

Article

Sustainability Trade-Offs in Climate Change Geographies in England

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Abstract: The evidence that climate change is the result of human actions is becoming increasingly stronger, as is the need to take action to limit the worst effects of climate change on the planet. However, politicians continue to equivocate and fail to address the trade-offs which are needed to deliver effective action. In this paper, we report on the potential of bottom-up approaches to transport planning to address the trade-offs between the need to reduce car-based travel and the social consequences of poor mobility options in rural areas. Using the theories of Sustainable Communities and Communities of Practice, we analyse the implementation of the Robin demand-responsive transport service in the West of England, presenting new data relating to the effectiveness of this service in providing low-carbon transport alternatives to rural residents. We find that the Robin is indeed effective, and that it has worked better in one location, where engagement with potential new users of the service has been prioritised. We conclude that such bottom-up transport options can be transformative, subject to the support of key stakeholders and integration with top-down systems of governance.

Keywords: community; DRT; rural; sustainability trap; transport



Citation: Sturzaker, J.; Catulli, M.; Kubitz, B. Sustainability Trade-Offs in Climate Change Geographies in England. *Sustainability* **2024**, *16*, 549. <https://doi.org/10.3390/su16020549>

Academic Editors: Huan Li and Jue Wang

Received: 1 December 2023

Revised: 27 December 2023

Accepted: 2 January 2024

Published: 9 January 2024



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1. Introduction

July 2023 was the point when, according to the UN Secretary General, the world passed from the era of global warming to that of “global boiling” [1], as records for high temperatures were broken across the world. The need for action is clear, but the political implications of the trade-offs and sacrifices needed to effect such action continue to result in policymakers backing away from the decisions they need to make. A prime example is that on 22 July 2023, newspaper readers in the UK were greeted by the surreal sight of senior government minister Michael Gove MP arguing that climate change should not be treated as an “environmental crusade” [2], at the same time as videos of (British) tourists fleeing the horrendous wildfires on the Greek island of Rhodes were broadcast [3]. Gove’s intervention followed the result of a parliamentary by-election in Uxbridge and South Ruislip on 20 July, the seat previously held by the previous Prime Minister, Boris Johnson. The Labour party had been widely expected to win the seat (as they did in another by-election held on the same day), but the ruling Conservative party held on to it, by a narrow margin, following a campaign dominated by controversy over the extension of the London *Ultra Low Emission Zone* (ULEZ). The latter, a policy introduced by Johnson himself when he was Mayor of London [4], is being extended from inner to outer London by the current Mayor, Labour’s Sadiq Khan. Being within the ULEZ will mean that drivers of vehicles which do not meet the policy’s standard regarding emissions will need to pay £12.50 per day. Following the by-election, both the Conservative and Labour parties have been seen to question “green” policies put in place or promoted by themselves, which has been met with widespread criticism by environmental groups [5].

This paper does not explore this case in depth, nor the intriguing arguments around how the ULEZ expansion and other green policies have been “weaponized” by the Conservative party [6] ahead of a forthcoming general election (to be held by early 2025). Instead, this case is used as an example of a trade-off, one of the many which are needed to make progress in addressing climate change and the current energy crisis. In this instance, at least a share of the electorate did not wish to make the personal trade-off of higher personal expenditure vs. better local air quality and a more diffuse contribution to mitigating climate change [7]. It is also the case that the ULEZ, as a flat-rate tax targeted at more polluting (and hence, usually older) vehicles, can be argued to be regressive [8], i.e., penalising more severely those who are poorer. At the same time, there are strong data showing that communities with higher levels of deprivation in London are more likely to be exposed to higher levels of air pollution [9]. This mirrors patterns elsewhere in the UK and globally—the poorest are often most at risk from environmental problems and have typically made the smallest contribution to causing them [10]. In this context, it is unsurprising that they may not welcome or, indeed, be able to afford paying the price of mitigating and adapting to such problems.

Whilst the ULEZ case highlights personal trade-offs in relation to climate change, and the political challenges around them, trade-offs are of course inherent to every decision made by policymakers. So-called “win-win” policies are rare—typically, one party benefits more, and loses more, than another for every policy designed and implemented. In many cases, however, these trade-offs are not made explicit [11], which can lead to inequalities and resentment when policies are imposed from the top down. It has been suggested that bottom-up initiatives can achieve similar aims to such top-down policies in other sectors [12], but there is a gap in the knowledge of how local, community-based transport initiatives can contribute to climate goals. This paper seeks to fill that gap by exploring the contradictions and contrasts between top-down policies (which aim to mitigate climate change in the UK, specifically those which seek to contribute to the UK government’s legally binding target to reduce the country’s greenhouse gas emissions by 100% from 1990 levels by 2050 to achieve so-called “Net Zero”) with local community “bottom up” initiative in rural areas. Where top-down policies seem to have failed to explicitly consider the trade-offs needed to help rural communities in England address climate change and move towards more sustainable futures, leading to the entrenchment of inequalities and resentment, local initiatives promise opportunities to achieve positive change. This paper uses examples of the implementation of rurally based, community-run sustainable transport modes such as demand-responsive travel (DRT), a service “[...] available to the general public [...], served by low capacity road vehicles such as small buses, vans or taxis [...], responds to changes in demand by altering its route and/or its timetable [...], charged on a per passenger and not a per vehicle basis.” [13] (p. 50).

