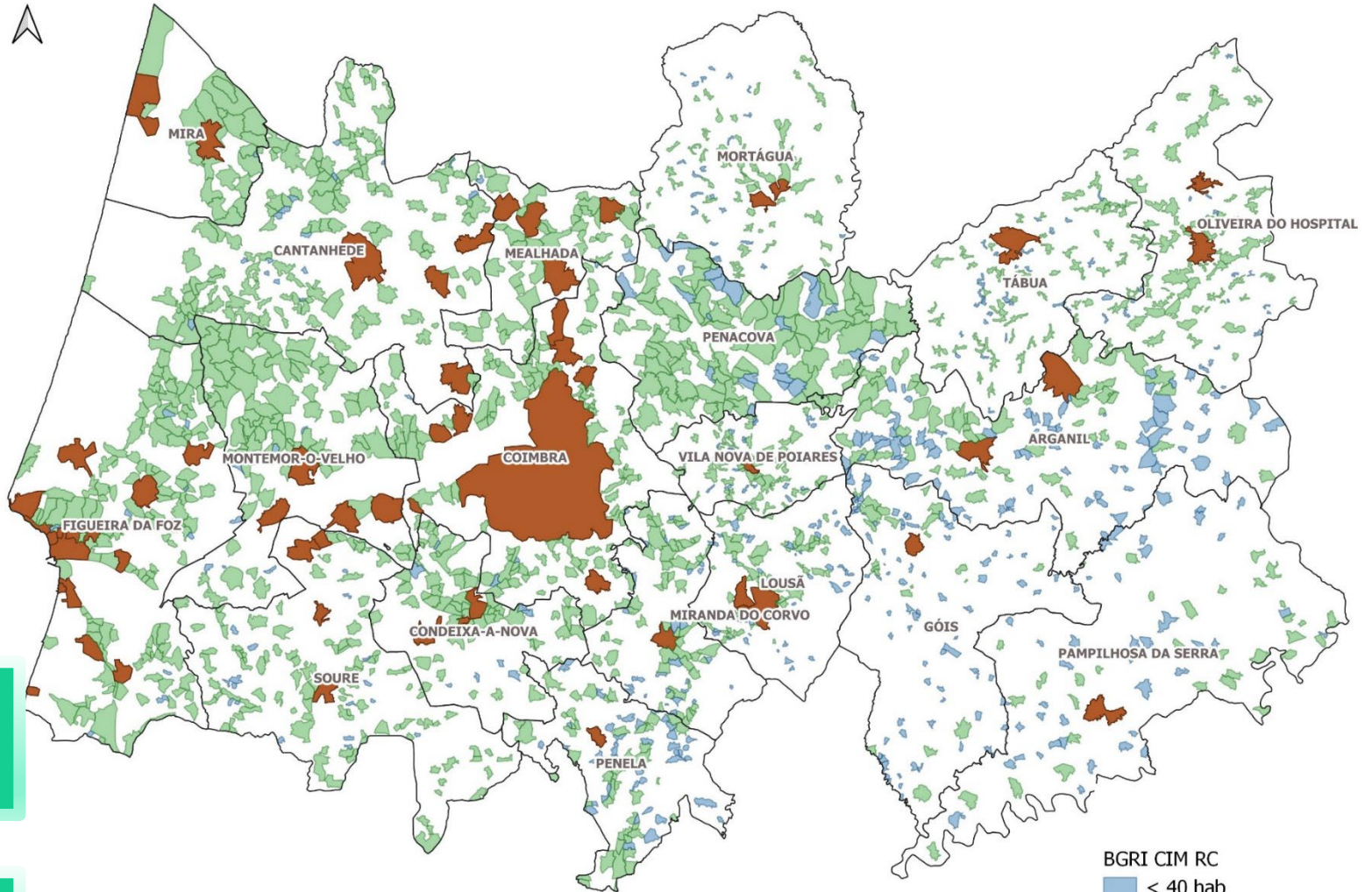


# Coimbra Region Intermunicipal Community (CIM-RC)

CIM RC



1

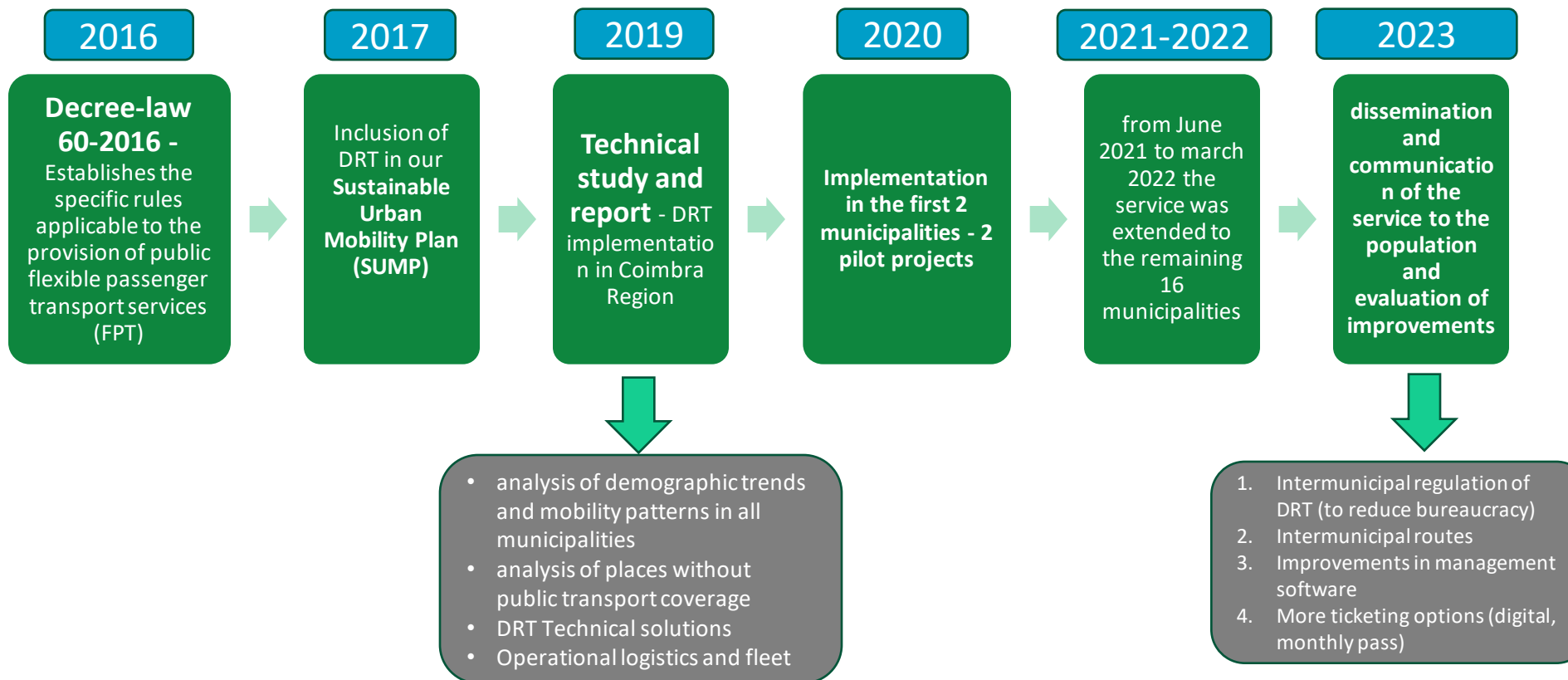


437.000  
