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'The Fight for Fairbourne' - A Welsh study of environmental harm and its victims

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Abstract:

The focus of this paper is the study of the Welsh seaside village of Fairbourne, located on the Mawddach Estuary, Gwynedd. Due to rising sea levels and as a direct result of a warming climate, there are palpable and stark warnings that Fairbourne will be decommissioned by the year 2045, with very real consequences for its some 800 residents. This has triggered the media to deem its population as the UK's first 'climate refugees' (Barnes & Dove, 2015), highlighting the community's vulnerability and uncertain future in the face of a deepening climate crisis. Written from a Green Criminological perspective, this paper presents a conceptual exploration of whether the residents of Fairbourne are subject to climate change as a form of environmental harm, and whether they can be considered environmental victims. Although they cannot be treated as victims of environmental crime as defined by criminal law, their enduring adversity as a result of a warming climate and rising sea levels cannot be neglected. Accordingly, secondary sources of information will be analysed to explore particular types of harms, including economic, social and individual, determining how the experiences of coastal communities can help shape wider social, economic and political processes relating to climate change and environmental harm more generally.

The Current Climate Debate within Green Criminology

The climate crisis is at the forefront of debate surrounding the effect of anthropocentric harm (Halsey & White, 1998) on our ecosystems. Over the past two years, this debate has been gaining traction and it is no longer possible to deny climate change and its effect on humanity and our ecosystem with any credibility (Oreskes, 2004). As Halsey (2004) argues, our destructive actions can no longer be regarded as 'blips', in the history of our time on this planet and those who seek to whitewash these arguments are being asked to justify their position. As a result, Criminology has been responding with a multidisciplinary approach to the climate crisis, attempting to improve our understanding of the causes and consequences of climate change and with the intention of informing decision-makers at the local, regional, national and international levels.

To this end, Criminology as a science is no different, and within the discipline, there is now a significant body of work aiming to develop our understanding of criminological, societal as well as public health consequences of environmental harms and injustice (Beirne & South, 2007; Herbig & Joubert, 2006; Lynch, 1990; Sollund, 2008; South, 1998; Walters, 2010; White, 2008). Some have argued, however, that Criminology's response to the climate crisis has been sluggish and too much of its focus has been on the more 'orthodox' crimes, often ignoring non-human and human victims completely from its discourse (Halsey, 2004, p. 834). The narrow focus on environmental crimes has been widely contested by green scholars within the discipline, who argue that it could partly be responsible for an apathetic response to environmental degradation and its effects more generally. This is also true when considering the concept of environmental victims, which will be discussed in more detail later.

In response to this failure, Green Criminology has reached beyond the traditional focus on crime as the making and breaking of laws, and instead 'operates as a tool for studying, analysing, and dealing with environmental crimes and wider environmental harms that are often ignored by mainstream Criminology' (Nurse, 2017, p. 2). It is what Nurse (2017, p. 3), refers to as a 'call to arms', implying that mainstream Criminology's lack of response to our increasing planetary destruction has been inadequate, or even disturbing. To this end, Green criminologists have put a particular emphasis on the concept of environmental harm as well as crime, arguing that harm to our environment, in any form, poses a significant threat to the health of our planet's systems, which in turn results in widespread and manifold victimisation of human and non-human actors (Lynch & Stretesky, 2014). Although the concept of 'harm' has limitations and is somewhat contested, it is useful in that it encompasses a wider range of considerations than a narrow legal focus, 'concerning rights, justice, morals, victimisation and criminality' (Nurse, 2017, p. 1) a point which will be discussed later in the paper. This article will consider environmental harm in relation to the village of Fairbourne, and whether the residents can be considered victims of environmental harm as a direct result of the effects of anthropogenic climate change. Rather than undertaking primary research, the paper will be a conceptual exploration of environmental harm with an analysis of secondary sources relating to Fairbourne. Although this method can be limited in scope, gaining access to individuals and key stakeholders within Fairbourne proved difficult. Over recent years, the community has been the focus of a number of consultations, reports (many of which will be discussed within this paper) and regular media attention. As a result, and as described to the author by a key stakeholder within Fairbourne, the residents are experiencing 'consultation fatigue', which suggests the complicated and emotional predicament that the residents find themselves in.