The research questions this paper explores are as follows: (1) How are climate change policies being differentially delivered and experienced by rural communities, who recent research suggests are being disadvantaged by an “urban-centric” [14] policy environment? (2) Is there an alternative model which would help achieve sustainability and climate goals from the bottom up, rather than the top down?

The paper is structured as follows: It firstly outlines the methods used. Secondly, it introduces a conceptual framework, which draws upon theories of Sustainable Communities and Communities of Practice. Thirdly, it explores different geographies of climate change policy in rural and urban areas, as set out in the literature. Fourthly, it analyses our case study, a demand-responsive travel service introduced in the West of England. A new analysis of secondary data is presented, relating to population density, access to fixed-route bus services and the improvement in such access facilitated by DRT. Finally, the paper discusses the results and identifies necessary changes to policy and practice which might facilitate wider uptake of the benefits of bottom-up practices such as DRT.

2. Materials and Methods

The methods employed in the research are supported by a case study research strategy [15]. Case studies are used to analyse phenomena which cannot be easily separated from their context [16]. This research draws on *the Robin*, a demand-responsive travel service introduced in the West of England, which, as is often the case for case study strategy, can be divided into two “nested” cases [17]. The service in the Forest of Dean is delivered by Lydney DAR, a grass-roots sustainable community transport provider, and the North Cotswold’s service is delivered by a commercial bus operator. Case study strategy allows for flexibility in data collection from multiple sources, including secondary data, and multiple methods of data collection and analysis [17]. In our case, we draw on extensive secondary data available from the two providers’ reports, as well as opendatacommons.org and Padam Mobility, who granted us permission to analyse existing data (see Section 5 for details). This case study relies necessarily on prior theoretical propositions to guide the design, data collection and analysis [15] and Practice Theory (PT), and the associated concept of Community of Practice explained in Section 4 drives the analysis. PT is a framework which can adopt historical and current perspectives in research and therefore can usefully draw on secondary data to draw insights. This analysis of secondary data relates to population density, access to fixed-route bus services and the improvement in such access facilitated by DRT. Importantly, PT supports insights into the meanings and competences of the communities of practice researched in relation to the DRT offering. Thematic analysis was conducted on data from secondary sources, as discussed in Section 5.

3. Conceptual Framework

This study draws on the theories of Sustainable Communities and Communities of Practice, which, in turn, are supported by theories of social practices [18]. Sustainable communities are “places planned and built to support sustainable living with focus on economic sustainability and environmental sustainability” [19] (p. 53). These communities are based on the availability of sustainable urban infrastructure and/or municipal infrastructure (Ibid). Communities of practice are defined as groups of people sharing common concerns, interests in topics and goals, and have agency to shape practices [20]. From the perspective of Practice Theory (PT), a cultural theory [21] in which social practices are the main unit of analysis [22], a practice is defined as “a routinized type of behaviour which consists of several elements, interconnected to one another: forms of bodily and mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know how, states of emotions and emotional knowledge” [21]. Shove et al. [22] offer a much-simplified version of the elements of practices:

- *Materials*: things people use when performing their practices, e.g., vehicles and smartphones used in booking and managing travel.
- *Competences*: performative skills people need to perform travel practices, e.g., driving private cars and vans, which are competences institutionalised through driving licences.
- *Meanings*: associations users make between a practice or its components and values and feelings, and the social conventions shaping users’ practices.

Practices result from the integration of these elements by practitioners, which, in the case of the transport service, would include users and providers. Place-based communities with the capacity to support local transport offerings which respond to the context, interests and values of the involved communities [23] are more likely to be situated in rural spaces [24]. The reason for the selection of PT as a theoretical framework is that it is suitable for researching processes of changes, innovations and transitions following the arrival of new elements—in this case, the novel DRT mobility offering—in a social context [25]; indeed, PT-informed research has generated useful insights into transitions to decarbonised transport. Communities of sustainable practices then support the diffusion of the resulting innovations.

Our contention is that rural-based sustainable communities are capable of generating and implementing practices through bottom-up processes. For example, these communities

may introduce new materials for use in travel, such as mini-buses; their communications may attach motivational meanings to the use of these vehicles; and users may be recruited into and trained to perform new practices such as booking and managing vehicles, e.g., using smartphone apps, recruiting these users into the practice [22]. Communities of practice can use websites and other communication protocols to diffuse meanings and competences. In this way, DRT would be integrated into users' travel routines. Communities can set up and run social enterprises, which will engage in the service co-production of sustainable services such as transport. In this way, people can take some responsibility for organising services traditionally delivered by the state [26]. In respect to what was presented in Section 1, here, we suggest that sustainable communities may be able to address the government's failure to implement sustainable transport.

