

## Creative Circular Economy Approaches to Eliminate Plastics Waste

### Title: Slowing the loop: the role of grief and hope in building new economic spaces.

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In this paper we examine how civil society groups are tackling plastics within the South West region of England. We consider the drivers behind the rapid rise in 'plastic activism' in the region and how these groups contribute to wider considerations of the circular economy. We critique the techno-managerial conceptualisations of the circular economy and rational-actor approaches to nudging individual behaviours and call for more attention to be made to the relational, emotional, and affective connections that people have toward place, environment, and non-human beings. We consider the role of emotions and affect in driving new social practices that are, in turn, re-articulating local economic geographies through place-based responses to environmental concerns. We pose that, in response to feelings of grief and loss (for ecological decline and lost futures; see Head 2016), civil society groups are finding small spaces of hope that contribute to a plastics circular economy through new and reclaimed social practices that slow the loop.

#### Introduction

In response to successive scientific reports showing that the planet is undergoing a climate and ecological crisis requiring immediate and far-reaching action [1], environmental protests have called for urgent social and political transitions toward lower carbon societies. Public consciousness of the need to live within planetary boundaries and transition to a low carbon planet is growing. Public opinion has shifted since the IPCC report in 2018, which warned of dire consequences for human and non-human life if rapid action on climate emissions was not implemented imminently. More than 60% of households surveyed by the Centre for Climate Action and Social Transformations (CAST) in 2019 felt that there is now a high level of urgency to take action [2]. System transformation is being called for from both the bottom-up (environmental protests, NGOs) and the top-down (United Nations Framework Convention on Climate Change). The near global lockdown in response to Covid-19 has prompted governments and citizens to consider what directions social and economic recovery should take. Recent surveys by IPSOS MORI indicate that there is an expectation that action on environment issues should be prioritized.

Resource management has come under increased scrutiny and levels of responsibility, as there is no longer any doubt that dominant systems of extraction-consumption-disposal threaten the social and ecological foundations of human survival. With natural resource extraction doubling since 1970 and continuing to rise [3] and the links between consumption and climate crises are now established [4], the shift toward regenerative systems is becoming more urgent. Within this, the circular economy has gained political and social backing as a system level approach

that seeks to minimise the impact of production, consumption, and disposal by keeping resources within regenerative closed loops [5]. Although the role of governments and businesses are established, the role of place-based community initiatives in this system-level change is less clear. However, as we demonstrate here, place-based community initiatives perform a crucial role in slowing the loop, through social practices and diverse economies, and are key sites within the co-production of a more holistic circular economy, that encompasses social and environmental considerations.

Here, we discuss the possibilities of a circular economy for plastic through the lens of rural place-based initiatives. Through research undertaken across three predominantly rural and coastal counties in southwest England (Cornwall, Devon, Somerset), we consider the drivers behind a rapid rise in plastic activism (broadly understood), how this anti-plastic sentiment has motivated community action, and how the emergent place-based community initiatives contribute to wider considerations of the circular economy. Our research demonstrates the need for more focus on rural place-based initiatives, as sites of new social and economic practices and as change makers positioned between the individual and wider society. We pose that place-based initiatives challenge the top-down techno-managerial discourse of the circular economy, which, through their absence, presents the individual as a passive and rational bystander to wider economic systems [6] rather than a citizen with the agency to participate and change the status quo. We call for more attention to be paid to civil society initiatives and the agency of communities to facilitate new social practices that perform the economy differently [7] and with more circularity, and how these have the potential to underpin sustainable and inclusive rural development pathways. Following Head's work of grief and hope in the anthropocene [8] we also consider the role of emotions, affect, and place in mobilising and shaping pro-environmental behaviours and social and economic

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practices that rethink rural sustainable development through place-based community initiatives that are responding to environmental and social concerns.