The Community of Fairbourne

Located at the mouth of the Mawddach Estuary, the village of Fairbourne is situated within the

ward of Arthog, Gwynedd, and within the boundaries of the Snowdonia National Park. In terms of its demographic, it has a population of approximately 800, located in 420 residential and business properties, with 700 of these residents living in the area permanently (Welsh Government, 2019). The village itself houses a village shop, a butcher's, school and deli. In the summer months, the population increases to approximately 3000. It is therefore an important holiday destination in Gwynedd. It is a relatively 'new' village, which was built on reclaimed land in the late nineteenth and early twentieth century as a Victorian resort project, founded by Arthur McDougall of McDougall's flour and its miniature railway was built in 1895 to carry materials for the building of the village (Fairbourne Moving Forward (FMF) Partnership, 2019). Perhaps unsurprisingly, an article in *The Guardian* in 2019 suggested that the community is a somewhat 'eccentric', English-speaking village, which is not representative of this part of Wales as a whole. According to the 2011 census, 65.4 per cent of Gwynedd residents are Welsh speakers compared to the figure of 35.9 per cent in the Llangelynnin electoral division where Fairbourne resides (StatsWales, 2013). Its population includes a high proportion of retirees. Recent data from Gwynedd Council suggest that 62 per cent of residents in the Arthog Community Council area (Fairbourne, Friog and Arthog) are 55 and over and 83 per cent own their houses outright (Fairbourne Moving Forward Partnership, 2019, p. 4). By way of sea defences, the village of Fairbourne is surrounded by a natural shingle bank, with a reinforced crest wall for additional protection from the sea. It is further defended from flooding by a tidal embankment within the estuary, which was strengthened in 2013 (FMF Partnership, 2019). According to the Welsh Government (2019, p. 9) 'Fairbourne is currently defended on both its estuarine and coastal frontages, however rising sea levels mean that much of the village would be below normal high tide levels within the next 50 years'. In conjunction with this forecast, Gwynedd Council founded a project board to consider in detail its implications. As part of the council's response to this, Fairbourne Moving Forward (FMF) was established in 2013, with the aim of responding to the situation with a multi-agency approach, that 'addresses the complex issues identified, drawing upon expertise and knowledge from a range of organisations and the local community' (FMF Partnership, 2019, p. 4). They have also argued that although the village is currently protected to a 'good standard' (2019, p. 4), climate change will inevitably lead to increasing sea levels and a heightened intensity of rainfall, augmenting the community's vulnerability to extreme weather events.

Current climatic predictions suggest a global sea level rise of at least 12 inches (0.3 metres) above 2000 levels by 2100, which is based on a low-emission's pathway. If greenhouse gas emissions continue to rise, sea level rise could be as high as 8.2 feet (2.5 metres) above 2000 levels by 2100 (Lindsey, 2021). The latest Intergovernmental Panel on Climate Change (IPCC) report (2021), suggests that the rise in global temperatures is set to reach 1.5 °C between 2030 and 2052, significantly impacting the probability of extreme weather events globally. As the climate crisis intensifies, flooding incidents in Fairbourne will increase and protecting the village and its inhabitants will become progressively challenging. As evidenced by the FMF Partnership:

Predictions, accompanied by evidence from local monitoring, show that by 2054 it will no longer be safe nor sustainable to remain in Fairbourne. It is important to note that in the event of a significant breach of the sea defences prior to 2054, it is possible that relocation of the community may occur at that time. (2019, p. 6)

At Barmouth, which is three miles north of Fairbourne, current increases in sea level rise are approximately 4.7 mm per year for this span of the Ceredigion Bay coastline. On average, this aligns with, or is slightly higher than, predicted levels, which are generally accelerating as the century progresses (FMF Partnership, 2019, p. 7). In addition, increasing atmospheric greenhouse gas emissions will generate more extreme weather events (Coumou & Rahmstorf, 2012; Huybrechts et al., 1991; O'Gorman, 2015). In turn, this will intensify the vulnerability of coastal communities increasing the risk of a breach to the flood defences at Fairbourne. These issues were raised as part

of the West of Wales Shoreline Management Plan (SMP2) in 2013, details of which will be discussed below.