4. Literature Review

Areas defined as rural in England cover 85% of its land area [27]. This land will be critical in meeting the UK's needs regarding food production and (renewable) energy generation, with various other priorities also competing for this finite land resource [28]. In addition, 17 percent of the nation's population—some 9.6 million people—also live in rural England [27], but policymakers tend to prioritise the urban majority. Recent research exploring the operation of land-use planning in rural areas of the UK and Ireland argued that the UK, and England in particular, features an approach to policy making and implementation which is "urban-centric" [14] (p. 33), failing to acknowledge the specific needs of rural places and people and the interrelationships between urban and rural.

The literature reveals three important aspects of this perceived failure: the nature of rural areas; a narrow view of sustainability on the part of policy-makers, and a failure to reflect on urban–rural interrelationships; and a neglect of the lived experiences of those living in rural communities in the face of climate change. Each of these three aspects is expanded on below.

Firstly, the nature of rural areas means that services are harder and more expensive to deliver. Rural populations are significantly more sparse than urban, making it less cost effective to provide everything from transport to schools and other community services, and shops, pubs, etc. These additional costs, however, are not always fully reflected in government funding allocation mechanisms [29] or the pricing of "public" utilities (gas, electricity, broadband and water) in the UK's privatised utility sector. This means that rural transport networks are often extremely poor in comparison with those in urban areas [30], more households rely on off-grid power sources such as oil or LPG, and it is harder to sustain businesses, with tales of village school, post office, pub and shop closures regularly featuring in local and national media [31,32]. In this way, the physical remoteness of some rural communities is combined with what we might call social remoteness, to the extent that some have referred to the combination of these factors as "disabling", and observed that the last decade of 'austerity' in public service provision in the UK has led to an increase in experiences of remoteness for most rural residents [29]. This has economic, social and environmental implications. Economically, fuel poverty affects 10% of rural households [33], and the fuel poverty 'gap' is twice as high in rural than urban areas [34], meaning that rural fuel-poor households would need double their amount of additional income to bridge the gap between them and their urban counterparts. Socially, there is a well-established problem with access to affordable housing in rural areas—ratios between income and average house price, whilst now high across the country, are particularly so in many rural areas [35]. Environmentally, carbon emissions per capita are up to 50 percent higher in rural areas than in urban [36], though of course, the smaller share of the population living in rural areas means their absolute carbon emissions are much lower. A large proportion of this difference is made up of emissions from transport, particularly those resulting from private car use. Some rural residents believe that "car travel is essential rather than a luxury due to remoteness of services" [29] (p. 65), though this is far from an uncontested

opinion [37]. Nevertheless, in 2020, 90 percent of the distance travelled by people in the most rural parts of England was by car, compared to 72% in the most urban parts [38].

A focus on this by policymakers leads to the second aspect of perceived failure, the tendency to “see rural areas as inherently less sustainable than urban centres” [39] (p. 57). This tendency is now embedded in planning policy in England, in what has been described as “an urban centric approach of concentrating development in larger settlements, interpreting sustainable development and tackling climate change through the narrow lens of reducing car use” [40] (p. 60). Other sources of carbon emissions “relating to spatial land use are not assessed or regulated. . . including operational emissions from development, embodied carbon in construction and demolition” [10] (p. 9), leading policy makers to focus on what they can assess—locating development in places which may result in reduced car use, typically where there are pre-existing services or public transport provision. This focus has been described as a “sustainability trap” [41], meaning that many rural settlements in England (and to a lesser extent, the other nations of the UK) are effectively under moratoria, with planning policy not permitting new (residential) development, leading to ever higher house prices and “spatial exclusion” [42]. Whilst, as noted above, car use is currently unquestionably higher in rural areas, “sustainability is not a bus stop” [43] (p. 57)—yet planners are “forced to judge proposals as [sustainable] because they had electric-vehicle charging points or a cycle path” [25] (p. 196). This narrow view of sustainability utterly fails to account for whether infrastructure is used as intended. It also assumes that rural communities are inherently unsustainable, yet “Net-zero lives. . . are equally possible in rural areas” [39] (p. 57). These lives will be different to those in urban areas, and consequently, need a different policy formulation to achieve them [33]. We return to this issue below.

A third aspect of perceived urban-centric policy failure is the neglect of the rural lived experience in the face of climate change, in relation to both mitigation and adaptation. Regarding mitigation, much of the infrastructure needed to move to a lower carbon future is necessarily being located in rural areas. Wind and solar farms, biofuel plants, areas of coppiced woodland, nuclear power stations, etc., have large physical footprints and, in some cases, need to be located away from large population centres for safety reasons. There is evidence of (growing) resentment on the part of rural communities to the countryside being “perceived simply as a solution to largely urban emissions” [34] (p. 4). At the same time, as noted above, rural housing is less likely to be connected to the mains gas grid so is more likely to be reliant on more carbon-intensive fuel. The cost of alternatives is higher, for the reasons connected to sparsity and remoteness noted above. This similarly applies to lower-carbon transport alternatives—the scale and reach of the electric vehicle charging network is poor in many rural areas, and the range of electric vehicles acts as a further disincentive to their adoption. Regarding adaptation to climate change, rural communities are more susceptible to extreme events including flooding [44], and in common with mitigation, infrastructure to support adaptation, such as new reservoirs, is likely to be located in rural areas. There will of course be a need for employees on relatively modest incomes to install and manage such infrastructure [40], and hence, live in rural areas, as there is across multiple sectors of the economy—a major challenge for individuals, communities and society, as noted above.

