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Resident perspectives on policy and practice

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Towards a circular economy and just transition to net-zero in rural Scotland: Resident perspectives on policy and practice

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ABSTRACT

The circular economy and just transition are key dimensions of the sustainability challenges of the 21st century. These concepts are ambiguous and meanings differ among actors, sectors and contexts. This paper examines the circular economy and a just transition to net-zero in the Scottish context, where both are prominent in national policy discourses and central to the work of Zero Waste Scotland. It is based on qualitative research, co-designed with Zero Waste Scotland, to explore how rural residents in Scotland understand the circular economy and just transition, in their everyday lives and communities. This is an under-researched area and our findings add new knowledge useful for implementing sustainability policies in a rural context. Focus groups were carried out in three rural areas, engaging with a range of residents in a deliberative setting. The findings support the need for a more collaborative, whole systems approach that moves beyond siloed thinking and which focuses on local capacity and knowledge building for transitions to more sustainable rural communities.

1. Introduction

This article addresses a gap in current knowledge about how rural residents in Scotland understand the key sustainability policy and practice concepts of the circular economy and the just transition. The paper is based on qualitative research that was carried out in collaboration with the national organisation, Zero Waste Scotland (ZWS). A key objective of the research, and this paper, is to inform new approaches to implementing these concepts in practice based on how they are understood and negotiated by people living in rural Scotland. This is an underexplored area of research, despite growing recognition of the importance of a just transition away from a linear economic model in Scotland, and globally. By engaging more closely with rural resident's perspectives, we offer new insights into what the just transition and circular economy mean in practice, and how these are interpreted and applied in people's everyday lives.

The linear economy is unsustainable as a means of production, hence, the argument for a shift to a more circular economic model (Sverko Grdic et al., 2020). However, the concept of a circular economy is ambiguous (Mihai et al., 2021) and there is a lack of clarity in terms of the relationship between this concept and sustainability/sustainable development (Geissdoerfer et al., 2017; Kirchherr et al., 2017).

Kirchherr et al. (2017) identified 114 definitions of a circular economy, and they argue there is overall lack of coherence and potential collapse of the concept. In a summary of circular economy critiques, Corvellec et al. (2022) also concluded that the concept is less valuable than some advocates suggest, with 'circularity' being a questionable notion in itself. Despite such critiques and ongoing challenges, the circular economy is prominent in many European countries national governmental policy. Scotland is no different, with both policy and legislation geared towards implementation, especially through the organisation ZWS. ZWS is encouraging both individuals and businesses to 'embrace the environmental, economic and social benefits of a circular economy' and this paper explores what this means for rural residents in Scotland.

Linked to the imperative to create a more circular economy in Scotland, and globally, is the agenda of transitioning towards low-carbon societies. Anthropogenic climate change has made evident the need for a radical 'decarbonisation' of economies (Stern and Valero 2021). The concept of achieving 'net-zero' emissions is prominent in climate policy having emerged out of the physical sciences (see Fankhauser et al., 2022). However, it is recognised that the transition to net-zero will differ in different countries, shaped by specific priorities and efforts (ibid). In Scotland, the idea of a 'just transition to net-zero' is embedded in national discourse about climate change (Scottish

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Government, 2024) and importantly, the just transition and the circular economy are linked in the current draft energy strategy (Scottish Government, 2023)

Similar to the circular economy, the just transition invokes diverse definitions and perspectives (Wang and Lo 2021). Central to the concept are notions of equity and justice in efforts to address climate and energy challenges for the transition to low-carbon societies (ibid). However, the rural dimensions of transitions are often underexplored (Naumann and Rudolph 2020). Markantoni and Woolvin (2015) have argued that a 'just transition' needs to be considered from a rural perspective in Scotland, in order to understand barriers and facilitators in this context. As with the circular economy, this paper therefore contributes to understanding what the just transition means in practice for rural residents in Scotland.

Our findings arose from research commissioned by ZWS to explore the concept of the circular economy and the just transition to net-zero in rural Scotland. ZWS had identified, and a literature reviewed reinforced, that there is little known about how rural communities understand these concepts. Working with ZWS, Authors A and B co-designed a qualitative research methodology to explore this, using focus groups as our method to create rural resident discussion. Focus groups were conducted in Argyll, Moray and South Lanarkshire, three Scottish local authority areas with rural communities. The paper begins with existing literature around the circular economy and just transition, providing the foundation for this research. We then outline the research methods, before we present the results of the focus groups and finally, our conclusions, including the implications for policy and practice.

1.1. Understanding the circular economy

Although described as an old concept (Mies and Gold 2021) the idea of a circular economy (CE) was popularised in the 1990s in response to the challenges of reconciling economic growth and finite natural resources (Winans et al., 2017). It has since become adopted widely on a global scale, albeit in different socio-cultural and political manifestations (ibid). The CE is ambiguous (Mihai et al., 2021); it can be understood differently by different actors in different contexts (Rödl et al., 2022). There are pluralities inherent in the concept (see Calisto Friant et al., 2020; Pedersen et al., 2019), with 'multiple potential configurations of circular economies' (McLaren et al., 2020: 8). Based on reviews of literature, there is a lack of clarity in terms of the relationship between the CE and that of sustainability/sustainable development (Geissdoerfer et al., 2017; Kirchherr et al., 2017). Kirchherr et al. (2017) identified 114 definitions which they suggest leads to overall lack of coherence and potential collapse of the circular economy concept.

Korhonen et al. (2018a: 547) offered a working definition of CE as a 'sustainable development initiative' which involves systems approaches to reducing the linear use of material and energy in production-consumption, and more co-operative approaches between producers, consumers and societal actors. They outline the value of this contested concept across different criteria, suggesting that CE could be seen as a 'cluster concept' with several subconcepts (ibid: 548). For them, the power of CE is linked to the potential to attract a diversity of sectors and organisations to become involved in the work of moving from linear, wasteful models, towards cyclical, restorative, and reproductive flow structures.

