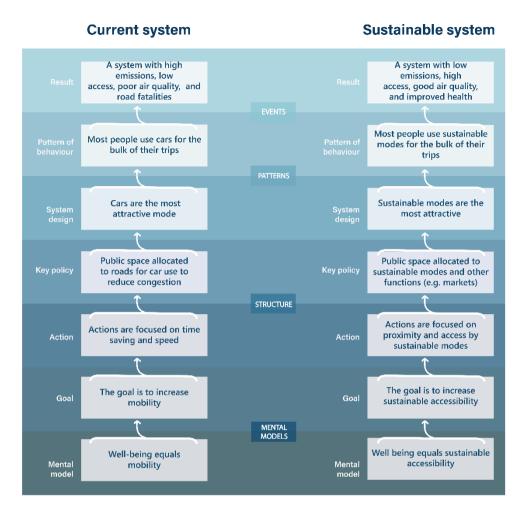
# **2** Envision

This Chapter describes the mental models underlying transport systems and policies guided by the goal of mobility. It explains why a system focused on mobility is not fit for the purpose of achieving emission reductions and high well-being outcomes and calls for the redefinition of the transport system goal as sustainable accessibility. It shows that systems organised around sustainable accessibility can take different shapes in different areas, building on insights from an exercise covering Dublin, Cork, Sligo and Kildare. A system's goal establishes its purpose or function (Meadows,  $2008_{[1]}$ ). It can be thought of as the system's "guiding star". A crucial step towards achieving desired outcomes in transport systems is thus to understand whether the goals guiding the design of these systems can make them fit for the purpose that is established as desirable (e.g. improving well-being, significantly reducing GHG emissions).

Goals are, in turn, greatly influenced by mental models.<sup>1</sup> Mental models are the unquestioned, often implicit and unconscious, assumptions through which humans understand the world. They determine what people see and fail to see, and influence the targets they set, the actions they take and the types of systems they create (Systems Innovation, 2021<sub>[2]</sub>; Saltmarshe, 2018<sub>[3]</sub>).

Irish transport systems (and transport systems across the globe) have been shaped around the goal of mobility<sup>2</sup> (physical movement), based on the perception (mental model) that high mobility leads to high well-being. Evidence suggests that this is not necessarily true and that systems structured around the goal of mobility foster (and sometimes impose) growing car use, whereas the opposite is needed to meet Ireland's GHG reduction targets (see Chapter 3 for more on this). This is not to say that all mobility increases are bad, and indeed different transport volumes (e.g. vehicle-kilometres, passenger-kilometres, trips) may vary in different ways due to different circumstances (e.g. a shift from car travel to public transport could make vehicle-kilometres go down while maintaining the same amount of passengerkilometres, due to higher load factors in public transport). Nonetheless, what this chapter argues is that a system structured around accessibility, where there is proximity between people and places, will tend to reduce overall transport volumes (total vehicle and passenger-kilometres travelled) for a number of reasons: not only trips can be shifted from car to public transport, but distances can also be shortened: which increases the viability of active and micro-mobility modes for trips currently made by cars and public transport, while also shortening the distances of trips remaining in cars and public transport. Finally, an enhanced accessibility system would be more conducive to people having the possibility to fulfil multiple needs with one rather than multiple trips, which can result in a lower number of overall trips. When mobility is the proxy for increased well-being, future scenarios where total mobility is reduced may be discarded (including because accessibility improvements are not measured): closing the door to actions and policies (such as those discussed in chapter 3) that could importantly improve well-being and significantly reduce GHG emissions (including via mobility reductions).