population in  
4.336 km<sup>2</sup>

100 inhab/km<sup>2</sup>

BGRI CIM RC  
■ < 40 hab  
■ + de 40 hab e < 800 hab  
■ + de 800 hab

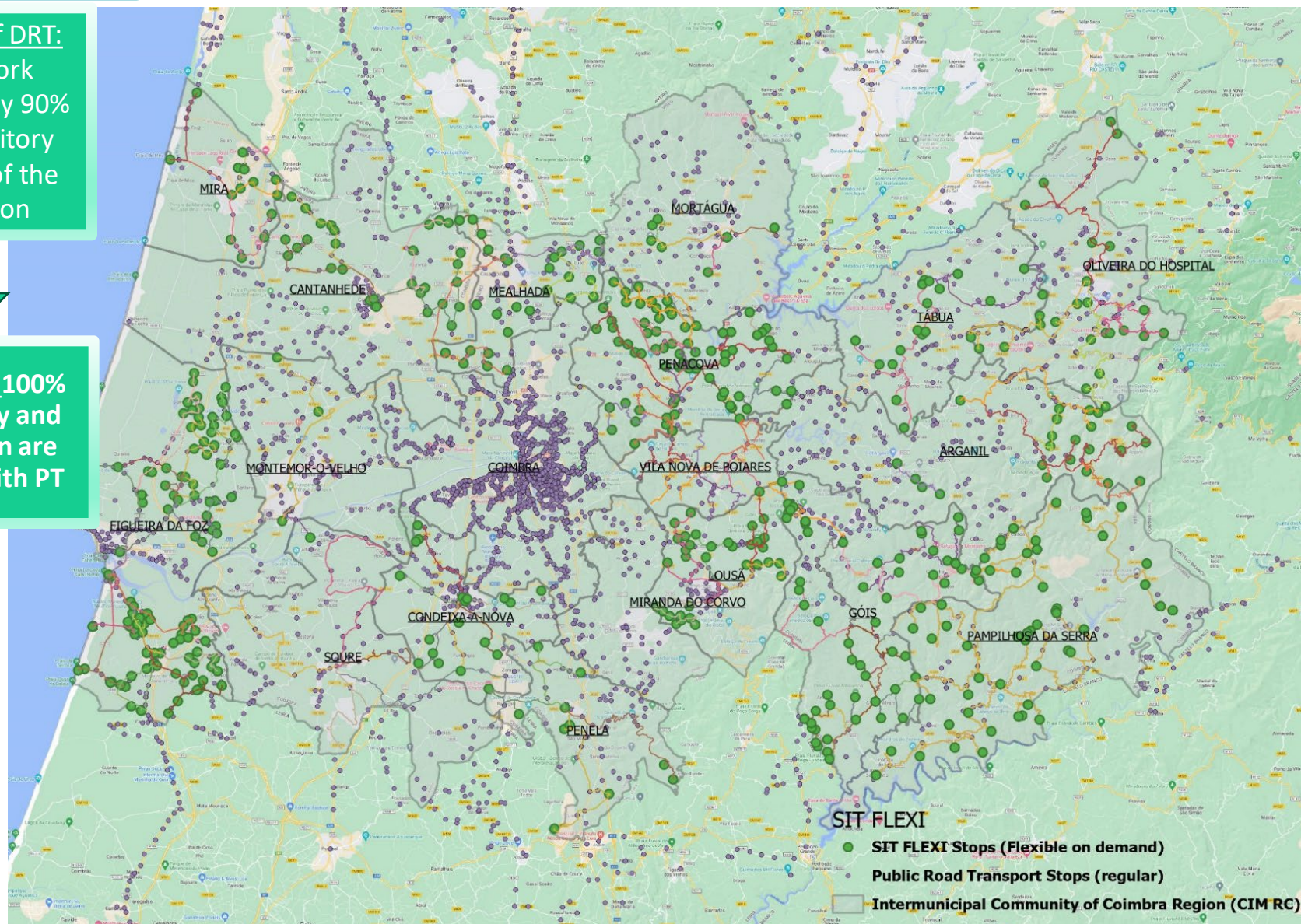
## Coimbra Region DRT Planning and Implementation phases



Previous of DRT:  
PT network  
covered only 90%  
of the territory  
and 93% of the  
population