Shoreline Management Plans

Over the past decade, the Environment Agency and local councils have been developing Shoreline Management Plans (SMPs) to attempt to manage the threat of coastal change. An SMP is an extensive assessment of the uncertainties associated with coastal processes (Natural Resources Wales, 2021). The Welsh government have suggested that they administer a timetable for policy and guidance for communities (Welsh Government, 2019, p. 14). Their purpose is to seek to reduce the risks to individuals living on the coast as well as aiming to conserve the developed, historic and natural environments. As noted by Natural Resources Wales or the NRW (2021) the SMPs establish a strategic policy direction for coastal management over a number of years. These are divided into particular epochs, which include the short term (Epoch 1, 0–20 years), medium term (Epoch 2, 20–50 years) and long term (Epoch 3, 50–100 years). Shoreline policies are then tailored to specific epochs and are then assigned ‘policy unit’, for each SMP epoch (Natural Resources Wales, 2021). Individual SMPs have been produced for the whole coastline of Wales, England and Scotland, and in 2010 the original West Wales Shoreline Management Plan was published, with an updated version, West of Wales Shoreline Management Plan 2 (SMP2) in 2013 (FMF, 2018). It was drawn up by international flood defence experts, adopted by Gwynedd Council and approved by the Welsh Government in January 2014¹. Until 2025, as part of the first epoch, the proposal for the Fairbourne Embankment is to ‘hold the line’, attempting to maintain artificial defences so that the current shoreline remains. Over the second and third epoch, until 2105, this will change to ‘no active intervention’, meaning that there will be no planned investment in coastal defences. The policy outline therefore is one of a managed retreat or relocation (Welsh Government, 2019, p. 17).

The significance of these policies has faced strong opposition from the community, with a recent article from *The Guardian* concluding that the residents feel a ‘mixture of sadness, denial and confusion about the long-term threat’ (*The Guardian*, 2019). Some have questioned the possibility of flooding in the area, with others suggesting that the council have responded in ‘panic’ (*The Guardian*, 2019). In a report commissioned by the Welsh Government (2019, p. 9) it was suggested that there have been ‘concerns’ with how the delivery of the SMP2 was communicated to local residents and that improvements could have been made in regard to local engagement. The media have focused widely on these concerns and the inadequacy of the consultation process. Articles, containing often sensationalised headlines, reporting on both the local, regional and national level, nearly all make some reference to the residents of Fairbourne as the ‘UK’s first climate refugees’ (BBC News, 2020). Although an increasingly significant issue, this paper will not focus on the concerns surrounding climate-induced migration and in particular the residents of Fairbourne as ‘climate refugees’ (Barnes & Dove, 2015), as this in itself deserves its own analysis. This paper will instead focus on the specific harms to which the community are increasingly exposed.

As part of a continued effort to engage with the local community, Gwynedd Council have been working with local stakeholders in the development of a management plan for the community. This process has been an attempt to plan for the future and, as a direct result, the Fairbourne Facing Change (FFC) Community Action Group² was established in 2014, partly in response to the increasing media attention that the residents were facing. Arguably, the group were also reacting to what they considered to be a lack of consultation on the future of the village, and expressed a need to ‘inform, engage and involve the people whose lives have been deeply affected by the situation, which could

1 Can be read here <https://www.westofwalescoastalgroup.wales/>

2 A community action group established with the intention of supporting the residents and homeowners of Fairbourne who are contesting the SMP2.

have been considerably lessened, had we been consulted and engaged at the time stated in the Council's timeline' (Welsh Government, 2019, p. 22). Engaging with the local community has been challenging for Gwynedd Council, with the issues raised in the SMP2 having a profound and emotional impact on residents (FMF Partnership, 2019)

Gwynedd Council have no statutory obligation to provide flood and coastal defences, which contrasts with the statutory obligation to protect European sites conserved for their biodiversity. They do however have 'permissive powers' (Joseph Rowntree Foundation, 2011, p. 14) to defend from flooding. This raises some important debates surrounding the protection of communities over natural habitats or what is often referred to as 'birds vs people' (Joseph Rowntree Foundation, 2011, p. 14).