The circular economy model of development has been posed as an effective way to address the environmental issues and create sustainable resource use that eliminates waste through closed loop systems. The circular economy has risen in prominence from a sustainable development concept to policy driver, being adopted by China, the EU, and Scotland. The practical emphasis of the circular economy is on closed loops, eliminating waste altogether by keeping all resources within a system of reclamation, use, and reuse [9]. In the UK this concept has followed two key models: the circle/loop, to keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life (see WRAP.org.uk) and the dual loop, two intersecting loops that keep resources in a continuous flow of technical and biological materials through the 'value circle' (see ellenmacarthurfoundation.org). Although moving away from the linear models of production and consumption is largely welcomed by many environmental movements, many of the underlying assumptions are grounded in techno-managerial approaches to social-technical transition, and narratives that seek to better manage resource systems through top down technological fixes. Top down conceptualisations have focussed on better designs, recoverability through incorporating reuse of resources through increased use of recyclable materials, and schemes for companies to recapture materials through end of product use recovery (such as return schemes). Within the urban context the circular economy is gaining traction as a place-based development model, with London and Bristol actively working on strategies to become 'circular cities'. As our research shows, the diverse social and economic practices of rural place-based initiatives are adopting expanded circular economy principles, embedding an ethics of care into an otherwise technical discourse, demonstrating the importance of emotional and affective responses and attachment to place.

Place-based initiatives have gained currency within sustainability transitions. Place remains a contested concept, associated with spatial identities that perform exclusion through a sense of 'rootedness' and 'fixity' [10]. Place attachment and perceptions of what is 'out of place' in the rural have sometimes shaped negative responses to pro-environmental development (particularly windfarms) through NIMBYism [11]. However, recent research has also demonstrated that place-attachment can also be a driver of pro-environmental action [12]. Work on 'progressive localism' also demonstrates that actions are being shaped by outward facing commitments to distant others, rather than inward facing essentialisms [13]. Within the growing emphasis on socioecological threats at both local and planetary scales, place is increasingly understood, by both academics and inhabitants, as relational, dynamic, and more-than-human [14]. The place-based initiatives we examined understood place through predominantly outward facing perceptions, but where inward facing representations were sometime also presented. Here,

most of all, place was understood as a starting point - as Gibson-Graham illustrate, when trying to change the world, start where you are [15].

There is now consensus (social, scientific, and political) that we are in a time of climate and ecological crisis and, as Solnit has shown, civil society experiments with acts of collaboration and experimentation often emerge in times of crisis [16]. Hope drives people forward, as the only alternative to surrender [17]. Arguably, hope engenders emotions, affect, and rationality; as Roeser illustrates in relation to disaster management we need emotions in order to be practically rational [18]. Although fearful and painful emotions, such as those generated by increased exposure to images of ecological harm or the impacts of extreme weather events, are sometimes thought to inhibit the capacity to act [19, 20], the recent surge in environmental activism demonstrates that fear, anger, sadness, and hope can move people to take action, both on the street and in communities. Increased visibility of climate crisis and ecological decline has deeply affected many people, with visible outpourings of loss akin to grief for the futures lost to unfolding events and processes [8]. In response to high profile campaigns and media attention focussed on the impact of plastic on the non-human world, the material has emerged as a key site of passionate politics [21], with political (protests) and social (community initiatives) responses.