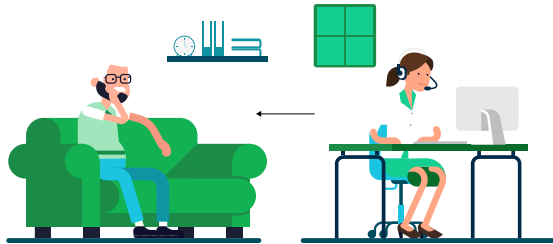


After DRT: 100%  
of territory and  
population are  
covered with PT



1º

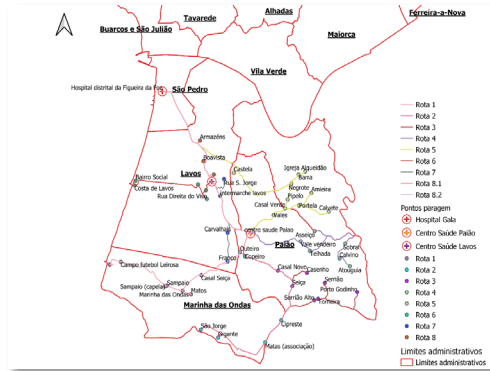
Book the trip



SIT FLEXI works by pre-booking with our booking center (free call).  
 Bookings are made until 3pm of the previous day.  
 The booking center works from mondayto Friday, from 9am to 5:30pm

2º

Route planning and optimization



Route planning and optimization of all 18 municipalities bookings.  
 Delivery of services to taxi operators (until 5:30 pm).

3º

SIT FLEXI trip



The passenger shows up on the scheduled day and time at the SIT Flexi stop. Tickets can be purchased on board and cost between 1.05 Eur and 4.60 Eur.

How does it Work?

- The SIT Flexi provides public transport by taxi where there is no PT or the PT has a lack of service;
- It's similar to regular public transport, with timetables, stops and routes, but the service is realized only if and when we have bookings;
- The passenger books the travel through a phone call to our call center in the previous day;
- Call center (free for all users) is available from Monday to Friday and reservations can be made until 03.00pm the day before the travel;
- **Our operator prepare the route planning and schedule the travel with taxi driver;**
- The passenger picks up taxi on the scheduled day and time at the SIT Flexi stop;
- Tickets can be purchased on board and cost between 1.05 Eur and 4.60 Eur to the passenger (the same amount as a bus ticket);
- **Taxi travel costs the same as a normal taxi service: We pay the taxi driver the difference between taxi travel cost and "bus ticket" paid by passenger;**
- Routes, timetables and stops can be adapted according to citizens needs;