Although Fairbourne is the first community of its kind to be defined as unsustainable in the UK, it is not unique in its current predicament. There is a growing body of evidence drawn from research undertaken in relation to other places facing coastal realignment (Welsh Government, 2019, p. 7) that suggests that many communities will have to confront their increasing vulnerability to the climate emergency. Over the last 10 years, the Shifting Shores +10 Research by the National Trust³ recognised a developing shift in UK coastal adaptation policy, drawing attention to gaps between existing policies and plans, understanding the future and funding and capacity issues for SMPs. The next section of this article will consider whether the residents of Fairbourne can be considered environmental victims and what implications this might have for coastal communities across the UK.

Environmental Harm and Environmental Crime

As previously mentioned, Green Criminology can refer to a focus on environmental harm or environmental crime. It is always concerned with justice or injustice towards biodiversity and ecosystems as well as victimisation. The study of Green crime is not a new phenomenon, however its deliberation within Criminology is relatively recent. This is partly because of the uncertainty surrounding the label of 'Green crime', which is often used to describe activities that are in fact lawful, for example fishing or cutting down trees (White & Heckenberg, 2014). Indeed, as expressed by White and Heckenberg (2014, p. 9) 'environmental crime itself is consistently undervalued in law'. In addition, environmental harm is often deemed acceptable if the economic benefits outweigh the potential risks to both human and non-human entities, with harmful actors and actions protected, subsidised and condoned by notions of economic and societal progress. This acceptance is systemic in our current global society. Trawling fish on an industrial scale or deforestation cannot be considered intrinsically 'criminal', however their effects are harmful and frequently destructive to human and non-human actors, who we might in turn characterise as victims.

The key focus of Green Criminologists has been the study of environmental crimes (White & Heckenberg, 2014, p. 8). Lynch and Stretesky (2003, p. 231) have strongly criticised this approach, arguing that the perspective needs to 'awaken' to the extent environmental harms are destroying the environment and those who reside on this planet. The concept of environmental harms can be discussed within a sociological or socio-criminological framework (see Wright Mills, 1959 & Young, 2011), ensuring that the historical, cultural, societal and political context of environmental transgressions is considered and observed. White (2011) defines environmental harms as activities that are harmful to humans, non-human animals, and environments, regardless of whether they are legal or not. He places responsibility for environmental harms on the state, corporations and powerful actors, who have the influence to construct definitions of environmental crimes as well as the processes that allow or condone them. Planetary destruction is accepted in the name of profit, under the influence of global capitalism and exploitation of humans and non-human animals and

3 Please see <https://www.nationaltrust.org.uk/features/living-with-change-our-shifting-shores>

entities (White, 2020). As suggested by Buckley and Newell (2010), environmental harms continue to increase and yet those who exercise the greatest influence continue to support policies and practices that contribute to the current climate emergency.

When discussing the concept of environmental harm, it is impossible not to consider victims and victimisation, which can be both human and non-human. There is a distinct perspective within Green Criminology, which focuses on climate change as a specific harm. Climate Change Criminology focuses on harm to both human and non-human victims, such as animals, rivers, trees and mountains (White, 2020). However, he also frames the human victims of environmental harm within an environmental justice perspective, whereby environmental rights are an extension of human or social rights. This paper is aligned with White (2020), limiting its focus to human victims, although the effects on non-human actors are of equal relevance.

As with Green Criminology, Hall (2012) suggests that victims of environmental harm have also been largely ignored within current victimisation literature, and crimes or harms committed against the environment are in fact 'victimless' (White, 2020, p. 81). Hall (2012) maintains that environmental victimisation is an elaborate and holistic social problem. He usefully embeds environmental victimisation within the 'social harms', approach as discussed by Hillyard and Tombs (2003, p. 2). Consequently, the use of 'harm' rather than 'crime' when discussing environmental victims allows for a cross-section of individual experiences of victimisation, such as 'emotional suffering' (Hall, 2012) as well as the involvement and opinions of wider organisations. In turn, this allows for a holistic and integrated understanding of environmental harm and its victims, rather than those actions and consequences defined only by law. As previously discussed, the community of Fairbourne are already experiencing the negative emotional consequences of their situation but have no legal recourse.