Based on the iceberg analogy outlined in the Overview Chapter, Figure 2.1 illustrates the power of challenging ingrained mindsets and redefining system goals. The left-hand side shows how the perception of mobility as a proxy for well-being has led to policies that prioritise time savings and speed, ignoring the importance of creating proximity, and as a consequence, allocating the majority of public space to cars. These actions have led to systems structured around driving, which foster growing car use, which in turn leads to high emissions, air pollution, poor health and unequal access to opportunities. The right-hand side shows how the perception of sustainable accessibility in transport systems as the proxy for well-being can lead to policies that prioritise creating proximity, the allocation of roads in a balanced manner that grants priority to less carbon and space intensive modes, and the redesign of transport systems. Systems designed to deliver sustainable accessibility foster the use of active and shared modes, a pattern of behaviour more aligned with the Irish GHG reduction targets and the improvement of well-being. The growing use of active and shared modes can lead to low emissions, improved air quality and health, and more equal access to opportunities (OECD, 2021[4]).



## Figure 2.1. The transformative potential of redefining policies and system goals



**Redefining the Irish transport system's goal** is necessary for meeting climate targets and is therefore the first recommendation of this report. While not an easy step, as it requires challenging ingrained mindsets as well as revisiting measurement frameworks and models, redefining the system's goal has the potential to help Ireland meet its targets while improving well-being. Evidence suggests that transport systems designed to deliver sustainable accessibility can trigger patterns of behaviour aligned with GHG reduction targets while improving air quality, health, safety and equity (Silva and Larsson, 2018<sub>[5]</sub>; ITF, 2019<sub>[6]</sub>).

Section 2.1 explains why mobility is neither a good proxy for well-being nor a good system and policy goal. Section 2.2 shows why redefining the transport system's goal can help Ireland meet its reduction targets while improving well-being. Section 2.3 summarises views expressed during a series of workshops held in Ireland in April 2022 in which Irish stakeholders envisioned transport systems guided by the goal of sustainable accessibility in urban, suburban and rural areas.

#### 2.1. Transport systems with mobility as their goal

Transport systems in Ireland and across the globe are organised to increase mobility (maximising physical movement) (Chapman, 2019<sub>[7]</sub>). The focus on mobility is linked to a deeply ingrained idea that people are better off when they can travel as fast, as far and as flexibly as possible (OECD, 2021<sub>[4]</sub>) (Box 2.1).

#### Box 2.1. Mobility and GDP: a similar mindset

The focus on mobility at the transport system level is similar to the focus on GDP at the economy level. In both cases, means and ends are conflated, and the conflation has locked countries into unsustainable systems.

Measuring well-being using GDP can be misleading: for example, GDP can correlate negatively with well-being dimensions such as air quality (OECD,  $2011_{[8]}$ ). Treating GDP as an indicator of social progress sustains a growth-oriented system, leading to energy demand increase in the upcoming decades (Hickel et al.,  $2021_{[9]}$ ).

Furthermore, linking well-being to high demand and seeing high demand as inevitable has hindered policy makers from envisioning an increase in well-being through low-demand systems. It has also led to an under-appreciation of the potential of so-called low-demand scenarios (Grubler et al., 2018<sub>[10]</sub>). Yet, as the Intergovernmental Panel on Climate Change (IPCC) points out, rapid growth in demand for energy and materials reduces the chances of reaching stringent emissions reduction targets (IPCC, 2018<sub>[11]</sub>), making current high-demand systems ill-adapted to meeting international climate goals (and to promoting well-being).

According to IPCC authors, demand-side mitigation policies, encompassing "changes in infrastructure use, end-use technology adoption, and socio-cultural and behavioural change", could unleash emission reductions of 40 to 70% in end-use sector, compared to baseline scenarios (IPCC, 2018<sub>[12]</sub>).

Evidence suggests that mobility is a misleading proxy for well-being, as high or growing mobility can reflect deteriorating, rather than improved, access and well-being (Ferreira, Beukers and Brömmelstroet, 2012<sub>[13]</sub>; ITF, 2019<sub>[6]</sub>). For example, mobility increases when everyday services are further away (e.g. when local grocery stores close down) and people need to drive further to meet their daily needs. In this case, well-being does not improve and can even deteriorate. High mobility (e.g. traffic volumes) can also be associated with well-being reductions via air pollution, road injuries and lack of physical activity (TfL, 2017<sub>[14]</sub>), and can conceal widening accessibility gaps between population groups: when private cars are the only or most convenient way to travel to places of interest, total traffic volumes are high but less affluent population groups may increasingly have less access to opportunities (Mattioli, 2013<sub>[15]</sub>).