## SIT FLEXI solution – Mealhada municipality example

Rota	Lugares	Origem	Destino	Horário Chegada Destino	Horário regresso origem	Pontos paragem	Tipo	Periodicidade	Época
Rota 1	Carvalheiras, Louredo, Sta Cristina, Quinta do Valongo, Pego do Peixe	Carvalheiras	1º Largo da CM Mealhada 2º Centro de Saúde Mealhada 3º Unidade Saúde Pampilhosa 4º Estações da CP (Mealhada, Pampilhosa e Luso)	08h30 13h30	12h30 17h00	5	assegura ligação ao Centro da Mealhada, Infraestruturas de saúde e <b>rebatimento com Ferrovia</b>	2ª a 6ª-feira	Anual
Rota 2	Salgueiral, Monte Novo, Várzeas, Lameira de S. Pedro, Lograssol, Vacariça	Salgueiral	1º Largo da CM Mealhada 2º Centro de Saúde Mealhada 3º Unidade Saúde Pampilhosa 4º Estações da CP (Mealhada, Pampilhosa e Luso)	08h30 13h30	12h30 17h00	6	assegura ligação ao Centro da Mealhada, Infraestruturas de saúde e <b>rebatimento com Ferrovia</b>	2ª a 6ª-feira	Anual
Rota 3	Grada, Quinta Branca, Ferraria, Pisão, Cavaleiros, Barcouço	Ferraria	1º Largo da CM Mealhada 2º Centro de Saúde Mealhada 3º Estações da CP (Mealhada, Pampilhosa e Luso)	08h30 13h30	12h30 17h00	6	assegura ligação ao Centro da Mealhada, Infraestruturas de saúde e <b>rebatimento com Ferrovia</b>	2ª a 6ª-feira	Anual
Rota 4	Póvoa do Garção, Arinhos, Ventosa do Bairro, Antes	Póvoa do Garção	1º Largo da CM Mealhada 2º Centro de Saúde Mealhada 3º Estações da CP (Mealhada, Pampilhosa e Luso)	08h30 13h30	12h30 17h00	4	assegura ligação ao Centro da Mealhada, Infraestruturas de saúde e <b>rebatimento com Ferrovia</b>	2ª a 6ª-feira	Anual
Rota 5	Silvã, Mala, Canedo	Silvã	1º Largo da CM Mealhada 2º Centro de Saúde Mealhada 3º Unidade Saúde Pampilhosa 4º Estações da CP (Mealhada, Pampilhosa e Luso)	08h30 13h30	12h30 17h00	3	assegura ligação ao Centro da Mealhada, Infraestruturas de saúde e <b>rebatimento com Ferrovia</b>	2ª a 6ª-feira	Anual
Rota 6	Carqueijo	Carqueijo	3º Unidade Saúde Pampilhosa	08h30 13h30	12h30 17h00	1	assegura ligação à Pampilhosa	2ª a 6ª-feira	Anual
Rota 7	Posto de turismo Mealhada		4º Luso (Fonte S. João) 5º Bussaco (Palácio)	08h30 13h30	12h30 18h30	1	assegura ligação ao Luso e ao Bussaco	2ª a 6ª-feira	Anual
Rota 8 - Período não escolar	No período não escolar todos os lugares que não tenham cobertura horária de serviço de transporte público regular podem efetuar reservas de SIT FLEXI.		1º Largo da CM Mealhada 2º Centro de Saúde Mealhada 3º Unidade Saúde Pampilhosa 4º Estações da CP (Mealhada, Pampilhosa e Luso)	08h30 13h30	12h30 17h00	todos os que cumprirem o requisito	Assegura ligação à Mealhada e Pampilhosa	2ª a 6ª-feira	Período não escolar

All places without PT coverage connected to city center (health center, public services) and trains stations

2 departure times and 2 return times

Specific routes for non-school periods (most places only have PT coverage during school time)

Extra connection at midday for places that only have two bus timetables (one in the morning and one in the evening) SIT FLEXI offers one at midday.

exceptional situations have extended flexibility upon presentation of proof (health appointments and treatments)



Most relevant KPI:



number of registered users:

1210



Places covered by the service

> 630

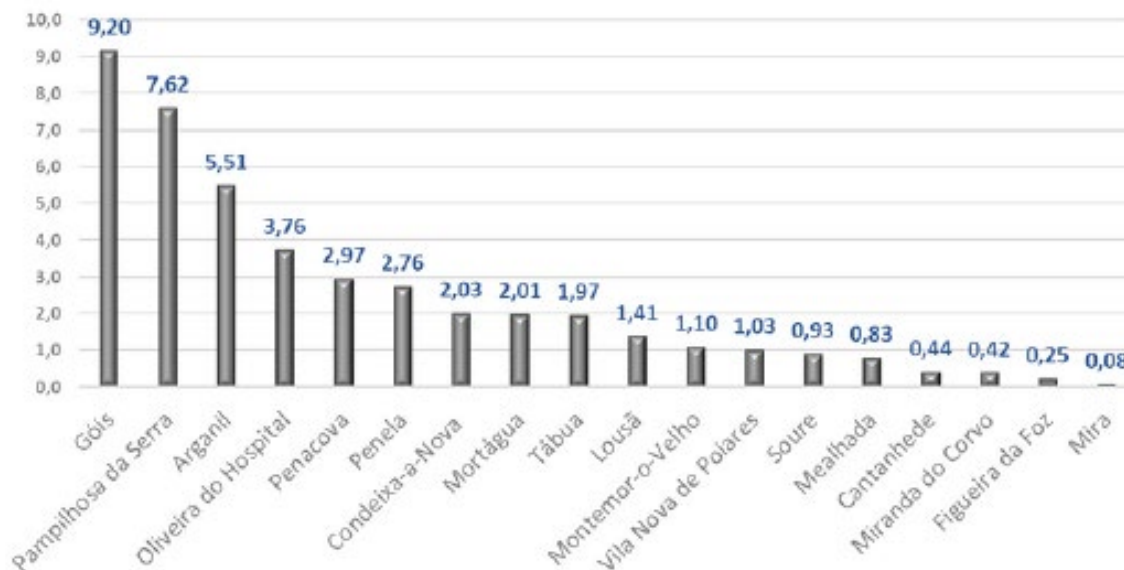
Nº planed routes

153

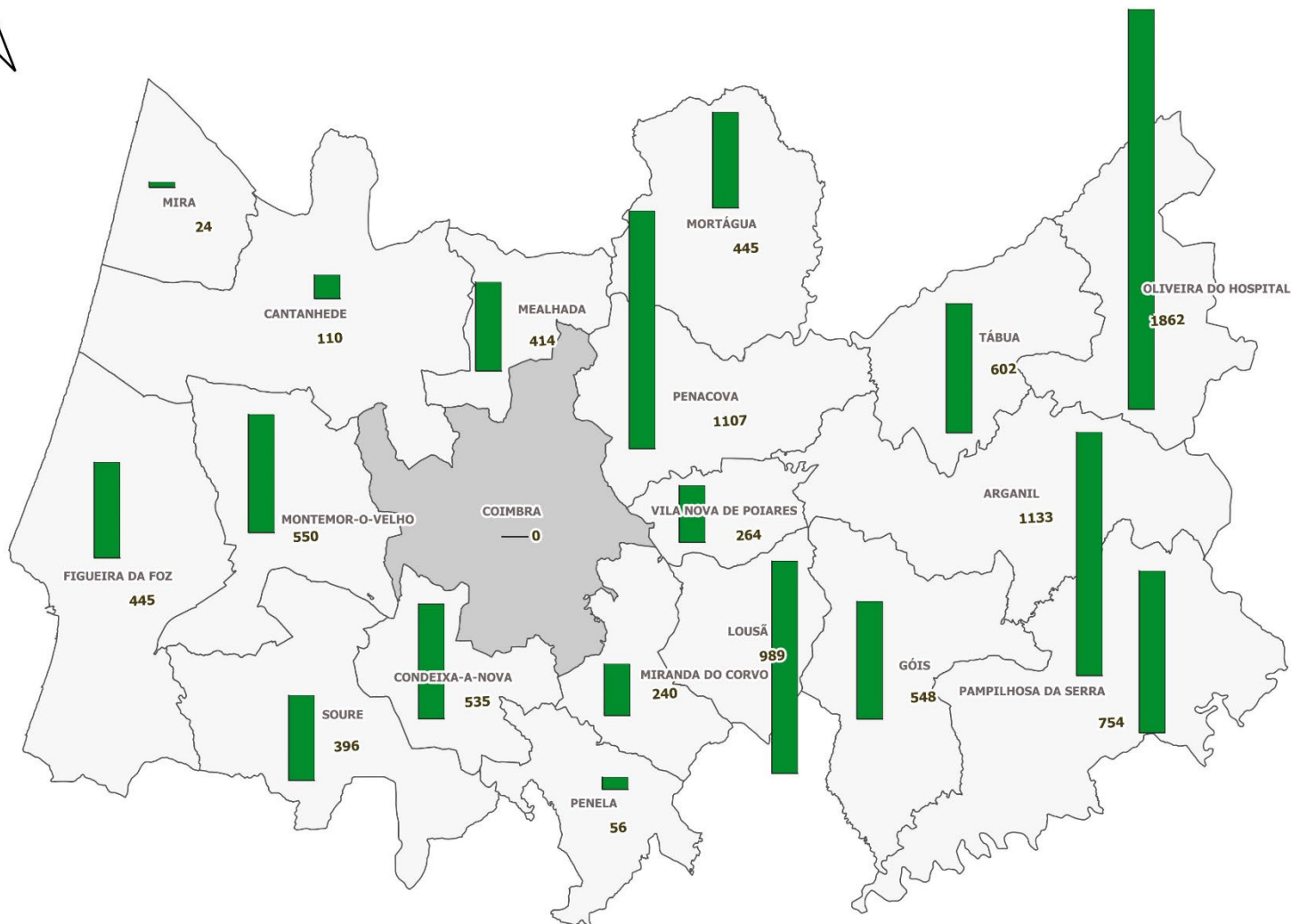
DRT operators (táxi)