As will be demonstrated, the environmental harm concept is especially useful when discussing Fairbourne if we consider that no specific environmental crime has been committed and that there is no definitive transgressor to punish. However, the community can be considered human victims of environmental harm, the effects of which will be a loss of security and financial damage, negative implications on health and well-being as well as the loss of community (FMF Partnership, 2018, p. 20) The focus on harm considers those who are primarily affected by these transgressions as well as the political and societal decisions that may have led to their adversity. When determining responsibility for the suffering of particular people and places in the context of environmental harm, it is important to differentiate between the causes of environmental harm and the choices made by political actors (usually at a closer geographic distance) in response to the challenges faced. In the case of Fairbourne, both rising sea levels due to anthropogenic global heating (environmental harm) and a lack of political will on the part of the local authority and the Welsh government are responsible for the current and future experience of people and place.

Although an important concept within Green Criminology, the concept of environmental harm is not without its limitations. As a methodological approach, it is difficult to quantify and, as suggested by Hall (2012), traditional criminology has struggled with the idea of harm. Hillyard and Tombs (2007) have argued that identifying specific harms that are experienced by people is objectively difficult, especially as it cannot depend on an existing body of law. However, Hillyard and Tombs (2007) argue that a new social harms approach is required if Criminology is to develop scientifically, because the concept of crime 'lacks ontological reality' (Lynch et al., 2013, p. 997). The concept is far more responsive to the rapid pace of harmful change than a narrower focus on crime – this is especially beneficial in the area of environmental harm given future climatic projections. Thus, it allows for both a greater focus on the present situation and potential futures. It also provides a fo-

cus for those who are being affected by these damages and presents an argument for environmental victims more generally (Hillyard & Tombs, 2007). In this vein, Hillyard and Tombs (2007, p. 17) make a case for the potential of an environmental harms approach to define a 'harmed community', who are harmed physically or financially in a particular geographical area. This approach is particularly useful in imagining how the community of Fairbourne could be impacted by rising sea levels caused by climate change.

For the purpose of this paper the concept of harm will be used to analyse the effect of climate change on the residents of Fairbourne and the status of the residents as victims of environmental harm. The fate of the community of Fairbourne will not only impact this small area of Wales but will also have wider implications for the rest of the UK and beyond. Understanding this community's experience can help inform our understanding of the wider social, economic and political processes relating to climate change.

Climate Change as Environmental Harm

Some examples of environmental harm include air pollution, deforestation, water pollution, resource depletion, animal abuse and, more recently, climate change. As expressed by White (2020, p. 9) 'Climate change is the most important international issue facing humanity today'. Within Criminology, the effects of climate change are only just being discussed (White, 2020) but there is no longer any question whether climate change is occurring, but rather how quickly and what its effects are.

Climate change is caused by greenhouse gases, which can absorb and secrete infrared radiation. Although there is a natural greenhouse process, which makes life on earth possible, a concentration of particular gases (mainly CO₂) has exacerbated this natural process leading to climate change (White, 2020). This interference with the natural process is mainly a result of human behaviour, such as the burning of fossil fuels for power or heat, and deforestation. The period of global changes brought about by human activity is called the Anthropocene (Shearing, 2015), which began during the Industrial Revolution (Shiva, 2008). Even as our awareness of the human cause of climate change has increased, destructive behaviours have continued to be condoned under the guise of economic development and growth. The collective human response to climate change has been broadly defined by a lack of political will. This inertia has resulted in insufficient mitigation and adaptation, with the current situation and future projections deteriorating year on year (White, 2018). Undeniably, we are experiencing changes to our environment that are becoming the 'new normal', but which will have devastating repercussions on our ecosystems and the multiple systems that comprise human life.