The idea of mobility as a good proxy for well-being leads to policy action that:

- ignores the need for proximity and disregards the trade-offs between using space for transport and other functions
- maximises time savings and speed
- sees congestion as the problem to be solved and road capacity expansion as the solution
- closes the door to actions that could increase accessibility and reduce emissions via mobility reductions.

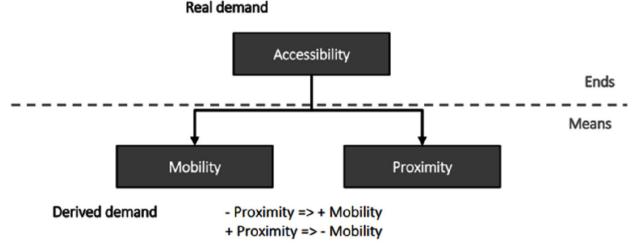
A focus on mobility has diverted policy makers' attention away from land use considerations that could bring daily services closer to people (ITF, 2017<sub>[16]</sub>). This has in turn segmented the planning and responsibilities of transport and land-use/housing authorities, often minimising (if at all considering) the role that land-use and housing decisions play in the performance of transport systems (including in terms of GHG emissions). The result is mobility-intensive and proximity-poor systems in which space-intensive and "fast" transport modes (e.g. private cars) are privileged.

In Dublin, cycling was ubiquitous until the 1950s (Hanna,  $2015_{[17]}$ ). However, as cars became more affordable and a symbol of middle-class success and modernity, the city was remade for the motor age, and cyclists started to disappear from statistics, maps and urban plans (Hanna,  $2015_{[17]}$ ). Traffic

regulations, street design and the construction of inner-city motorways shifted responsibility for safety away from motorists. Instead, non-motorists were to remain in their allocated street sections, make themselves visible to motorists, and not slow car traffic down (Hanna,  $2015_{[17]}$ ). This is a tendency observed in other parts of the world. Te Brömmestroet ( $2020_{[18]}$ ) finds that efficiency became the new frame for mobility, replacing the earlier social construct of the street as a place to socialise, play and move at human speed.

Proximity is essential for creating accessibility. As Figure 2.2 illustrates, accessibility is the interaction of mobility and proximity (Silva and Larsson,  $2018_{[5]}$ ). When attention is placed on mobility (one of the means), the importance of creating proximity is automatically ignored. Contrarily, shifting attention towards accessibility (the ends) allows policy makers to see the importance of creating proximity of people to places. It also allows to see that creating proximity is challenging in systems in which a majority of the space is allocated to creating mobility, especially via space-intensive modes such as private cars (Crozet,  $2020_{[19]}$ ), and where land-use decisions have separated uses (e.g. residential from commercial).

# Figure 2.2. Accessibility, mobility and proximity



Source: (Silva and Larsson, 2018[5]), https://doi.org/10.1787/2223439X.

When mobility is the goal, metrics such as vehicle-kilometres or number of trips are the measures of "success" (ITF,  $2017_{[16]}$ ; Silva and Larsson,  $2018_{[5]}$ ; OECD,  $2019_{[20]}$ ) and infrastructure official's role is to cater for increasing travel (ITF,  $2019_{[6]}$ ). Mobility indicators narrow down the problem to maximising physical movement, and in this way, they fail to provide accurate information about changes in access to goods, services, activities and destinations (ITF,  $2017_{[16]}$ ). The importance of nonmotorised modes, land-use decisions, mobility substitutes (e.g. home office, delivery services), etc. are not reflected. Vehicle-kilometres, or other indicators focused on traffic, disregard or at least reduce the value of public transport, as these indicators do not account for public transport's high load factors (passengers per kilometre travelled). Indicators such as passenger-kilometres capture the value of public transport in a better way. Nonetheless, passenger-kilometres poorly reflect the value of active modes and many shared services (e.g. micro-mobility and e-bikes), as these are not high-occupancy services. Measuring the number of trips can better reflect, to a certain extent, the value of non-motorised modes; however, measuring the number of trips still gets policy making into a "more [mobility] is better" logic as, for instance, the fact that people could be better off if they could meet several needs in one single trip is ignored (ITF,  $2017_{[16]}$ ; Silva and Larsson,  $2018_{[5]}$ ; OECD,  $2019_{[20]}$ ).