However, summarising CE critiques, Corvellec et al. (2022) conclude that the concept is less valuable than many advocates suggest. One problem is with 'circularity' being a questionable notion in itself, inked to arguments concerning the laws of thermodynamics (see Bianciardi et al., 1993; Korhonen et al., 2018b; Wiedenhofer et al., 2023). More conceptually, imagining a 'circular' future is also considered difficult compared to imagining a zero-carbon future (Hart and Pomponi 2021). Indeed, the case for the CE is less clear as compared to absolute reductions in fossil fuels in the global economy, because the CE does not necessarily lead to a reduction in resource extraction (ibid).

Moreover, CE remains predominantly a 'business imperative' (ibid)

and much CE research focuses on industry, including innovations and specific tools like product life cycle assessment (Atif 2023; Triguero et al., 2023). In Scotland, CE research, has explored industries and sectors such as textiles (Wilson 2015) waste (Saleemdeen 2022) and design (Whicher et al., 2018). Although CE has potential to attract diverse businesses to sustainability work (Korhonen et al., 2018a), Heras-Saizarbitoria et al. (2023: 2307) conducted analysis on a global data set of CE activities based on sustainability reporting in companies and found a 'limited, superficial and reductionist use of the concept'. This includes, the dominance of association with waste management and recycling, with limited consideration of practices such as reduction, reuse and remanufacture. Importantly though, Atif (2023: 2156) argues that the industry 5.0 era, is marking a shift away from an industry focus to include 'societal values' as part of a 'human-centric approach' to production and innovations in manufacturing.

More work is needed to link the CE to social and environmental goals (Hart and Pomponi 2021) and as noted by Mies and Gold (2021) the CE often lacks a moral and social dimension, being too economically and environmentally focused. In Mies and Gold's (2021) research mapping the social dimensions of the CE, key areas relevant to our focus on the link between CE policy and implementation and the perceptions of local communities emerged. These include how the involvement of local communities in CE projects can improve the likelihood of their success, promote local empowerment, improve social inclusion and equity, increase acceptance of CE measures in the community, and generate commitment and positive attitudes towards the CE. Studies continue to examine the cultural and social dimensions of the CE. Beaurain et al. (2023) adopt a pragmatist approach informed by Dewey, using this to support arguments that CE transition requires moving beyond technological solutions, to focus on changes needed in culture and values.

Using a capabilities approach, Valencia et al. (2023) emphasise the social value of the CE and expand the 'resource Rs' of the CE (reduce, reuse, recycle) to using 'socioeconomic Rs' (such as rethink, reorganise and revitalise) which offer a practical tool for assessing CE initiatives from a strong sustainability perspective. Such conceptualisations further flesh out Korhonen et al.'s (2018a) notion of CE as a sustainability initiative and a more transformational vision of CE (see D'Amato and Korhonen 2021). Additionally, 'circular disruption' has been proposed more recently in terms of creating more radical change for CE, such as 'tearing apart the economic and societal nodes that constitute everyday life' (Kirchherr et al., 2023: 1005).

More expansive socio-cultural understandings of CE have also been shown as important within the European policy context. Comparing citizen's visions for CE with policy priorities and discourses, Repo et al. (2018) found incongruence due to the lack of social dimensions in the latter as compared with the former. This has led them to argue that 'consumers' and citizens, must be better incorporated into CE policies. This requires identifying narrative and practice divergences (ibid) which reinforces the value of our study which sought to identify rural resident's understanding of CE in theory, in policy and in practice, working with specific Zero Waste Scotland narratives. Exploring how rural residents view CE can help to better understand the need for renewed, or reframed policy in Scotland. Communities, and rural communities have not yet been the focus of much CE research, especially in Scotland. However, Pinilla's (2022) research with rural communities in Colombia, importantly illustrates that CE practices can be carried out without people consciously using the concept. This shaped how we approached the design of the focus groups as a deliberative space (see below).

1.2. Understanding a just transition

Similar to the CE, the just transition has been termed ambiguous (Wang and Lo 2021). Underlying the concept, is the need to consider principles of equity and justice in efforts to create more sustainable societies (Newell and Mulvaney 2013). Indeed, as Williams and Doyon (2019: 144) suggest, an 'unjust transition is not sustainable'. The

importance of the ethical aspects of sustainability transitions is summarised by Köhler et al. (2019) who acknowledge that transitions can create new, or reinforce existing forms of injustice. As such, existing research has sought to argue for a whole systems approach that attends to multiple social inequalities (Abram et al., 2022).

However, the just transition is a broad concept, which allows for actors to make differing interpretations – hence arguments that the meaning of the term is ‘confusing’ (Abram et al., 2022). Although, Winkler’s (2020) analysis suggests this is not necessarily an obstacle if coalitions of actors can act as change agents to shift from a high to a low carbon development path. However, dissonance between policy and community understandings, (as noted above with the CE), can mean a lack of societal acceptance of the just transition, limiting overall progress (Köhler et al., 2019).

The transition to net-zero will differ in different countries, shaped by specific priorities and efforts (e.g., see Othogile and Shirley 2023). Sector-specific explorations of just sustainability transitions in rural contexts include a focus on agriculture (see Lamine et al., 2019; Harrahill et al., 2023; Murphy et al., 2022; Puupponen et al., 2022) and energy (Banerjee and Schuitema 2023; Naumann and Rudolph 2020). In a Scottish context, Marklund (2023) has identified a challenging dynamic of contradictory transition narratives among different agents of change (communities, industries, workers and government). Moreover, Markantoni and Woolvin (2015) have argued that a ‘just transition’ needs to be considered from a rural perspective, to understand what the barriers and facilitators are to achieving a just transition within a rural context. Research of the just transition in Scotland has often centred around key industries such as energy (Hughes and Zabala, 2023; McCauley et al., 2019; Santos Ayllón and Jenkins, 2023) transport (Alabi et al., 2021) and fisheries (Withouck et al., 2023). Recent research has also emphasised the important role of communities in the just transition to net zero in the North East of Scotland (Potts and Ford 2022), community wealth building (Macfarlane and Brett 2022), and visions for rural land use (Beingessner et al., 2023). We build on this existing body of work, by adding depth and nuance through rural residents perspectives on the just transition to net-zero in theory and in practice.