As White (2011, p. 2) suggests: 'in many ways and from the vantage point of future generations, present action and lack of action around climate change will most likely constitute the gravest of transnational environmental crimes.' While with the lens of history the criminal basis of much of humanities current doings will probably seem self-evident, current international and national legal and criminal frameworks are not keeping pace with the destructive action. The conceptual lens of environmental harm helps bring the future eye to the present tense.

Research suggests that disadvantaged coastal communities, such as Fairbourne, will also bear the brunt of the climate crisis (Joseph Rowntree Foundation, 2011). Work undertaken for the Department for Environment, Food and Rural Affairs (DEFRA) on community adaptation to coastal change established that coastal communities do not have enough awareness of how climate change will impact their lives and the communities in which they live (Fernández-Bilbao et al., 2009). Climate

change is a global problem, however its implications will be experienced at the local level, often in rural settings, and experienced differently by different groups and communities (Ionescu et al., 2005). The varied response of involved political actors in these places will also have a significant bearing on local experience.

The UK was the first country in the world to provide a legal framework in an attempt to respond to the changing climate and its impacts (Buckley & Newell, 2010). This was called the Climate Change Act 2008, which aims to ensure the UK government responds according to climate change and establishes its commitments in terms of reducing greenhouse emissions and reacting to the impacts of climate change. As part of this Act, the government are required to implement a National Adaptation Programme, which will be informed by an analysis of the risks that the UK will face as a result of a changing climate (Joseph Rowntree Foundation, 2011).

Despite this, little or no research has addressed the social impacts of climate change in the UK. The body of research, until recently, has been predominated by scientific and economic considerations. However, the Joseph Rowntree Foundation (JRF; 2011) recognises that climate change poses ‘unquantifiable risks to people’s health, economic livelihoods and access to services, and to particular population groups, and highlights how climate change is contributing to increasing social vulnerability’ (Joseph Rowntree Foundation, 2011, p. 30). Within Criminology, the JRF’s (2011) emphasis on social vulnerabilities, resonates with the work of Hillyard and Tombs (2007) on ‘social harm’. Hillyard and Tombs’ (2007) analysis establishes how these harms are preventable as they do not stem from natural causes, but rather human (in)action and in the case of climate change the emphasis on financial growth and profit above the health of the planet. Considering how climate change will, and is already, affecting coastal communities, there is a conspicuous lack of research on the potential social impacts of climate change in the UK and how it will be experienced differently by specific groups or individuals.

Victims of Environmental Harm

Those who are victims of environmental harm rather than crime are frequently ‘real, complex, contradictory and often politically inconvenient victims’ (Kearon & Godey, 2007, p. 31). There is a strong case that the community of Fairbourne are all of these things. As a result of the increased flooding risk, properties in the village are said to have ‘little or no value’ as estimated by housing surveyors (Fairbourne Moving Forward Partnership, 2018, p. 20). Furthermore, mortgages are no longer available for properties in the village, which affects people’s mobility as well as their ability to invest in their homes. The community themselves have not received any offers of compensation for the potential loss of their properties and/or businesses – an example of where environmental harm combines with inadequate political action at the local and national level to produce a state of environmental victimhood.

Williams (1996) is a prominent writer on the concept of environmental victimisation. He argues that there is a need for ‘social justices to parallel formal legal processes’ (Williams, 1996, p. 200) and defines environmental victims as:

those of past, present, or future generations who are injured as a consequence of change to the chemical, physical, microbiological, or psychosocial environment, brought about by deliberate or reckless, individual or collective, human act or omission. (Williams, 1996, p. 35)