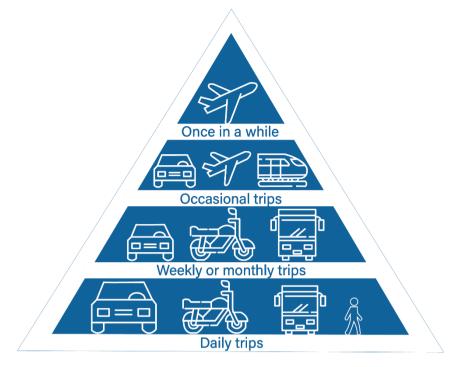
The Common Appraisal Framework (CAF) for Transport, which guides transport investment projects in Ireland, is an example of a mobility-focused framework. While qualitative aspects such as social inclusion and environmental sustainability have been included in the latest update (since 2016), the framework still

focuses on transport investment that shortens travel times and boosts economic growth (Department of Transport, 2021<sub>[21]</sub>). According to the Department of Transport, the Common Assessment Framework (CAF) is currently undergoing a substantial update. As part of this update, the new draft Transport Appraisal Framework (TAF) is planned to be published later this year. One of the issues which the TAF is attempting to address is the centrality of the value of time in the appraisal process. The new TAF will give a greater weight and consideration to environmental benefits and costs and other issues related to the strategic alignment of projects. In the draft update of the CAF, the weighting of multi-criteria analysis results is still considered optional, although the text noting that the economic criterion should be given a higher weight has been removed. The new SMP also includes, as part of its action list, the development and update of appraisal guidance and review processes based on the most relevant and applicable evidence (Department of Transport, 2022<sub>[22]</sub>), and the Department of Public Expenditure and Reform is working with the OECD regarding this.

The conflation of increased mobility with increased well-being also leads to the notion that travel demand (especially car-based) needs to keep growing, or at least cannot decrease. With this mindset (coupled with the emphasis on travel time savings), a large part of policy makers' role is to solve the problem of traffic congestion in order to shorten travel times for motorists. Since congestion results from the mismatch between the number of vehicles on the roads and the roads' capacity to handle them, if the number of vehicles cannot decrease, then road capacity needs to increase. As shown in Chapter 3, the number of vehicles is not a given, nor does the expansion of road capacity solve congestion.

Organised around mobility, it is not surprising that the current transport system in Ireland has led to high average annual distances travelled by car and low performance in international comparisons for sustainable accessibility. Between 2010 and 2019, Irish people travelled 16,400 kilometres per year on average, above the EU average of 11,300 kilometres (Odyssee-Mure, 2022<sub>[23]</sub>). Dublin ranks 108th out of 121 European cities in terms of the number of places of interest (e.g. schools, hospitals, shops and green spaces) accessible within 15 minutes' walk (ITF, 2022<sub>[24]</sub>). Recent work by the International Transport Forum (ITF) finds that more than 10% of the city's population lives in neighbourhoods where walking is difficult due to poor planning, lack of dedicated paths and high traffic volumes (ITF, 2019<sub>[25]</sub>). Public transport coverage is also poor in the Dublin area: the public transport network covers less than one quarter (23%) of the commuting zone (ITF, 2019<sub>[25]</sub>). Efforts are, however, on-going (e.g. via the initiative BusConnects, Metrolink) to increase network coverage (see chapter 3).