2. Materials and methods

Our methodological approach was based on a qualitative research design that would allow for in-depth exploration of understandings and negotiations of the circular economy and just transition concepts by rural residents in different communities in Scotland.

2.1. Research questions

Although much of the CE literature is separate from the just transition, the concepts are interconnected in our work. Our research questions are.

- How do rural residents interpret, and negotiate the meanings of the circular economy and a just transition to net-zero in Scotland?
- How do rural residents relate concepts of the circular economy and just transition to their lives, communities and the Scottish context?

These questions speak to the important themes of envisioning and enacting new futures in rural communities. Concerning possibilities for low carbon futures in rural communities in England, Phillips and Dickie (2014) explored narratives of transition/non-transition. They found many people struggling to imagine change in rural spaces, and concluded that ‘the presence and strength of narratives of stasis, along with evidence of highly carbonised lifestyles, suggest that there are major challenges in facilitating transitions towards low carbon rural futures’ (ibid: 93). Whether and how rural communities in Scotland narrate alternative futures and engage in place-making is a vital part of

‘re-imagining the rural’ beyond the current neoliberal hegemony (Shucksmith 2018).

2.2. Rural community case studies

The study adopted a multiple case study design (Yin, 2018), allowing for cross-comparison and inferential generalisation (Ritchie et al., 2014) of identified concepts to represent the broader picture of rural communities in Scotland. The sample was residents of rural Scotland. 98% of the land mass of Scotland is rural, home to only 17% of the population (Scottish Government, 2021). The Scottish Government urban-rural classification is used in policy and research, defining areas by population and accessibility. Based on this classification, we identified case studies of ‘accessible-rural’ and ‘remote-rural’ areas (Scottish Government, 2022). The characteristics of areas were compared to select two-three areas from a longer list. Our selection parameters included: data from the Scottish Index of Multiple Deprivation¹; the population of local communities; area representation in research; and convenience and accessibility for researchers. The three areas chosen are highlighted in Fig. 1.

2.3. Focus groups and sample

Focus groups were chosen as the main method due to their potential as deliberative spaces. They are both open and defined, allowing

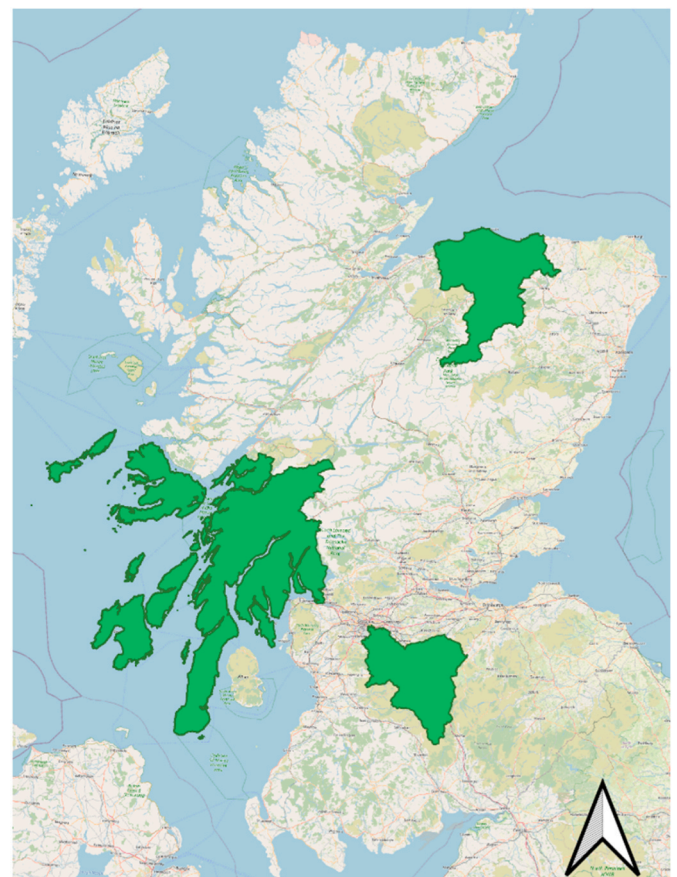


Fig. 1. Location of Local Authorities used as case study areas.

¹ Available at: <https://simd.scot/#/simd2020/BTTTTT/9/-4.0000/55.9000/>.

collaborative sensemaking to occur (see Pitts et al., 2017). The focus group guide was developed collaboratively with feedback from ZWS and included the use of information interventions to promote discussion and reflection (see Appendix 1). For the CE, this was a short video produced by ZWS explaining the concept with animations and for the just transition, a working definition was provided. Focus group questions were open-ended to allow participants to guide the conversation, with some prompting by the researcher where needed. This includes for example keeping to topic, but also moderating a dialogical argument and counter argument (Macnaghten, 2021). We kept discussions to a maximum of 2h and ten participants, recognising potential for participant fatigue and the demanding nature of analysing lengthy qualitative data (Nyumba et al., 2018). Data were collected using an audio-recorder (later transcribed) and through field notes taken by the researchers.

Focus groups were conducted between March and April 2023. Focus group participants were recruited from within the case study areas with support from local community organisations. The sessions were advertised both online and using community notice boards. The sampling strategy was based on a combination of snowball, convenience and purposeful approaches. A research incentive of £20 per person was offered to participants and we aimed to attract a diverse sample on the basis of age, gender, and socio-economic status. Demographic data was collected through a participant survey, and our final sample was balanced by gender, but overrepresented in those of mid/higher socio-economic status and over the age of fifty. Although attempts were made to recruit purposefully to fill such gaps, this was challenging to achieve due to the more rapid nature of the data collection phase of the project. Future research is therefore needed to target specific rural resident groups that were absent in our sample, such as younger people under the age of 25 and those in low-income brackets. Ethical approval for the research was granted through the University of the Highlands and Islands ethics committee.