These three issues and others mean that, internationally, “in general, rural citizens are less likely to be in favour of climate policies” [44] (p. 2). Longstanding stereotypes of rural areas as being conservative and resistant to change are out of date and at odds with the evidence of vibrant community-led action in various fields [33], but resistance to climate policies remains. Mittenzwei et al., drawing on data from Norway, suggest that this is not due to in-principle objections, but rather, concerns about the priority given to different aspects of policy and the “concrete impact of climate mitigation measures on rural areas” [44] (p. 1)—in other words, the trade-offs between the personal and the societal. These concerns are not unique to rural residents—there is a well-established disjuncture between the recognition of climate change and willingness to take extensive personal

action [45]. In work exploring this disjuncture in four rural communities in England, Phillips and Dickie [46] found that residents used various “narratives” to (self-)justify a reluctance to adopt “carbon- and energy-reducing activities such as using public transport more, reducing their car journeys, purchasing a car with a smaller engine, or moving to or building an eco-house” (p. 101). One such narrative was centred around the trade-off between personal costs and public benefits. Phillips and Dickie suggest that social practices are a suitable approach to conceptualising the changes necessary to achieve “net zero”. In a similar vein, Mittenzwei et al. and others argue that rather than top-down strategies, “place-based” [10] action should be pursued, to build more local support for change.

Combining these ideas together, the neglect of rural communities’ relationships with climate change may be responded to with rural self-reliance and stoicism, which prompted the development of the conceptual framework below.

5. Results

5.1. Introduction to Our Case Study

In 2022, a new demand-responsive transport (DRT) service, the Robin, was launched in the Forest of Dean and the North Cotswolds. The Forest of Dean is a rural area in South West England on the border with Wales, part of the county of Gloucestershire. Its total population of 87,000 is distributed across villages and hamlets in a hilly and sometimes wooded landscape. This is reflected in a low average population density of 165 people per km² across the local authority area, with this falling as low as 63 people per km² in the north of the area [47]. Although the population size has increased by 6.1%, from around 82,000 in 2011 to 87,000 in 2021, this is below the national average. The North Cotswolds area, which lies between Cheltenham and Oxford, covers Broughton-on-the-Water, Stow-on-the-Wold and Winchcombe. It is a very sparsely populated area, with average population densities below 100 persons per km². Small villages and hamlets are distributed across this rural area. The total population of the area is around 32,000 people [47].

5.2. Travel in Rural Areas and Our Case Study

Rural people, in general, own more cars and drive more often and longer distances than people in cities. People living in the most rural areas will travel an average of 5767 miles per year, compared to 3625 miles driven by their urban counterparts, and will make 72 percent of their journeys by car, compared to urban travellers’ 58 percent [30]. Rural people will conversely make fewer journeys by bus than their urban counterparts. This reliance on cars contributes to the overall carbon footprints from transport, which are much higher in rural areas than in cities, as discussed above.

The case study location shows similar travel patterns. The North Cotswolds area mainly falls into the highest 10% and 1% of km driven by car per annum, with the Forest of Dean mainly falling into the highest 10% of km driven by car per annum [48].

At the same time, buses are infrequent and services do not serve all the villages and hamlets in the zones. Figures 1 and 2 show walking times to fixed-route bus stops with hourly services, demonstrating that they are generally on the main corridors and in the bigger towns and villages.

These patterns reflect the commercial reality of bus services in rural areas. The distances across rural areas are relatively long, and to create a frequent (at least hourly) service can require multiple buses to service each route. In addition, the mileage per bus per day can quickly add up, with buses often travelling over a hundred miles a day. As discussed in the literature review, on a commercial basis, the number of people living in—and therefore travelling between—smaller villages is unlikely to generate the numbers of fares and therefore the total sums necessary to cover driver time and vehicle costs for these journeys. Without frequent reliable services, people tend to regard personal vehicles as essential, and only those who have no other option use the bus. Services for small numbers of people are expensive to run. The fact remains that there are those who cannot, for whatever reason, drive themselves, and transport poverty becomes a real issue that exacerbates other indices

of deprivation. The poor levels of service also deter people from switching from driving, an essential change to achieve decarbonisation.