Plastic has shifted from hero to villain in a short number of years. Its popularity was driven, in part, by emotions and affect, as plastic, particularly drinks bottles made from PET, started as a marketing hit [22]. Cheap and convenient products have come under increased criticism, as the socioecological costs of plastic waste and pollution have become better understood, and plastic is now one of the most contested materials on the planet. Campaigners for plastic reduction have focussed on three core issues: marine pollution, climate change, and environmental justice. Plastic production is rapidly accelerating, with the packaging, construction, and fashion industries as the primary users. Since its introduction in the 1950s, an estimated 3.8 billion metric tonnes of plastic have entered the environment and this waste is also accelerating. More than 3 million metric tonnes of plastic are thrown away each year, of which 79% of is discarded, less than 9% recycled and 12% incinerated [23, 24]. Plastic waste from the UK is a global problem, with large amounts exported abroad for processing. Investigations into the global trade in plastic waste found that following China's ban on plastic waste imports many UK councils had been exporting domestic waste (including lots that had been sorted for recycling) to countries with weak or non-existent regulations, leading to calls from publics, government ministers, and NGOs for action to be taken. However, as O'Neill examines, plastic waste is a global economy, with complex political economic chains creating a waste picking industry that many of the poorest communities are reliant on for their livelihood, at the expense of human (including their own) and ecological health [9]. In addition, the Centre for International Environmental Law's 2019 *Plastic and Climate: the hidden costs of a plastic planet* reports that production and incineration creates 850 million metric tons of greenhouse gases a year and,

if plastic production grows as predicted, this will rise to 1.34 GtCO<sub>2e</sub> over the next ten years (to 2030). In response to the growing visibility of these global issues, local action on plastic, through individual actions, like product avoidance, and community initiatives, such as sharing schemes and reuse networks are gaining in popularity.

## Methodology

The research addresses two major gaps in current research on the circular economy in general and plastics more specifically: the role and contributions of community-level initiatives and the performance of circular economy practices in rural settings. Our aim was to examine the motivations, actions, and impacts of community initiatives within the rural and coastal areas of the South West region. Research was undertaken in 2019 and 2020, to examine regional initiatives as part of the EPSRC funded ExeMPlaR project. We examined community initiatives that were place-based and that openly claimed to be tackling plastics as either the primary or subsidiary aim of their activities and made specific links to circular economy as a goal or influence. To examine the performative dynamics of community initiatives, the methodology takes influence from community economics, incorporating participatory workshops, participant observation, and mapping typologies of individual actions and emerging social practices. To better understand how social practices are being made, reclaimed, and undone, we look to Shove et al.'s three core elements: 'meanings', 'competences' and 'materials', examining motivations and values, shared know-how and practical intelligence, and objects and infrastructures [25]. Stakeholder workshops were held early in the project (Feb and July 2019), adopting participatory methods to understand what was happening in the region, where it was happening, and who were the key constituents of networks. Using network mapping methods, influenced by social movement research, this data was used to create an interactive topographical map of where initiatives are taking place, creating a performative space that people and initiatives can both view and contribute to. The use of social media within mobilising and co-production was also researched, using discourse and content analysis of text and images. These elements formed the basis of two case studies, the first examining major regional networks and how they mobilise and shape practical action, followed by an examination of community initiatives that focussed on the key circular economy principles, reusing, repairing, and sharing, to better understand social practices.

## Findings and discussion

### The emergence and networking of place-based initiatives in Somerset, Devon, and Cornwall.

Place-based initiatives to deal with waste have been present in the environmental action landscape of south west England since the 1990s, with plastics emerging as a cited issue within the last decade. Most of the place-based community led initiatives were