2.4. Data analysis

A total of five focus groups were carried out by Authors A and C lasting between 1.5 and 2 h and associated audio was used to generate transcripts for analysis. Although focus group data includes both observational and textual data (Nyumba et al., 2018), our focus was on the latter. Analysis of transcripts was done by Author A using a thematic approach (e.g. Braun and Clarke 2012; Nowell et al., 2017), common in qualitative research to identify themes, patterns and ideas. QSR NVivo was used as a data management tool, and for the initial coding, and secondary focused coding, which excluded, combined and sub-divided themes for final results. This exploratory approach was useful given the relatively underexplored topic, and was used to enable design of future tools for rural research by ZWS.

3. Results

Our main findings pertain to two main themes: 1) understanding the circular economy and just transition as concepts and 2) the key challenges and opportunities for implementing a circular economy and just transition in practice. We use primary data excerpts to illustrate the narratives of rural residents which are fully anonymised, with longer quotes including demographic descriptions, such as age and gender to show the diversity of responses.

3.1. What is a circular economy?

Respondents were asked about their understanding and knowledge of the concept of the CE. Two key dimensions emerged from initial participant dialogue, the first focused on environmental resource use and the nature of the economy over time. Concerning the former, a South Lanarkshire participant said the CE means 'less waste, reuse everything, recycle' (Male, 50–65). Similarly, in Argyll a participant

cited, 'reusing' rather than starting with raw materials, and in Moray another spoke about the importance of recycling, 'not being wasteful' and having clothes repaired instead of buying new ones. Participants in all focus groups tended to contextualise the CE in terms of societal change. In South Lanarkshire, a participant explained:

We have come to be a disposable society. So, we tend to throw things away all the time. And we're kind of going to a circular economy and society will try and get us back to basics. (Female, 50–65)

Participants discussed how it was often easier in the past, and more common to sew and repair clothes for example. There was a sense of nostalgia across all the groups, of a less wasteful past, and behaviours were often more circular than the present. In Moray, a participant spoke of the CE as a move away from the linear economy which has dominated societal relations in the past and present. In Argyll, there was less certainty about the concept of CE, and one participant described it more sceptically as a 'green buzz phrase'.

The second dimension of dialogue focused on ideas about the CE as an alternative economy. A participant in Moray described the CE in terms of creating a local economy and an economic system based on barter and time exchange. Within the Argyll group, the CE was linked to the prioritisation of wellbeing and people's happiness over profit-making, including use of the phrase 'wellbeing economy'. There was discussion about how wellbeing economic policy could use new targets and forms of measurement that focus on the wellbeing of people and nature as a way of measuring progress beyond GDP. Notions of how the economy can serve social rather than economic objectives were also described by a participant in Moray:

... it's about creating a structure that works on reciprocity, rather than individual gain. I would say a circular economy is where everybody profits, and nobody loses. And the whole essence of it is reciprocity as opposed to exploitation. (Female, 50–65)

After watching the ZWS video explaining the CE, focus group participants became more confident in their discussions, and began focusing on areas key to implementing circular economy behaviours such as local food growing. However, the video prompted many uncertainties and questions. For example, what happens to items that cannot be recycled? Participants cited experiences such as being unable to recycle or donate items such as mattresses, duvets and electrical goods locally. Further questions on the practicalities of the CE were, can everything be recycled at some stage? And where does recycling actually end up? Is it dumped in other countries? There was some scepticism again in the dialogue, such as one person describing recycling glass as a 'feel good' activity that does not bring significant benefit.

Questions also emerged about the implications of the CE in terms broader economic change and the impact on people's livelihoods, which showed some implicit linkage to the Just Transition concept. In the Argyll group, one participant asked, given economies depend on manufacturing, 'what happens when there is less being manufactured?' does this lead to less jobs and employment?' In the Moray group, another participant described the CE as requiring people to 'lower their living standards' and to 'make a sacrifice' by not buying 'new stuff' and instead repairing old stuff. Although they felt personally this was positive and enjoyed doing this, they were sceptical about convincing other people, especially those lacking time and seeking convenience:

... at the moment it's very easy to just buy something to replace it, it's probably easier than repairing it. Whereas 100 years ago, it wouldn't have been, which is why people repair stuff. (Male, 35–60)

Thus, the CE is linked to ideas about trying to shift societal norms, with the notion that CE behaviours such as repairing are niche. Building on this for example, the same participant argued that people attending this focus group are 'already interested in the subject' and the main challenge is how to get people 'on board' who are not.

3.2. What is the just-transition to net-zero?

Rural residents were asked about their understanding of the just transition to net zero. Across the board participants were less familiar with this phrasing than they were with the circular economy, with fewer examples and points of discussion raised. The two major themes across the discussions were related to 1) the idea of the just transition as jargon with ambiguous meaning for practice in a Scottish rural context and 2) ideas of justice and inequality at a global level.

In terms of the first, in the South Lanarkshire group, only one participant had heard of this phrase before in relation to applying for Scottish Government funding. They described it, along with 'net zero' and 'economic growth' as terms that help to 'tick a box' when seeking funding from local and national governments for community action. In the Argyll group, some had not heard of the just transition, whilst others had some understanding. One person linked it to 'people's livelihoods', whilst another explained:

I take it, that means something like an equal transition, like a fair transition. Because I think sometimes, it's a bit like with the first transition if you've got money you can afford to do it, but if you haven't got money, you might have the will but it will be much harder to do it ... So, I suppose it's not really a fair transition to net zero. (Female, 60–69)

In the Moray group, there was limited familiarity with the idea of a just transition, but net zero was recognised. One participant said they were 'sceptical' about net zero, because they felt that companies use it as a 'sticking plaster' to justify ongoing practices, for example airlines planting trees. Concerning a just transition, one person had heard of it, but was unsure how to make sense of it in a rural Scottish context and described it as 'jargon'. The definition provided in the information intervention was also described by one participant as 'a lot of noise', that most people would nod and agree with, but which does not contain anything specific. Others less scathingly said the definition is 'aspirational'. Whilst the participant agreed that this is important, they felt overall the definition was meaningless.