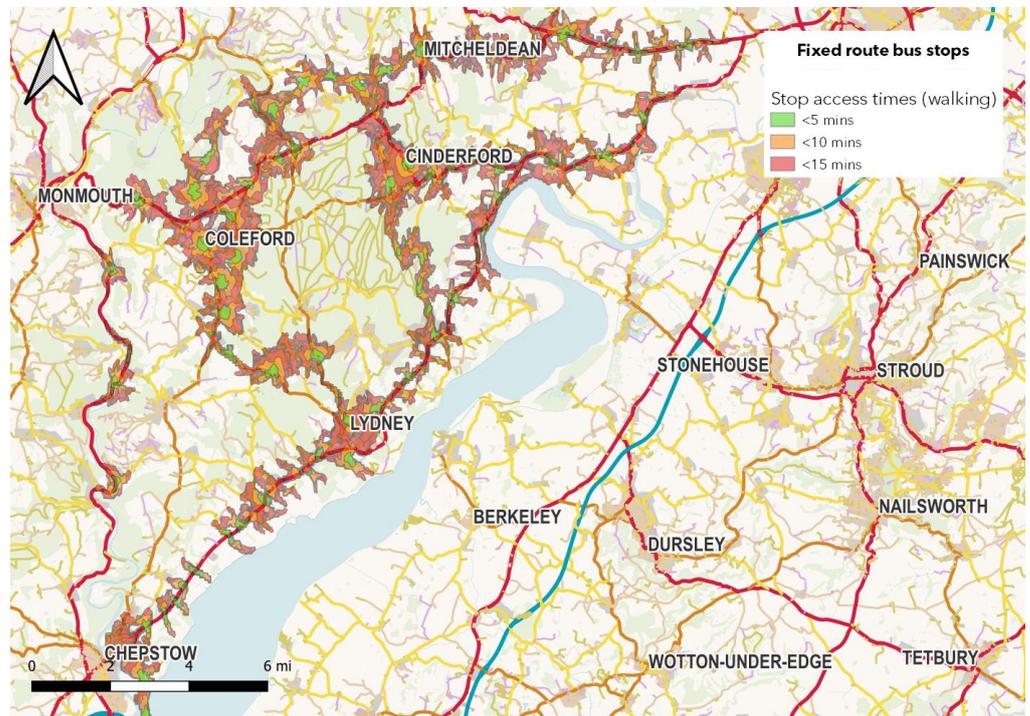


Figure 1. Forest of Dean fixed bus routes and population served (Source: authors’ own images created using isochrones generated in Podaris, QGIS Version 3.16 software, ONS open source population data (Census 2021) and NAPTAN data).

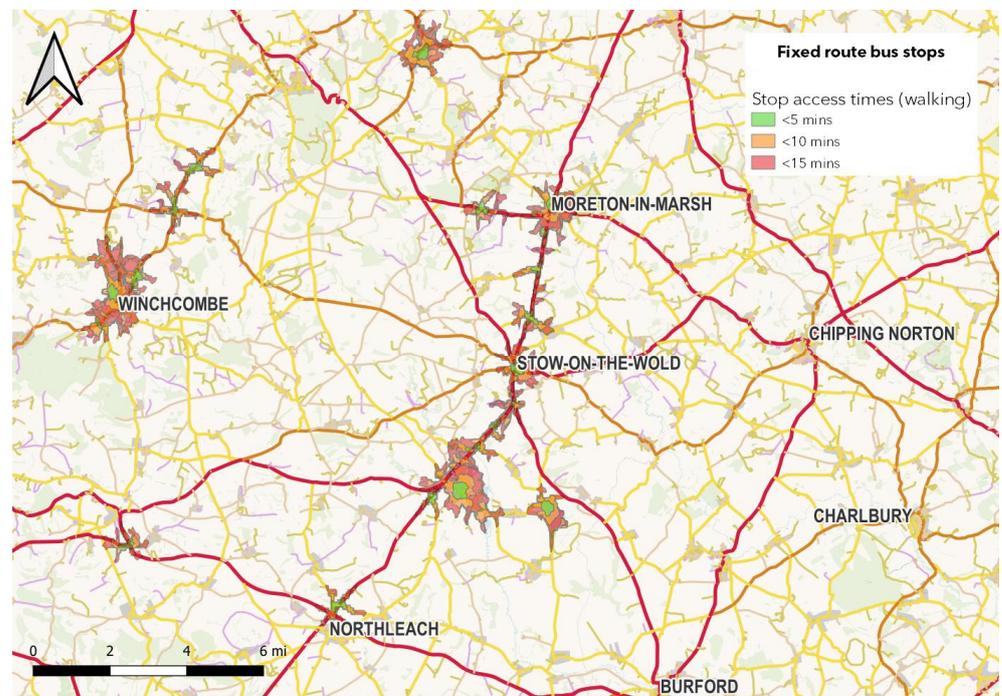


Figure 2. North Cotswolds fixed bus routes and population served (Source: as in Figure 1).

In light of the need to keep some level of bus service running (however unsatisfactory), these services often fall to local authorities to fund, and understanding how best to fund rural transport is an ongoing question. Our case study is of a pilot which might better meet rural aspirations for better, lower carbon and more equitable transport [49].

5.3. The Robin

The Robin is a new DDRT (dynamic demand-responsive transport) service, launched in 2022 and funded by the Department for Transport (DfT)'s Rural Transport Fund. It runs in the two distinct zones outlined above: the Forest of Dean and the North Cotswolds area. People can book journeys 'on demand'—in reality, this means from two weeks to one hour before they travel.

The Robin is designed to augment existing services—the bus routes between the towns and on fixed routes and community transport operating on some rural routes a few days per week. On launch, fares were £2.50 for up to 7 miles and £4 for over 7 miles, concessionary pass holders travelled for free and child fares were £1.50 for up to 7 miles and £3 for over both areas.

The Robin is a DDRT service running from 7 a.m. to 7 p.m., Monday to Saturday. It is designed to provide transport links from close to people's homes to locations for onward travel (connecting to fixed bus routes and trains) or at times when there are no other transport options [49].