130

Bookings per 1000 inhabitants (gamification in the monthly newsletter)



## Spatial distribution of bookings per municipality



■ Total Reservas SIT FLEXI por município

## Economic Key Performance Indicators (KPI) matrix

ID	Key Performance Indicators	jan 23	feb 23	mar 23	apr 23	mai 23	jun 23	jul 23	aug 23	sep 23	oct 23	nov 23	dec 23	2023 (Total)	2023 (average)
1	Total cost service (2+3) (in EUR)	7 998,90 €	8 280,12 €	10 769,64 €	8 982,08 €	10 465,06 €	12 647,98 €	13 602,15 €	9 681,08 €	10 690,61 €	9 920,54 €	10 187,43 €	9 346,03 €	122 571,63 €	7 023,41 €
2	Value paid to operators (1-3) (in EUR)	6 442,80 €	6 502,52 €	8 609,07 €	7 169,38 €	8 254,36 €	10 045,43 €	10 599,05 €	7 558,96 €	8 409,96 €	7 972,59 €	8 158,03 €	7 337,95 €	97 060,11 €	5 669,36 €
3	value of ticketing revenue (in EUR)	1 556,10 €	1 777,60 €	2 160,57 €	394,00 €	485,00 €	566,00 €	694,00 €	480,00 €	2 280,65 €	1 947,95 €	2 029,40 €	2 008,08 €	25 511,52 €	1 354,05 €
4	distance travelled (km, full)	6674,98	7252,66	8576,52	7464,06	8706,62	10391,16	11210,32	7880,24	8786,62	8186,92	8431,62	7713,74	101275	6326,19
5	distance travelled (km, full+empty)	13350	14505	17153	14928	17413	20782	22421	15760	17573	16374	16863	15427	202551	12652,39
6	n° of routes executed	276	273	357	281	331	379	390	329	327	323	324	283	3873	
7	n° of trips (each booking has 1 or 2 trips)	507	507	662	533	615	712	725	609	632	600	604	536	7242	462,3
8	n° of bookings	355	382	485	394	485	566	694	480	511	454	469	445	5720	320,7
9	n° places served with SIT FLEXI (planned)	584	584	584	584	584	584	584	584	584	584	584	584	584	32
10	Cost coverage (3/1) (in %)	19,45%	21,47%	20,06%	20,18%	21,12%	20,58%	22,08%	21,92%	21,33%	19,64%	19,92%	21,49%		19,28%
11	average cost per km traveled (in full) (1/4) in EUR	1,20	1,14	1,26	1,20	1,20	1,22	1,21	1,23	1,22	1,21	1,21	1,21		1,11
12	average cost per km traveled (in full+empty) (1/4) in EUR	0,60	0,57	0,63	0,60	0,60	0,61	0,61	0,61	0,61	0,61	0,60	0,61		0,56
13	average cost per trip (1/6) in EUR	15,78 €	16,33 €	16,27 €	16,85 €	17,02 €	17,76 €	18,76 €	15,90 €	16,92 €	16,53 €	16,87 €	17,44 €		15,19 €
14	average cost per booking (1/7) in EUR	22,53 €	21,68 €	22,21 €	22,80 €	21,58 €	22,35 €	19,60 €	20,17 €	20,92 €	21,85 €	21,72 €	21,00 €		21,90 €
15	n° of bookings per route (7/6)	1,29	1,40	1,36	1,40	1,47	1,49	1,78	1,46	1,56	1,41	1,45	1,57		1,39
16	average cost per served place (1/8) in EUR	13,70 €	14,18 €	18,44 €	15,38 €	17,92 €	21,66 €	23,29 €	16,58 €	18,31 €	16,99 €	17,44 €	16,00 €		219,48 €
17	average distance per trip (4/13) in km	13,17	14,31	12,96	14,00	14,16	14,59	15,46	12,94	13,90	13,64	13,96	14,39		19,73