In terms of the second theme, even prior to the information intervention, the limited understanding of the just transition that some participants had was more globalised. A participant in Moray spoke about climate injustice and the impact of western development on vulnerable countries, and felt compensating those people and countries was important. They also said a just transition could be about, 'ensuring that we downsize, our consumption, our greed, doing consumption in a way that is equitable' (Female, 25–30). In Argyll, after the information intervention participants also discussed global dimensions of the just transition to net-zero. One participant said: 'it won't be popular here because essentially a Just Transition means we would all have to accept a much lower standard of living to allow the third world to have a better life' (Male, 60–69). Such thinking links the just transition to wider economic debates about degrowth, which are also relevant in circular economy discourses (see Calisto Friant et al., 2020).

When asked about views on the just transition to net zero within Scotland, Moray participants were unsure what this could entail. In the South Lanarkshire group, one participant asked, of the just transition, 'so it's just because it's fair to everybody?', and another began to describe ideas about 20-min neighbours, local employment opportunities and reducing carbon emissions from travel. Other ideas that emerged within discussions with some researcher prompting, included perceptions that key issues in Scotland might be around affordability such as being able to insulate and heat one's home with solar panels and a heat pump or the expense of purchasing an electric car. There was some agreement that government should be responsible for helping people financially to implement the transition, as well as helping other nations.

3.3. Perceptions of national policies and targets

A common theme emerging in the focus groups was around rural

residents perceptions of national policies and targets related to the circular economy and achieving net-zero. Elements of the discussion were tied into whether current targets were realistic and achievable and a perceived lack of action. One participant in Argyll stressed:

I don't think there is the political will you know, for all they are talking about what we can do. But it is always at the individual level. And we are all doing our own wee bit. But, Zero Waste? It's gone right down the agenda politically so it's not gonna happen. (Female, 60–69).

Another participant agreed that there needs to be 'leadership' because rural communities doing 'our wee bit' is not going to lead to real change. However, this was prefaced with a wish for a space for community priorities to be addressed alongside national priorities:

"I think it's both" (community priorities and national priorities) Cos you need a bit of leadership on this don't you?" (Female, 60–70).

In the Argyll and South Lanarkshire focus groups, there was some sense from participants of targets being 'politically driven' or about 'getting votes' without them having been thought through or properly consulted on, especially with industry. For example, a participant with a background in waste management, cited a lack of engagement with industry around a number of policies and targets such as the landfill ban and the deposit return scheme. Of the Scottish Government they explained:

... you kinda have to put these ambitious targets but I think they should maybe do their research a bit better because that would have been easy to find out that there's no capacity there for a landfill ban. (Female, 30–45)

There was further scepticism from others that existing, 'ambitious' targets have been 'backtracked on already'. A participant in Argyll felt that backtracking can be blamed on lack of communication with communities to define realistic targets and actions. Such views suggest the need for a more collaborative approach to circular economy and just transition policy-making. Our findings suggest that rural communities in Scotland feel disconnected from national CE targets and visions. This is problematic given that advancing CE requires a 'network of engaged stakeholders' including communities (Kirchherr et al., 2023: 1005).

3.4. Key challenges and opportunities for a circular economy and a just transition

Key challenges and opportunities for implementing a circular economy and just transition to net zero in practice emerged in across the discussions. These are encompassed in themes of: behaviour change and education across generations; the cost-of-living crisis and poverty; the globalisation of the economy and consumerism; urban-rural differences; and community-led transformation.

3.4.1. Behaviour changes and education across generations

Rural residents tended to agree on the need for 'behaviour change'. Influences on behaviour such as celebrities, social media influencers and advertising were discussed as important in Argyll, and a particularly positive view was taken of how local role models can inspire others such as changing energy infrastructure, and growing local food. Similarly, in South Lanarkshire, the importance of cultivating a more positive mindset as a means to encourage behaviour change was highlighted. One participant said although a 40% recycling rate is often reported as a negative figure, this does not inspire new action. They said, 'you should actually say wow, it's 40% because people like to follow their neighbours' (Female, 30–40). Another responded that negativity is part of the 'Scottish mentality'. A pessimistic outlook is a common cultural stereotype of Scottish people, reproduced here. Concerning what works to change behaviour, in Moray, one participant spoke about the difficulties in getting people to change their habits and whether the best route would be to enforce change through the law (such as banning landfill), by making certain practices socially unacceptable or by using financial

incentives.

The role of, and need for education, to create a more circular economy was a common discussion point. In the South Lanarkshire focus group, there was a consensus around how education is needed to improve recycling, to prevent food waste, and upskill people in the community. For example, in Moray, skills workshops were an idea to give people opportunities to learn to sew and repair. However, it was felt people working may struggle with the time to attend such events. There was support for a more formal school qualification in environmental sustainability in South Lanarkshire, whilst recognising that young people do more commonly learn about sustainability at school. A more informal form of education was discussed in terms of intergenerational learning; children encouraging their parents to change behaviours. Indeed, some older residents described younger generations as 'more switched on' than previous ones, citing a perceived increase in upcycling and wearing second hand clothing. Speaking of their own generation, an older participant felt they had contributed to the creation of a 'disposable society', whereas today 'people are going back to growing their own food and being more health conscious.' Less positively though, they thought that all generations are now 'time poor' due to the increase in mobile technologies. Some of the key challenges and opportunities for behaviour change and education cited here, could be explored in more depth in future rural research, to identify what works well in practice.