5.3.1. The Forest of Dean

Two mini-buses cover the Robin's zone, around 46 square miles. The key points within the zone are the four towns of Lydney, Cinderford, Coleford and Sedbury, along with a number of small villages.

The Robin service reaches across the area, with virtual bus stops within the reach of 44,448 people—over half of the total population of the Forest of Dean (87,107)—within a 10 min walk. There are over 9000 more people within the DRT area who live within a 5 min walk of a DRT stop than within a 5 min walk of a fixed stop—36,000 versus 26,500 for fixed stops (see Figure 3).

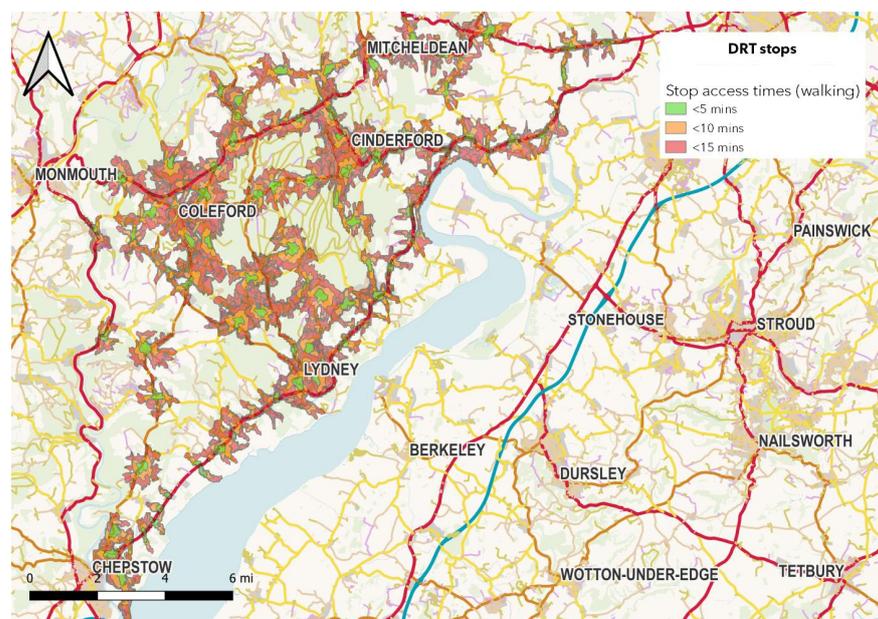


Figure 3. Forest of Dean Robin bus routes and population served (Source: authors' own image created using isochrones generated in Podaris, QGIS software V 3.16, open source ONS population data (Census 2021) and stop positions provided by Padam Mobility and also available on Gloucester County Council Website and the Robin app).

Bus routes travel between the towns, on fixed-routes, with community transport operating some rural routes a few days per week. Two mini-buses offer people the option to book journeys ‘on demand’. People have taken to using the DDRT service to make journeys that are not covered by fixed-route buses. This service enables people to make journeys beyond those areas served and on days that services do not run.

The service is operated by *Lydney Dial-a-Ride (DAR)*, a grass-roots sustainable community transport provider that runs a number of ‘getting people to places they need to be’ services. From community cars driven by volunteer drivers to some (quite infrequent) local fixed bus routes open to all, as well as the eponymous dial-a-ride services for those without access to cars or who struggle to use public transport.

The service emphasises that buses are about people. The journeys are recognised as being trips to school, work, shops, medical appointments, etc. They enable people to see their friends and family. This way, the service is associated with meanings of inclusivity [50].

Community transport is associated with the philosophy of opening up access to transport—in basic terms, getting people from A to B. The manager of the community transport service, Louise Currie, spent three months preparing for the launch. She met a wide range of local service providers. They included supermarkets, dentists, opticians and doctors’ surgeries—as well as other voluntary groups and organisations. Her role was to explain how to use DRT and what it was for—in other words, disseminating novel travel practices. She recognised this was a new service and that people would need support in acquiring the competences to use it. Booking ahead online or via app or call centre was essential, unlike a traditional bus, and people needed to get to grips with this. This was supported by social media marketing to reach other groups [50].

Anyone can use the Robin, and Louise Currie’s work encouraged a network of organisations to create a community of practice, disseminating and integrating positive *meanings* into the offering and showing people how to use the service, helping them to get started and imparting users the *competences* needed. For example, these competences are codified and uploaded on the website as training sessions, advice and support. Lydney DAR launched in October 2022 and very quickly recruited users, starting from nil to delivering 20 to 30 journeys per day.

The service utilises high-quality vehicles and branding to promote itself, in an attempt to distance the Robin from “dial-a-ride” services, which can have negative associations [51]. This appears to have succeeded, with user data revealing younger people using the service during the morning peak, to travel to schools and colleges, the railway station and local employers. The demographic during the day is more mixed and, in general, older [50,51].

The operator has found that the Robin does not detract from ridership on fixed-route services, some of which only run 2 or 3 times a week. In fact, there is an opposite effect. The Robin allows people to travel more and make extra journeys—for instance, using the Robin on Saturdays when no fixed-route bus services run. The two transport modes combined offer more options, and more people overall are taking the bus.