The pyramid in Figure 2.3 illustrates the behaviour that mobility-centred systems encourage in terms of the modal share chosen. The figure uses the food pyramid analogy. Transport systems structured around the goal of mobility foster an "unhealthy" transport diet: most people use (or would rather use if they could afford them) motorised vehicles for the majority of their trips – the sugar and the fat in the diet analogy. People make this "unhealthy" choice, represented at the bottom of the pyramid, because cars are the most convenient (and sometimes only) transport option.



#### Figure 2.3. The patterns of behaviour mobility-centred systems encourage

Source: (OECD, 2021[4]), 10.1787/0a20f779-en

The patterns of behaviour fostered by mobility-centred transport systems are problematic from a well-being and environmental perspective. High traffic volumes are associated with high road fatalities, levels of air pollution and emissions (ITF, 2019<sub>[6]</sub>), while growing car use increases the demand for energy and materials. These patterns of behaviour reduce the likelihood of meeting international climate goals (IPCC, 2018<sub>[11]</sub>) and Irish GHG reduction targets.

#### 2.2. Transport systems with sustainable accessibility as their goal

Transport policy literature suggests that transport systems' contribution to human well-being ought to lie in the provision of accessibility, meaning easy access to opportunities and places of interest (e.g. jobs, consumption, leisure or health services) (OECD, 2019<sub>[20]</sub>; ITF, 2017<sub>[16]</sub>). Transport systems whose goal is sustainable accessibility, meaning the provision of access via sustainable transport modes (active modes and micro-mobility, public transport and other shared services), can ensure this provision over time and thus support present and future well-being. The results of the public consultations informing the Sligo Vision for Well-being confirms that people consider the provision of access to schools, friends' places and services via sustainable modes as the main contribution that the transport sector can make to improve their lives (Sligo Public Participation Network, 2021<sub>[26]</sub>).

The redefinition of transport system goals in the direction of sustainable accessibility could lead to policy action that:

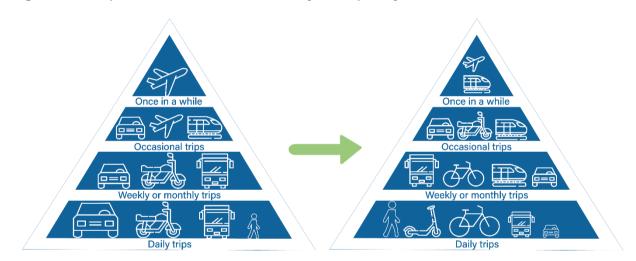
- acknowledges the importance of creating proximity (see Figure 2.2)
- values space-efficient transport modes and focuses on facilitating access to places via such modes
- sees high traffic volume as the problem to solve and road space reallocation as the solution (see more in Chapter 3)

 opens the door to actions that could increase accessibility and reduce emissions via mobility reductions.

With a focus on sustainable accessibility, land use and mixed-use development considerations would become central in transport policy-making; bringing decisions from transport and land-use/housing authorities together on a systematic basis. Policy decisions would focus, not only on creating good transport links via sustainable modes, but also on shortening the distances between people and places of interest.

Measurement frameworks supporting policy decisions in favour of sustainable accessibility<sup>3</sup> would also become key. Chapter 4 discusses accessibility indicators in detail.

Accessibility-oriented transport systems can foster sustainable patterns of behaviour and help Ireland meet its reduction targets. Figure 2.4 builds on Figure 2.3 and illustrates patterns of behaviour triggered by accessibility-oriented systems. Irish transport systems structured around the goal of sustainable accessibility could encourage a "healthy" transport diet: most people could use active and shared modes for the majority of the trips – the vegetables, in the diet analogy. Such a "diet" would be possible if policies focused on creating proximity between people and places, and the allocation of public space and investment for making active and shared modes the most convenient choices.