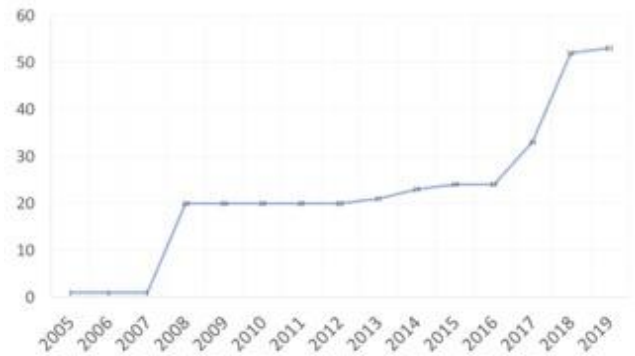


Figure 1: Emergence of place-based initiatives in Devon, Cornwall, and Somerset

in small to medium sized rural and coastal towns (with populations of between 5,000 and 25,000), many of which provide local services to a wider area of small villages. A couple of the initiatives started in the 1990s, with a significant minority emerging between 2007-2009 and the majority (70%) of groups starting since 2017 (see Figure 1). All the initiatives are re-conceptualising the relationships between humans and nature, through acknowledging the relationality of place and global processes, and restructuring place in order to minimise destructive relationships and promote generative ones. Two core networks, both initiated and based within the South West, shape the form and function of actions, through very different approaches. The recent initiatives were almost all affiliated with the Surfers Against Sewage 'Plastic Free Community' scheme; the dominant discourse was that of marine pollution (as we discuss below) and actions aimed at individual and institutional behaviour change. The initiatives that were established prior to 2017 approached the issue of plastic through discourses of waste and resource management and were those whose actions were grounded in systemic change, through social practices and local infrastructures. Most of the established initiatives are affiliated to the Transition Towns Network. In some locations (e.g., Penzance, Totnes), both initiatives are present. Both the 'Plastic Free Community' initiative and those linked to the Transition Towns Network are of interest here, as we understand these networked groups as bringing together multiple civil society and local government stakeholders to create local innovations that perform the economy differently and slow the plastics loop. Both networks name the circular economy as a guiding model and facilitate practices that, we argue, contribute to the circular economy by slowing the loop including **avoid** or **refuse** campaigns, **reuse** initiatives, **repair** workshops, and **sharing** schemes. Although the two networks often overlap, it is important to acknowledge their different trajectories.

Across the three counties, the more established groups were part of the Transition Town Network (and movement) and many had links as far back as the Local Agenda 21 (LA21) policy initiative. This process emerged through the United Nations Conference on Environment and Development (UNCED), or Rio Earth Summit, in 1992 and devolved responsibilities for sustainable development to the local scale, encouraging local authorities, and in turn citizens, to 'think globally, act locally'. As

Barr [26] explains, the significance of affording community and local level participation saw a cultural shift in how citizens contributed to sustainability action, with local authorities facilitating volunteer working groups, usually around food, energy, waste, transport, and biodiversity, and supporting local action through small grants. Many working groups also contributed to local authority strategic plans, though others note the slowness of LA21 processes and the failure to enable participation beyond white middle-class groups [27]. When LA21 was superseded by other local authority policy frameworks, the emerging Transition Town movement offered a new mode of civic participation for those involved in place-based groups. Starting in Totnes, Devon, in 2008, the Transition Town model initially attached itself to the concept of 'peak oil' and working groups (again focussing on food, waste, consumption, and transport) created place-based pathways to end oil dependency. Critiqued for actively taking a post-political standpoint [28] the TTN has developed into a framework for tackling climate change through low carbon living, through an emphasis on new socio-economic practices that create system change from the bottom-up and has an international network of Transition Towns ([transitionnetwork.org](http://transitionnetwork.org)).

The more recent wave of groups, emerging from 2017 onwards, are mostly affiliated to the 'Plastic Free Communities' scheme managed by marine NGO Surfers Against Sewage (SAS). SAS have a strong presence in the South West, starting as an environmental campaign group who successfully mobilised surfers (and others) to protest and lobby against bathing water quality and the practice of raw sewage openly entering the sea around the UK [29]. Starting in Cornwall in 1990, the organisation has grown in membership, scope, and influence over the last three decades, gaining, with the headquarters based in the Cornish town of St Agnes. SAS have been at the forefront of UK campaigning against plastic pollution through their popular 'Plastic Free Community' scheme ([sas.org/plastic-free-communities](http://sas.org/plastic-free-communities)). The Plastic Free Communities (PFC) scheme adopts a similar model to that of the Fair Trade Towns movement, whereby place-based groups can gain accreditation based on completing a checklist of actions and setting goals that combine ethical consumerism with community consciousness raising. At the time of this research more than 30 South West groups had received accreditation and more than 100 had pledged to work toward certification. The steps to achieving accreditation and the Plastic Free Community certificate are based on the size of community. For example, a town with 10,000 residents would need to get five businesses to eliminate or replace three types of single use plastics (SAS recommend bags, straws, sachets), get the local council to commit to tackling single use plastics, and get key organisations (such as schools or church groups) to pledge to take action.