5.3.2. North Cotswolds

In the North Cotswolds, where the population is smaller—just 32,000 people [47]—and even less dense, fixed routes make very little sense. The DDRT stops cover a similar proportion of the population, again, with over 50% of people living within a 10 min walk of a virtual bus stop (see Figure 4). The design of this system reduces the overlap between fixed-route and DRT provision, so it covers a different population. There are few DRT stops in the denser villages but far broader coverage of the area, augmenting the fixed routes.

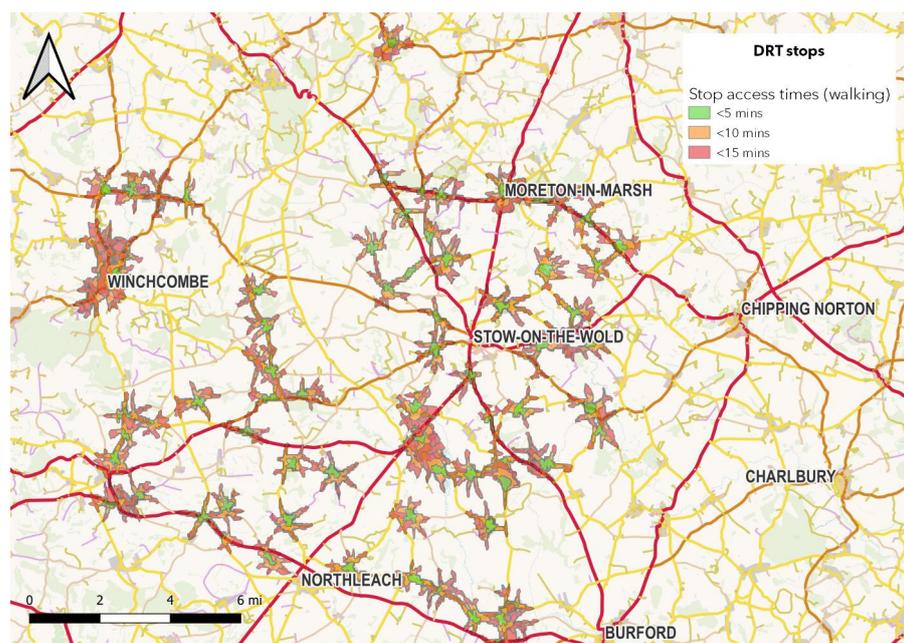


Figure 4. North Cotswolds Robin bus routes and population served (Source: As Figure 3).

5.4. Operation and Impacts

Providing people with buses is not a short-term solution. Recruiting users to novel mobility practices takes time—car dependency took several generations to reach the current regime, and rolling it back is unlikely to be immediate. The two services are run by different operators. The Forest of Dean Service is run by a community transport provider, whereas the North Cotswolds is run by a commercial bus operator, which cannot be considered a sustainable community but at least addresses local needs. Both are under contract to the local authority.

The metrics for the two services are starkly different. Between October 2022 and August 2023, the Forest of Dean service had 6718 users, whilst the North Cotswolds service had 1519 [50]. Whilst there are differences in the demographics and density of the two services, there are also differences in the way in which they are run. DDRT is a new idea for many people—being able to book a bus to go anywhere within the operating area is very different to traditional forms of travel. This is its strength, but also a weakness if potential users do not know about it. In the Forest of Dean, attention was focused upon engaging with the community in an attempt to enable people who usually struggle to travel to do so. There is evidence of people with physical and mental health challenges being able to travel independently, not relying on family or carers to drive them around [51]. In contrast, the North Cotswolds service has been marketed solely through the local authority marketing team, which has several other priorities, and it has been less successful in opening up travel to disenfranchised groups.

5.5. Summary of Results

There are three key components in the discussed service. The first is the upgrading of vehicles (materials) and branding (meanings), which has improved the perception of buses and the general experience from booking (competences) to on-board comfort. The second is the DDRT platform, which is a flexible tool for managing bookings, routes and vehicle usage (digital materials and competences). It can be flexibly designed to suit the area. As it can easily be adjusted, it works well when the operator is engaged, has local experience and listens to customers. The third is the recruitment of users to the new novel mobility practice and the establishment of new transport routines in these users.

In the Forest of Dean, there is clear evidence that the involvement of a grass-roots sustainable community operator makes a difference to the use and the design of the system.

The community transport mission of removing transport barriers and getting people to where they need to be has played a huge role in the success of the service. It has informed pre-launch marketing and on-going support. Using new technology can be daunting for some people, and the support that community transport organisations offer to get people started and reduce the anxiety of doing something new is also an important element.

In addition, local knowledge and experience of transport patterns has fed into the service design. The DDRT algorithm can be adjusted based on feedback—for example, alterations can be tested to see whether they enable better “grouping” of journeys, i.e., the numbers of people travelling per vehicle per hour.

6. Discussion

The point of departure of this paper was the proposition that exploring “bottom up”, localised approaches to change may help address the policy failures outlined above. The findings above highlight strategies to approach the sustainability of rural communities—seeking to change habits through the implementation of “social practices” [22] using “place-based” approaches to generate bottom-up support for change.