#### Figure 2.4. The patterns of behaviour in "healthy" transport systems

Note: The size of the icons represents the frequency of the means of transportation used per type of trip. Source: (OECD, 2021<sub>[4]</sub>), 10.1787/0a20f779-en

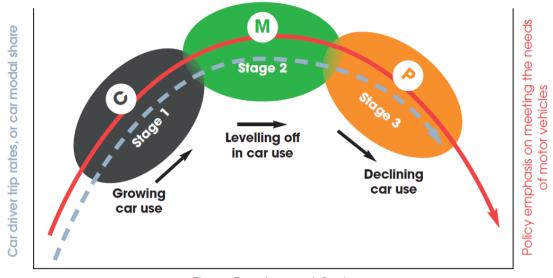
Several policy documents and decision-making processes are taking steps in the right direction. For example, the Irish well-being framework includes access to services and the environment as key components of better living (Department of the Taoiseach, 2021<sub>[27]</sub>). The new Sustainable Mobility Policy also reflects an effort to move away from a car-centric mentality. Sustainable mobility is defined by the SMP as "connecting people and places" (Department of Transport, 2022<sub>[22]</sub>), appropriately shifting attention towards access. At the same time, however, the focus on how to deliver such access is kept on mobility, even if via sustainable modes. The document states that the support of: [s]afe, accessible, comfortable and affordable journeys to and from home, work, education, shops and leisure; [t]ravel by cleaner and greener public transport; [and a] shift away from the private car to greater use of active travel and public transport" (Department of Transport, 2022<sub>[22]</sub>) are the main ways in which it will connect people and places. Attention is therefore mostly directed throughout the document to the transport links between people and places.

To some extent, this is unsurprising, as the SMP is a document produced by the DoT, which is in charge of the links between places rather than their location and characteristics. However, a focus on mobility may hinder thinking about how the planning of such links can contribute to place-making. Overall, an important limitation is precisely that the DoT (via actions focused on mobility) is responsible for delivering results that are also highly dependent on the creation of proximity (land-use decisions)<sup>4</sup>. This difficulty is partly addressed in the document, which lists as one of its ten goals the integration of transport and land use via the promotion of compact growth and transit-oriented development and calls for involving the authorities responsible for housing and land use in the delivery of this goal.<sup>5</sup> The document also discusses the importance of encouraging the "15-minute city" model (Department of Transport, 2022<sub>[22]</sub>)<sup>6</sup>.

Shifting towards a focus on sustainable accessibility is recommended as a next step. This would call for defining sustainable accessibility as the goal (and responsibility) shared between transport and land-use/housing authorities. This could systemically break down "silo planning", bring transport and housing/land-use policy closer together; increasing certainty and visibility on the way in which land-use/housing decisions complement and are coherent with actions in the SMP. The inclusion and increased use of accessibility indicators by authorities from both sectors (which are not present in the current SMP) would allow to establish shared accessibility goals and monitor their delivery. As noted by the OECD (2021<sub>[4]</sub>), accessibility-based planning and accessibility indicators are indispensable for "15-minute city" strategies, among other things.

The newly established SMP leadership group (which brings together the planning and transport departments) could create an opportunity to move forward in this direction.

Changing focus from sustainable mobility to sustainable accessibility is in line with findings from the (EUfunded) Congestion Reduction in Europe: Advancing Transport Efficiency (CREATE) project (Jones, 2018<sub>[28]</sub>). The project analyses how visions of cities (or regions) have evolved in their attempt to shift away from car dependency. The project finds that visions follow an "evolutionary process": with the car-based city as the starting point, city visions evolve towards the sustainable mobility city, and the city of places. It emphasises that a focus on sustainable mobility (and thus, on travel, even when the emphasis is on sustainable travel) can, at best, enable the stabilisation of car use levels. Redefining the goal to sustainable accessibility and transitioning to a vision of city of places (i.e. emphasising not only links but places such as the public sphere and street activities) has the potential to trigger behavioural change at scale and reduce car use while improving people's well-being (see Figure 2.5).





Time - Development Cycle

Note: The grey oval represents the car-oriented city, the green oval the sustainable-mobility city and the orange oval the city of places Source: (Jones, 2018<sub>[28]</sub>), 10.13140/RG.2.2.16026.18886.