#### **Mediating the matter of plastics and reframing nature-society relations.**

Environmental action movements have recognised that social media is a crucial tool for mobilising action [30]. Prior to ubiquitous access, the internet had already become a key

organising tool for environmentalists around the world, raising consciousness and building political force [31, 32]. Now, with almost universal access to a wide range of real-time information sharing platforms, the growth of social media has created new species of social movement [33]. The speed at which information can reach a global audience through social media, where participation on these platforms amplifies and elevates issues through the ordinariness of liking, tagging, and sharing. Interactive media platforms have shifted the human-nature dynamic within conservation, as people increasingly feel part of the process through following and liking [34, 35]. Moreover, the co-production spaces opened up by social media also shape the form and function of journalistic reporting around contested resources [35]. Following the screening of the BBC natural history documentary series *Blue Planet II*, in November 2017, which included scenes of plastic debris being played with and consumed by marine life, including whales and Dolphins, there was a considerable rise in social media calls for action to ban plastic. In the weeks following the screening, a proliferation of political (anti-plastic protests), economic (boycotts of plastic products), and social (community initiatives) responses were facilitated through social media. An exponential rise in mainstream media attention on plastic pollution followed [36] as did a surge in plastic activism, including NGO mediated actions to return packaging to supermarkets. The 'Blue Planet effect' is cited by the supermarket Waitrose as influencing 80% of its customers to reduce plastic consumption. The findings led Waitrose (and other supermarkets) to experiment with new practices (dry food dispensers, for instance) and alternative materials for packaging. The Glastonbury Festival 2019 was also promoted as a plastic free festival, with restrictions on single use plastics and innovations including water bars. Whilst elements of recent changes can be understood as a new form of greenwashing, that Hobson calls 'circular washing' [37].

As our research illustrates, the increase in place-based groups also soared in response to the program and the debates it opened, mobilising widespread support among a diverse constituency. A small number of the established place-based initiatives had static websites, with no mechanisms for participation from anyone other than those managing or administering the webpages. For most of the initiatives that emerged following the 'Blue Planet effect', Facebook was the primary online space, which was used to recruit new members, share news items and photographs, promote upcoming events, and share personal and group level action. For many groups, particularly those affiliated to the plastic free communities initiative, social media is the main platform for information exchange and networking within and beyond the locality of practical action. Images of animal entanglements and plastic debris collected on beaches would often be circulated across more than one Facebook group. These images and the comments with them are reminiscent of early understandings of waste, as 'matter out of place' [38], with the pristine and natural landscape being an un-natural place for plastic. The coast was, in particular, often presented as a place that should be safe for non-human beings, a narrative that re-writes a past and present that is reliant on the sea as a site of killing (fish).

Moving plastics into broader environmental discourses has resulted in growing instances of contestation, particularly in relation to the eco friendliness of alternative products, such as cardboard packaging having a higher carbon footprint than plastic or aluminium drinks cans being more carbon intensive to recycle than plastic bottles. The ecological credential of bioplastics were a major site of discussion and contestation, with many posts promoting alternatives such as compostable packaging being contested on grounds of ecological and biological evidence and whether these items are necessary in the first place. These discursive battlegrounds are indicative of what McLean refers to as the 'ordinariness of environmental dilemmas' [30]. Contestation raises some important issues about social movements in online spaces. Although most discussions and arguments were illustrative of a highly informed constituency, there are overlapping issues within the organisational structure of such open platforms. Competing discourses can generate some important spaces of generative friction, as conversations can turn into actions or new co-produced understandings. However, online spaces of contestation around complex issues frequently can't be resolved through self-organising small groups, who have minimal input of external expertise or conflict resolution capacity. Through these ordinary and simple interactions, that don't necessitate any physical commitment beyond the phone or computer, the viral spread of images and stories can garner affective and emotional responses.