The case study described in Section 5 exemplified how an “independent” rurally based social community can accommodate the local context and address the interests and values of the local community [6]. With financial support from government agencies such as the DfT, these communities can function as communities of practice and design and implement new mobility practices at a local level. The important role of these communities is to propose and propagate novel practices [52] with potential to address sustainable development objectives. They can then recruit users to these practices. Despite the DfT’s support, this approach can be described as “bottom up” because it is managed locally and independently. There are risks with these approaches, however: the practices introduced may be not transferable to other local contexts because of hostile reactions by local stakeholders [53]. Lack of sufficient top-down support may cause these exemplars to fail [23].

In order for the beneficial impacts of such practices to influence the location of development and address the complaint that “sustainability is not a bus stop” [43], as referred to in Section 3, planning policy and processes need to be able to accept these different approaches to sustainable travel. There are then issues of the intrinsic sustainability of these localised approaches, especially when, as described in the findings, their operation depends on the good faith of a few volunteers, which might bring into question the long-term viability of these approaches [54]. This is a very relevant question of whether small-scale, local projects are scalable to a wider market context, which may be necessary to deliver essential economies of scale [55]. In other words, the question is whether locally generated local practices can circulate in diverse social contexts [22] and drive (sustainable) planning.

The planning system in England in recent years has been subject to near-constant “tinkering” [56], which, accompanied by deep cuts to local authority budgets, has left it teetering on the brink of complete failure [57]. Best et al. suggest that this is partly because planning “is not seen as a key public policy solution but as a problem” [10] (p. 7) by those in power. This has left England as one of very few large nations without any form of national spatial plan—nor, indeed, statutory strategic planning, i.e., planning at above the local authority scale. They go on to observe that this lack of strategic direction, alongside mixed messaging on climate action (see Section 1), has led to local government planners understanding that housing delivery is more important than acting on climate change, including transport planning. However, they do find some room for optimism, noting that if climate change is a local priority, then planning can be a positive force for change, but that this is “despite the national policy framework rather than because of it” [10] (p. 8).

The place-based approaches discussed above are, similarly, examples of localised transport systems seeking to fill the gap in mainstream public transport provision, which may be scalable and replicable to other places. There is also, some argue [33,37], a need to integrate spatial (or land-use) and transport planning. As one respondent to the survey undertaken by Best et al. puts it, “Rather than assuming that a high number of new car

journeys are inevitable as we build the homes we need, we should start from understanding the types of communities we want and need to build. . . [leading to] a much needed, more joined up approach between land use and transport planning" [10] (p. 68). Such integration would not remove the need for, or the difficulty in deciding upon, trade-offs, but it might at least increase their visibility and make them more explicit in decision-making.

7. Conclusions

This paper presents the findings of a single case study, drawn from a new analysis of secondary data. The use of a single case study and secondary data are the main limitations of the paper, but it provides novel insights and suggestions for further research, including field research into the phenomena uncovered.

Exemplars of sustainable transport initiatives, and more broadly, of models of responsible consumption and production, can emerge as a result of community action in rural communities. Our case study suggests that the initiative and trust in these communities has the potential to facilitate the inception and implementation of offerings and practices that deliver climate change policies in a nearly autonomous way. This somewhat compensates for the neglect of these communities as a result of the urban-centric approach. The resulting bottom-up initiatives do have the potential to suggest directions to achieve sustainability and climate goals.

Contrasted with the lack of stability and consistency of top-down policies, exemplified by so-called policy "flip-flopping", and top-down-driven locally implemented policies, locally determined initiatives independently implemented by communities show opportunities for significant sustainability outcomes. The challenge is to support these initiatives, replicate them and scale them up to a national level, as environmentally sound but geographically limited offerings will not help if the benefits they offer are outweighed by less sustainable practices in the wider environment.

Local initiatives to implement sustainable transport offerings have a role in inspiring solutions which are relevant to local milieus. However, if these exemplars do not receive sufficient support from the government or from sizeable corporate investment, there is a risk that the long-term viability of these exemplars will be compromised. An important direction for research is to address how small-scale, local projects can function as blueprints for wider solutions which have a higher probability of progressing a journey towards net-zero. Policy implications from this paper include that planning processes should be sufficiently adaptable to recognise non-traditional transport offerings as opening up new approaches to sustainability in rural areas, and that funding should be provided to support community transport initiatives.

Author Contributions: Conceptualisation, J.S. and M.C.; methodology, B.K.; validation, J.S.; formal analysis, B.K.; writing—original draft preparation, J.S., M.C. and B.K.; writing—review and editing, J.S. and M.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Ethical review and approval were not applicable to this study because the data it drew on was secondary and no humans or animals were involved.

Informed Consent Statement: Not applicable.

Data Availability Statement: Most of the data used in this paper are publicly accessible, with the exception of some data owned by Padam Mobility (<https://www.padam-mobility.com/en/>) accessed on 1 June 2023.

Acknowledgments: Antony De Heveningham, Beate Kubitz Associates Ltd., created the maps and conducted the population analysis identified as "Authors' own".

Conflicts of Interest: Author Beate Kubitz was employed by the company Beate Kubitz Associates Ltd. The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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