# 2.3. Insights from Irish stakeholders: are sustainable transport systems possible in Ireland?

The previous sections discussed the need to redefine the goal of the Irish transport system towards sustainable accessibility, and described the patterns of behaviour such change could foster: people choose to walk, cycle or use shared transport for the bulk of their trips (Figure 2.4). While such change is perceived as possible in urban settings, and particularly in inner cities, it is often perceived as "utopian" in peri-urban and rural areas.

In April 2022, the OECD organised a workshop with Irish stakeholders in Dublin, where participants imagined future transport systems for the different selected territories (Dublin, Kildare, Cork and Sligo). Participants envisioned and designed transport systems guided by the goal of sustainable accessibility, enabling people to meet their needs without private cars (Box 2.2).

#### Box 2.2. Envisioning better transport systems: workshop exercise

Four focus areas were selected by the Advisory Council for Climate Change to ensure that insights from this project were relevant for the whole of Ireland. These include Dublin, Cork, Kildare and Sligo. Based on the CSO (2019<sub>[29]</sub>) Ireland categorisation<sup>1</sup>, Dublin and Cork are cities with adjacent areas including satellite urban towns and rural areas with high urban influence. Sligo is an independent urban town; and Kildare is a town whose rural hinterlands have a high urban influence.

Each breakout group in the workshop focused on one of the territories: two groups were dedicated to Dublin, one focusing on Dublin city and the other on the Dublin metropolitan area. The groups included participants from local and national government, universities, and non-governmental organisations.

Mental models or visions relative to car use can often prevent policy makers from imagining and implementing transformative policies, to move the country away from car dependency. To avoid this, the exercise's starting point was a situation in which private car ownership<sup>2</sup> had become culturally unpopular or even unacceptable. Participants were invited to reflect on and discuss the following:

- Imagine a typical street or road in your area in 2050. What does the street look like? Who do you see and what are they doing?
- Imagine a broader picture ("helicopter view") of the area in 2050. Where are homes and destinations located? What connects them? What is there more or less of?
- Think about who (e.g. children going to school, the elderly, delivery workers) could already be using each transport mode more often by 2025 and what would need to happen (e.g. easy to implement changes in infrastructure, increases in public transport services) to enable this.

1. According to CSO Ireland (2019[29]), urban areas can be broken into three categories: "cities", "satellite urban towns" and "independent urban towns". Rural areas are broken into three categories: "rural areas with high urban influence", "rural areas with moderate urban influence" and "highly rural / remote areas".

2. Shared cars were still culturally acceptable.

While the design of transport systems envisioned varied according to each area's characteristics, in each case, participants were able to imagine car-independent systems and actions to transition towards them. Many of these actions became conceivable thanks to the vision shift towards sustainable accessibility, and to the imagined (but potentially realistic) condition that transport systems were no longer organised around car use.

Similar ideas emerged in the breakout groups, despite the different characteristics of the territories analysed. All groups were able to imagine a transport system that performed better than the current one, both in terms of well-being and emissions.

The first idea that emerged was that streets would be friendlier and less dominated by cars. Streets and roads would have multiple functions, and some streets might not have mobility as their main function. The Sligo group came up with the slogan "shared spaces and friendly faces", expressing the importance of human connection for well-being, which scientific literature supports (see, for example, (Okabe-Miyamoto and Lyubomirsky, 2021<sub>[30]</sub>)). The Dublin group saw more people living in central areas, where houses are smaller. To compensate for that, public spaces in the city would become available for activities once carried out in people's own gardens, such as barbecues, safe playgrounds for children to meet and play, and places for older people to rest.

The second shared idea across breakout groups concerned the synergies that transport systems could trigger in terms of social, economic and environmental sustainability when no longer structured around cars. For example, the Dublin group reallocated some of the space currently used by cars to local markets,

which could enable local and healthy diets, support local farmers' businesses,<sup>7</sup> and foster neighbours' connections. All groups imagined the streets to be greener than today, which would also make them more resilient during heat waves (UNDP, 2022<sub>[31]</sub>).