3.4.2. Cost of living, poverty and inequality

All focus groups discussed the impact of the cost-of-living crisis, poverty and inequalities on sustainability agendas. In Moray, one of the challenges was described as 'convincing people when they are struggling to make ends meet, which a lot of people are, that they need to care about this.' An example discussed was parents buying cheap clothes from the retail giant Primark because that is all they can afford. A participant in Argyll, similarly felt that people struggling financially are less likely to be thinking about longer term goals like a circular economy, being focused on living 'day-to-day'. Linking financial struggles to policies, a participant in South Lanarkshire critiqued the introduction of new schemes such as the Deposit Return Scheme because it adds financial costs to families during a cost-of-living crisis. Hence, when people are choosing between 'heating and eating', even a 20 pence increase on a container is perceived as unjust.

In Argyll the idea of hidden poverty also emerged. Some thought this was increasing locally, due to seasonal employability, exacerbated by COVID. Increased demand for second-hand children's clothes was seen by some as a symbol of people struggling. However, the idea of re-using children's clothes was also perceived positively, as part of a new culture of sharing, something which need not be hidden, as compared for instance with food poverty:

... sharing clothes now is not embarrassing, because you can say it is about saving the environment. It's much more acceptable whereas the foodbank is much more of a poverty issue which people might be more embarrassed about. (Female, 60–69).

People's views on the realities of poverty in rural Scotland, brought to the fore comparisons between relative and absolute poverty. Some sought to emphasise how conditions in Scotland compare to those of people in other countries. In one case, a participant felt there was no real poverty in Scotland when viewed through the lens of global inequalities. Although this was not a common opinion, the importance of a global view was shared across the focus groups in relation to the theme of consumerism and the economy.

3.4.3. Globalisation and consumerism

In South Lanarkshire, the fact that particular companies can monopolise sectors of the circular economy, such as waste management was critiqued, especially when companies operate outside of Scotland. Participants agreed it would be preferable to prioritise contracts for Scottish companies and workers to support local livelihoods and the

national economy. Scotland's resources being owned by other countries and private companies was also critiqued, many felt communities and individuals rarely see benefits from this compared with the level of profits that arise.

A sense of protectionism also applied to the global food sector, with people across the groups favouring local, seasonal food. One participant said for example, 'people in Scotland should not be eating Pineapples' (Female 30–40). Exotic fruits were mentioned specifically as being available all year round in supermarkets which was problematic for sustainability. Some thought the globalisation of the economy was a key barrier to implementing a circular economy in rural Scotland. Globalisation was linked in particular to overconsumption, consumerism and the prioritisation of convenience. It was described by one participant as a 'homogenised mess of greed'.

The Covid-19 pandemic was seen by participants in Moray and South Lanarkshire as highlighting the failings of globalisation and monoculture farming, as well as a prompt for rural residents to start growing their own food, reduce their consumption of supermarket food and reject seasonal fashion clothing. However, such actions were seen as niche and a key challenge was how local, sustainable businesses are outpriced by supermarkets. For example, a participant felt people are not always able or willing to pay a much higher price for a product even if it is sustainably produced, of higher quality and locally produced. In a rural context, people pursue a cost-effective approach. They purchase cheaper, less sustainable products either online or travel long distances to large supermarkets, rather than regularly purchasing sustainable locally produced but expensive items.

Additionally, a barrier to transition was seen as how to convince companies currently making profits in unsustainable global industries to end or change their business. This was applied both to extractive industries, but also companies unwilling to trial new recycled products. One participant said there will be 'winners' and 'losers' from a sustainability transition, with fast fashion companies for example losing out as people shift towards more sustainable consumption, and thus resisting change or only embracing the sustainability agenda to make profit. In contrast to current globalised consumption patterns, one participant described a future where people 'live richly in ways that are not linked to the squandering of resources' (Female, 60–69). They described how new rural futures could be inspired by a Gaelic cultural inheritance of hospitality and economies of reciprocity. The other participants in the group supported this sentiment and the overall notion of changing our cultural way of living and pursuing a 'fundamental paradigm shift'. Culturally-specific forms of a circular economy in Scotland require further research, but our findings show appetite for something different to the current globalised economic model, and more radical 'circular disruption' (Kirchherr et al., 2023).

3.4.4. Urban-rural differences

Urban-rural differences were often discussed among the groups, with positive and negative connotations for rural communities. In South Lanarkshire it was felt recycling is challenging in urban areas given high-rise living, whilst in contrast rural areas suffer more from fly tipping which is less common in cities. Similarly, rural residents perceived disadvantage for urban residents in communal buildings unable to utilise solar panels and renewable energies, including community wind turbines and electric vehicles, as well as having less space for recycling food waste in the garden. One participant suggested there is 'so much more poverty' in urban compared to rural areas, describing this as a significant challenge for the circular economy and just transition.

In terms of opportunities for a circular economy, one participant in South Lanarkshire felt that it should be 'easier' in rural communities 'because there can be more of a community spirit to do things to educate and help.' In Moray, it was recognised that the area has an unusual amount of sustainability initiatives, such as Moray Waste Busters and the Transition Town movement. In Argyll, there was some discussion about whether rural communities have more awareness of alternative

energy and the environment than in urban areas. It was felt that, 'people care about it' and sustainability initiatives are easier in these places than in 'Glasgow or Inverness.' As one participant also described, in rural areas an advantage is that, 'you do use everything' because of the travel and inconvenience associated with getting to shops, it is more likely that 'you will try harder to use what you already have.'

However, although some positive comparisons arose, on the whole, the discussion groups identified a deficient rural infrastructure for a circular economy. In South Lanarkshire, there was concern that small rural businesses are not equipped to deal with 'one-size-fits-all' policies, such as the deposit return scheme. Transport infrastructure was described as wholly inadequate. Speaking bluntly about efforts to transition to public transport, one participant said, 'if you are not wanting us to use our cars, we would need something else to get us to other places.' One participant in South Lanarkshire had an electric car, but said there were challenges of charging for longer journeys across the UK. In Argyll, participants said there were only two charging points for electric cars within the community, and they did not work.