## Survey results (175 passengers, in 2021)

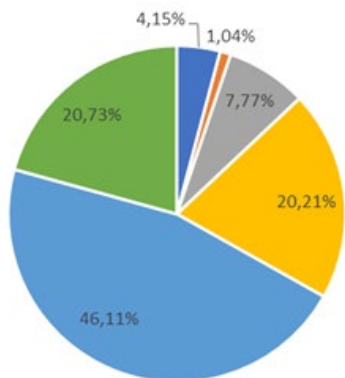
### Average age of SIT FLEXI passengers

SIT FLEXI - MÉDIA DE IDADE PASSAGEIROS

69,57   
CIM|RC

### Age of SIT FLEXI passengers

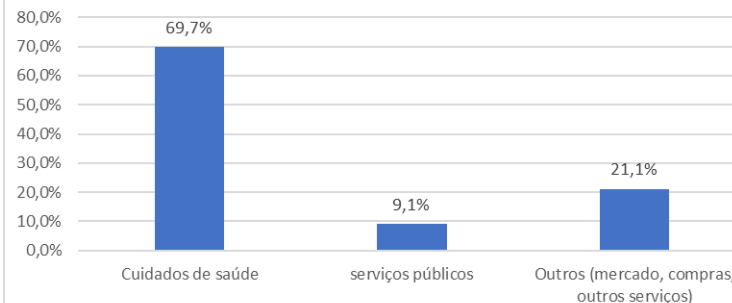
SIT FLEXI - Idade dos utilizadores



■ <= 18 anos ■ 19-30 anos ■ 31-50 anos ■ 51-65 anos ■ 66-80 anos ■ > 81 anos

### Goal/purpose of the SIT FLEXI rides

SIT FLEXI - motivo de viagem



## DRT biggest challenges in Coimbra Region

- Demographic characteristics (elderly population, low education levels in low density areas) makes it difficult to implement information systems for bookings and ticketing;
- Improve intermodal connections between the DRT and buses lines;
- Managing DRT operators (more than 130):
  - DRT operators resist to the implementation of new technologies;
  - Taxi drivers' digital illiteracy is a challenge to overcome regarding this project.
  - Some taxi drivers still issue paper invoices or do not have an email account. Therefore, it is required to urgently provide them with the required digital skills (we are working closely with taxi drivers representatives to cope with this situation);
  - Public procurement is slow and bureaucratic (we are working closely with Portuguese National Mobility Authority to tackle it);

## DRT next steps in Coimbra Region

- ✓ Extend services to intermunicipal routes;
- ✓ Provide taxi fleet adapted for users with disabilities;
- ✓ Implement technological and digital improvements in the service (online bookings, new forms of ticketing (online, monthly pass));
- ✓ Reinforce the connection with remaining transport modes (Bus, train and metro);
- ✓ Study and evaluate the regular public transport routes with less demand and convert them to flexible transport routes on demand;
- ✓ Boost our communication and dissemination campaigns.

# Thank you!

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CIM RC – Comunidade Intermunicipal  
da Região de Coimbra

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