#### **Performing the circular economy through place-based initiatives.**

As others highlight, there is no natural basis to our current economic system based on financial growth and there is no reason that human and environmental wellbeing shouldn't be prioritised [39]; the economy is not something distant or abstract from everyday lives, it is the outcome of the everyday decisions we make. Recent projects have documented how community initiatives are transforming cities around the world and reconfiguring economic relationships through a range of social economic practices, including sharing and community economies that position environmental and social wellbeing at their heart [40]. In 2020 the municipality of Amsterdam has adopted Raworth's doughnut model as a foundation for rethinking the city through a wellbeing economy framework. While the rural is often represented as the slow moving, low tech counterpart to the smart and progressive urban, our research illustrates that it is also a dynamic space where diverse economies are contributing to wider circular economy systems. As demonstrated through our discussion on the mediating of plastic and the reframing of place (above), rural and coastal inhabitants also recognise that place is not a static location where we work and/or live, but a relational space, the product of global processes where human and non-human wellbeing is interwoven. The place-based initiatives that we have examined are all acting with both the local and global in mind; attentive to social and environmental wellbeing in their immediate surroundings and global issues such as marine pollution, climate change, and natural resource management.

The place-based initiatives we examined didn't position themselves beyond the state (unlike most protest movements) but did, on the whole, operate beyond its neoliberal rationalities. The circular economy was approached as a framework, rather than model. Within the framework, a number of diverse economies are practiced. Within our research, we have focussed on avoidance, reuse, sharing, and repairing, understanding these as core social practices that contribute to the circular economy, by slowing the loop, and to community capacity to thrive. Two sets of initiatives are rising in popularity in the study area: sharing libraries and Repair Cafés.

The study areas has a growing cohort of sharing libraries, including those with their own premises, those situated within existing community centres, and the world's first mobile library of things, which will serve rural towns in Devon. A number of additional groups are also in the process of setting-up sharing libraries in at least four additional communities. Sharing libraries aim to meet the needs of users through an acknowledgement that the value of many household items (electrical, DIY, leisure, gardening etc.) is in the service they provide, services that are often not needed on a daily basis. Sharing schemes provide a wide constituency of people with access to the services that products enable without the need to own them; for instance, the service of cutting the lawn, without the financial cost and storage space needed to own a lawn mower [40]. A focus on service provision rather than ownership is increasing viewed as an environmental issue, by reducing resource flows, and a social wellbeing strategy, by increasing people's capacity to access the services that products provide at affordable financial cost.

The study area also has a growing number of regular (usually monthly) Repair Cafés, where skilled volunteers will endeavour to fix household items, usually ranging from electrical to clothing, for a donation to the initiative or a small charge to cover replacement parts. The aim is to keep items within use for longer, avoiding the need for new purchases. Repair Cafés are internationally networked and have been important actors within campaigns against product obsolescence and new laws on the right to repair. Again, these are driven by an ethics of care for both environmental and social wellbeing.

#### **Conclusions**

Our research addresses a lack of focus on the circular economy practices of rural place-based initiatives and the dual possibilities of bottom-up organising and progressive forms of localism. We have shown that there are social and economic practices being made, unmade, and reclaimed, that can contribute to a circular rural and offer inclusive forms of sustainable development. We have shown that place-based community initiatives are contributing to a wider regional circular economy through social practices that slow the loop - reducing the need to buy products and helping to keep items in use for longer. Despite the prevailing techno-managerial emphasis of circular economy models and narratives we argue

for importance of recognising the role of emotions, affect, and place. Diverse economies are being motivated by both rational and emotional and affective responses to local and global ecological and social concerns, reconfiguring and expanding circular economy discourses to acknowledge ideas social wellbeing in addition to managing resources.

## Conflicts of interest

No conflicts of interest.

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