Participants also discussed lack of local infrastructures for composting and limitations in terms of food growing due to soil quality. An example from South Lanarkshire was also the absence of recycling infrastructure in council buildings including schools and community halls. This was seen as highly paradoxical in terms of teaching young people about sustainability but having no infrastructure within the school itself. In both South Lanarkshire and Moray, participants felt that it was confusing and difficult that different Scottish councils use different infrastructures for household waste. The fact that different councils collect different things in different coloured bins was a source of frustration. Whilst recognising the importance of individual efforts and community initiatives, there was some strong sentiment that communities can only do so much on their own without support for new infrastructures and resources to encourage change. Many saw the need for infrastructure transformations in Scotland, alongside aforementioned cultural shifts in societal modes of living.

3.4.5. Community-led transformation

A final theme discussed by rural residents was community-led transformation. To support innovation and entrepreneurial thinking, one suggestion from Argyll was to have local support available through reinstating community development workers. Such workers would be embedded in the community to support the implementation of locally-led change:

"Remember in the good old days when you had community workers? I think that is what you need, isn't it? Because I think engaging with the community is quite easy. And it's just, who then can follow through with that? Community workers did that." (Female, 60–69).

Lack of resources to implement change through community organising is one of the key challenges for rural communities. Support for community clean energy production was also discussed as a way of transitioning to net zero and providing an income stream for communities. People recognise the challenges when existing schemes are not always redistributing wealth for community benefit, but they also see the great potential of rural areas given their vast natural resources. There was a desire for more information and support for communities to develop renewable energy projects to improve local self-sufficiency.

Similarly, in the South Lanarkshire focus group there was discussion about how CE initiatives run by communities and small local businesses often provide support to local people. One example is how the community were setting up a circular economy shop/re-use hub, but as with the renewable energy schemes, people expressed the need for more governmental support. Rural communities are aware of how place-based assets can be utilised for CE transformations and a just transition, and although some examples of good practice were discussed, including individual role models and community schemes, people generally desired more support and information to act as CE enablers.

4. Discussion

The findings from this research indicate that overall, there is some promising, albeit inconsistent, understanding of the concepts of a circular economy and a just transition to net-zero. Some rural residents clearly identified moving from a linear, wasteful economy to one of reducing consumption, reuse and recycling, whilst others were less certain. Compared with the circular economy, the concept of a just transition to net-zero was less well known, with only some people prior to the information intervention being able to comment on it. However, following information interventions, all participants were able to engage with the concepts to discuss what these might mean in practice for their lives, communities and for Scotland. Whilst at times recycling dominated discussions, there was considerable breadth across the focus groups about the range of practices needed; socio-cultural changes related to resource use and nature, changes to more ethical economic and employment practices, shifts in food production and consumption, transport modal shifts and infrastructure change and rural community relationships. These show the extent and diverse of meanings of the circular economy and just transition for rural residents, and the challenges and opportunities identified were similarly broad being both multi-sectoral, multi-scalar and linked to both cultural and systems change.

Repo et al. (2018) showed incongruence between European citizen perspectives on CE that incorporate social dimensions, energy and climate change and European CE policies that prioritise activities like waste management. Our research similarly shows a broad scope in the perspectives of rural residents, and reinforces the need for a holistic and broad view of CE in Scottish policy and practice. This is partly recognised nationally in how the circular economy is linked by the Scottish Government to supporting a just transition to net-zero in tackling the climate emergency, and in energy systems change. However, working across silos and sectors in practice is more challenging and the social dimensions of the CE and issues of justice and inequality around the just transition in Scotland are probably the least well understood by rural residents.

4.1. Policy and practice recommendations

4.1.1. Holistic, systems thinking for CE and a just transition

Based on our findings a key recommendation is for ZWS to approach CE and just transitions holistically, whilst also working to support solutions in specific sectors and with different stakeholders (such as rural communities). ZWS could circular disruption, seeing the move towards CE and a just transition as requiring radical changes including everyday practices. Our findings support the argument for a whole systems approach to a just transition (see (Abram et al., 2022: 1034), which means there is 'not one transition but rather multiple interdependent transition processes'. The rural residents in our research seemed to recognise systems interlinkages, and did not think in siloes when they considered changes that were needed in policy and practice. People were often supportive of wide reaching societal and material changes to achieve these goals, whilst recognising the complexity of transitioning in ways that are just and fair to all. Our findings therefore show evidence of people's desire to see more 'circular disruption' happening today and tomorrow (Kirchherr et al., 2023).

Whilst a holistic and systems conceptualisation is clearly needed in policy and practice our findings suggest further consideration around whether the concepts of CE and just transition should be used explicitly when working with rural communities. This links back to Hart and Pomponi's (2021), argument that a zero-carbon future is a clearer goal than a CE future. Given perceptions of empty 'jargon', there is a need to consider how best to communicate CE and just transition visions. Our research suggests that people understand these the most when they are clearly defined, but also translated into specific kinds of practices with examples. Generally, once understood, the concepts were accepted, and

although potentially dismissed by residents as policy jargon, those same residents see the value in the ideas behind these concepts for a more just and sustainable society.

4.1.2. Collaborative policy-making in practice

A key finding across all of the rural communities, was scepticism around Scotland's national policies and targets, critique of current political will to address the challenges and a feeling of a lack of consultation and engagement on how to achieve the targets for a CE and just transition. A more collaborative approach is needed to engage rural communities and businesses in decision-making to ensure that policies and targets are seen as realistic and achievable. Resident's often debated the merits of local change versus national approaches, but generally all felt a need for stronger national leadership and political will to advance CE. Methods such as citizen's assemblies could be one of many approaches taken to adopt a more collaborative and meaningful approach to CE and just transition policy in Scotland. ZWS could also hold more local workshops with rural communities to co-develop solutions specific to rural contexts and addressing rural challenges to help translate national agendas into locally relevant CE practices. CE and just transition policies, targets and initiatives should be shaped by rural residents, so that national scale action is not met with apathy and scepticism, but seen as an enabling framework for community-led transformations.