Finally, all groups highlighted the importance of planning from a proximity perspective. The groups identified the need to reverse urban sprawl via increased density of people and services in inner cities or towns.<sup>8</sup> During the workshops and the OECD team visits to the different territories, participants identified the re-employment of unused buildings and premises in central areas as a means to increase proximity cost-effectively (see section 3.2.2.3 on why this is not already being done). Though not yet dominant, the importance of re-employing unused buildings has started to emerge in Irish policy-making. For example, the Town Centre First policy aims to increase town centres attractiveness with the re-employment of vacant properties as a primary strategy (Dept of Rural and Community Development and Dept of Housing Local Government and Heritage, 2022<sub>[32]</sub>).

The main difference between the systems envisioned in larger urban areas and areas with more rural territories lay in their approaches to creating proximity and ensuring travel via sustainable modes. In larger urban areas, the envisioned design looked like dense networks of 15-minute neighbourhoods within which people could meet all their daily needs (e.g. access to food and services such as pharmacies). A public transport network offering radial and orbital routes coupled to mobility hubs (with shared bikes, scooters and cars) would ensure connectivity across and within these neighbourhoods. Participants described rural areas as networks of towns and villages connected by public transport and separated by green areas. A densely inhabited central town would concentrate services (supermarkets, health services) and be designed following the 15-minute town framework. The satellite towns or villages would also provide daily services, but might not have all of the necessary health or education facilities. Regular public transport and on-demand shared services would connect the villages both to the central town and to each other. The group focusing on Sligo imagined that automated shared vehicles could ensure a constant flow of people between the towns and villages in the area. While this might be possible, attention to employment will be needed when deciding whether automated or non-automated vehicles should be the best option. As in urban areas, mobility hubs would offer a variety of transport services.

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<sup>1</sup> The terms "mental models", "mindsets" and "paradigms" are used interchangeably throughout the report.

<sup>2</sup> As discussed by OECD (2021<sub>[4]</sub>) and ITF (2019<sub>[6]</sub>), a number of indicators are used to measure mobility. These, reflect either the movement of vehicles (e.g. vehicle-kilometres) or of people (passenger-kilometres, trips). Such indicators narrow down the problem to maximising physical movement, and in this way, they fail to provide

<sup>3</sup> As discussed by OECD (2021<sub>[4]</sub>) and ITF (2019<sub>[6]</sub>), accessibility is more complex to measure than mobility. This is because it depends on both mobility and proximity, as well as on various factors such as land use and transport availability. A number of indicators exist, however. Contour-based accessibility measures are the most common (and simplest) ones. They measure: a) the number of opportunities/services/facilities (e.g. jobs, green spaces, transport stations) which can be reached within a given travel time, distance or cost; or b) the time/cost (average) required to gain access to a fixed number of opportunities/services/facilities from different locations. To measure sustainable accessibility, this type of indicator should be calculated for different modes of transport and for different locations and population groups; and emphasis should be given to performance in terms of accessibility by sustainable modes.

<sup>4</sup> This is not a unique problem to Ireland. As said before, the mobility-centric mind-set, by disregarding the importance of proximity has also tended to break transport and land-use authorities into administrative siloes and assigned the responsibility for transport performance to transport authorities solely.

<sup>5</sup>The pursuit of this goal will be supported by a working group jointly chaired by the Department of Transport and the Department of Housing (Department of Transport, 2022<sub>[37]</sub>).

<sup>6</sup> While the document does not propose any specific actions in support of this goal, efforts in this direction are ongoing as part of the Pathfinder project (IrishCycle, 2022[36]).

<sup>7</sup> For example, by reducing the need for intermediaries and enabling farmers to make profits while not pushing prices up.

<sup>8</sup> While this is important, the literature suggests that increasing density is not sufficient to reverse urban sprawl, and shows that densification has coevolved with urban sprawl in many countries. See OECD (2018<sub>[35]</sub>), Rubiera-Morollón and Garrido-Yserte (2020<sub>[33]</sub>) and Ewing et al. (2017<sub>[34]</sub>).



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