4.1.3. Creating new networks of engaged stakeholders

Advancing CE and especially circular disruption requires an engaged network of stakeholders from government, business, civil society to communities (ibid). Our research shows that there is a need for such an approach in Scotland, to empower rural residents as CE enablers. The argument for a more networked approach to rural development has already been made in Scotland (Shucksmith 2018) and we support the conclusion that development policies should link communities with other actors in multi-scalar governance models, supporting local capacity-building through an enabling state (Shucksmith 2012). A key barrier to transformation for CE was shown in how rural residents described feeling uncertain about what changes they could adopt both as individuals and as communities. A lack of knowledge, information and finance was commonly discussed. One way to address this is through the creation of new networks of practice, that allow for learning between engaged stakeholders.

A network could help communities work with government, industry and other stakeholders (such as local schools and colleges) to achieve tangible change towards CE and a just transition. As argued by Potts and Ford's (2022) a key driver of a just transition is 'learning from 'on the ground' local action'. This could take multiple engagement formats, such as events, learning videos, online toolkits, - this should be determined by working with communities directly. The key need is for accessible examples that residents can use to inform their own practices. Sharing practice must also be accompanied by support to implement new schemes locally, and this should include an emphasis on connecting residents intergenerationally.

4.1.4. Funding community-led transformations

A new funding scheme for rural residents could be based on co-developing solutions for CE and the just transition. Given the appetite for learning across areas, such funding could be focused on enabling rural residents to work together across larger rural areas facing similar challenges. This could avoid duplication and maximise viability with a larger population to support community initiatives. Our findings show an appetite for action in areas such as community energy schemes and re-use hubs, as well as more local food growing and changes to transport and industry. With additional funding for CE initiatives, there must be scope for diversity, as what works for communities in Argyll, may not work for communities in South Lanarkshire or Moray.

Communities were aware of the assets within their community but unsure how to proceed with making best use of them in the transition to

Net Zero. Appau et al. (2024) took a community assets approach to climate adaptation and found that this approach was best facilitated through supporting local community role models who are trusted within the community. This is supported by this study where local role models were pinpointed as having a crucial role to play in supporting the transition to sustainable communities. When taking a community-led approach to achieving a just transition it can be helpful to take a place-based approach which can strengthen community identity and support community-led action and resilience (Arnall and Hilson, 2023).

4.2. Future research

Our work addressed the need for rural specific research into the implementation of a circular economy and a just transition to net zero in Scotland. These areas have been underexplored, and we have begun to illustrate the important nuances in how rural residents in different localities in Scotland converge and diverge in perspectives. Future work could help to identify more good practice examples of community CE initiatives as this was not within the scope of our work focused on rural resident perceptions. Additionally, although we sought a diverse group of participants, we were struggled to engage younger people in our research. Focusing on younger people's approach to CE and a just transition would be a fruitful area of research in itself, but is especially important given our findings of perceived differences between generations. This could be achieved by working directly with schools and colleges, as these were identified by our focus group participants as important actors for CE education in Scotland.

5. Conclusion

This paper has presented the findings from a co-designed research project with Zero Waste Scotland exploring the perspectives of rural residents across three localities in Scotland. Our work addressed a gap in knowledge around rural residents' understanding of the circular economy, and a just transition to net-zero, including how such concepts are translated into everyday rural lives and society. Based on focus group discussions, allowing dialogue among residents, our findings show the circular economy concept is better understood than the just transition which had limited recognition. However, once provided with information, rural residents applied the concepts in different ways to their individual lives, communities, and national and global contexts. Our findings show some appetite among residents for radical changes, and reinforce the need for a holistic, whole systems approach to CE and just transitions. Additionally, they evidence a need for a more collaborative approach to rural development, involving rural communities in networks of engaged stakeholders and in policy-making processes There is a need to both increase awareness of how rural communities can participate in implementing the CE and a just transition, and to work more closely with local people to co-design solutions that address the specific challenges and opportunities of rural areas in Scotland.

CRediT authorship contribution statement

Zoe Malcolm: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Bobby Macaulay:** Writing – review & editing, Supervision, Project administration, Methodology, Investigation, Funding acquisition. **Mari Todd:** Writing – review & editing, Formal analysis.

Declaration of competing interest

There are no declarations of interest associated with this paper.

Data availability

The data that has been used is confidential.

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Appendix 1. Research Guides

Focus Group Guide

1. How do you understand the idea of a circular economy?
2. How do you understand the idea of a just transition to net-zero?
3. How do you understand the circular economy and the just transition to net-zero after watching this video and hearing this definition?
4. How do you see these ideas as being relevant to your life and this rural community?
5. What changes do you think would be needed to create a more circular economy/create a just transition to net-zero?
6. Are you aware of any circular economy initiatives in your area? e.g., upcycling, recycling, reuse/redesign, clothes/food swapping.
7. What do you see as the main challenges and opportunities for achieving a circular economy?
 - a. In your life
 - b. In your community
 - c. In Scotland

Circular Economy Video

Global emissions are destroying our planet. 80% of Scotland's carbon footprint comes from the products and materials we use. But there is a solution. It's called circular economy. It's about keeping all of our products and materials in use for as long as possible. It's about changing from take, make and throw away to take, make, remake. For the circular economy to make a difference, we need everyone on board. Businesses need to design and build products that last longer, and everyone needs to reduce, reuse and recycle as a way of life. To find out about the changes you can make. Follow Zero Waste Scotland. Let's tackle the climate emergency together.

Just Transition to Net-Zero Definition

How we move about, use energy, make, and use things is currently being transformed so we can reduce the harmful emissions (also known as greenhouse gases) that are causing the climate emergency. We need to reduce the emissions caused by humans to as close to zero as possible – this is known as Net Zero. The way we achieve Net Zero must also be inclusive, just, and equitable; putting right past harms and, working together across society to holistically build a better, fairer, sustainable future for all – this is known as the just transition. The just transition to net zero describes both where we are going and the journey of how we will get there.

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