Williams’ (1996) definition aptly describes the current predicament of the residents of Fairbourne, in particular how human activity (and inactivity) has caused irreversible changes to the climate, inadvertently raising sea levels and potentially displacing a whole community. However, this perspective considers only the human victimhood of environmental harm. In order to provide a balanced

approach, it would be effective to examine how the protection, decommissioning or relocation of Fairbourne will affect the local environment more generally. Any future management of the area could potentially affect the natural environment either positively or negatively. Continuing to manage the sea defences in the short term could lead to an increased loss of intertidal area in return for limiting the impact of change in the defended area (FMF Partnership, 2018, p. 21). The long-term effects of maintaining current defences would mean significant beach loss. The area being defended from flooding would therefore become progressively detached from the biodiversity-rich habitats of the estuary. Potentially, decommissioning Fairbourne could stimulate wider positive changes to the natural environment. For example, in Morfa Friog, a wetland habitat was strengthened by Natural Resources Wales in an attempt to attain conservation commitments. This would be further strengthened by continued development of the natural environment 'with the intent to create a naturally functional system that is allowed to adapt in the future' (Fairbourne Moving Forward Partnership, 2018, p. 22). This emphasises the often contradictory nature of victimhood, especially when both human and non-human actors are studied. There is no easy way around these forms of contradiction. This paper sidesteps the issue by limiting the focus to human victims only. Of course, this does not negate the contradiction.

Social Inequality and Environmental Injustice

According to a report by the JRF (2011) the effects of climate change will disproportionately affect coastal communities that may already be vulnerable due to their socio-economic characteristics and their reduced capacity to adapt to a changing climate. In addition, some coastal local authorities have areas of high deprivation. This hampers their ability to prepare sufficiently for the climate crisis. For example, they may be responding to an acute housing need or urgent regeneration. Budgetary constraints may therefore mean that protecting communities from flooding or rising sea levels may not be possible (Joseph Rowntree Foundation, 2011). It is difficult to generalise the impact that climate change will have on individual coastal communities and the capacity of each community to respond to these challenges. However, in light of the predicted severity of these impacts, it is likely that, with exceptions, the most deprived areas of the UK will be exposed to a greater level of harm. Indeed, the JRF (2011) found that people living in deprived areas were 62 per cent more likely than others to be at high risk of coastal flooding.

Economic Harm

Even considering the most conservative estimation of rising sea levels, communities along the UK's coastline are likely to experience high costs and diminished livelihoods when having to respond and adapt to climate change. According to the FMF Partnership (2018) there are currently 430 properties at risk of catastrophic tidal flooding if there were a breach in the existing tidal embankments or open coast defences. Severe risk of flooding has serious consequences for house prices, where it can become near impossible to sell a home or other property. It can also be very hard to purchase house insurance and therefore protect homes and property from potential risks (Joseph Rowntree Foundation, 2011). These economic harms are already apparent in Fairbourne. Indeed, properties in the village are now of little or no value and some residents have had to sell their properties at a low price in order to relocate (FMF Partnership, 2018). Like a domino effect, this has negative implications for the value of property in the village, undermining the local housing market. There are also wider economic harms related to potential business failure, with a loss in business confidence affecting the amount of investment the village receives. There are significant concerns related to the sustainability of investing in an area which may need to be decommissioned in the near future. The area relies heavily on tourism and a reduction in tourism would make facilities and businesses in Fairbourne unsustainable. However, attracting tourists to Fairbourne as opposed to other locations on the Welsh coast requires sustained investment from businesses and local gov-

ernment, investment which is already disrupted by the prediction of environmental catastrophe hanging over the town. Moreover, Gwynedd and West Wales generally is a relatively economically deprived area of Western Europe. This economic harm will also be experienced at the local authority level, partly because Gwynedd Council will receive less direct income from taxes from individual residents as well as the potential loss of tourism (Fairbourne Moving Forward Partnership, 2018). It has also been suggested that the uncertainty surrounding the sustainability of Fairbourne will affect the health and well-being of the community, increasing the need and cost of local authority services.

Some potential opportunities have been identified, such as business development focused on 'tourism of the future' or 'the village beyond climate change', where the village can be showcased as an educational tool to demonstrate the impacts of climate change (FMF Partnership, 2019). However, this potential opportunity will no doubt be of little comfort to the current residents of Fairbourne. In addition, some environmental benefits may be possible with the development of alternatives that have also been suggested are cost-effective (FMF Partnership, 2019). These include agricultural opportunities in the form of salt marshes. It calls into question whether these potential benefits outweigh the economic cost of decommissioning and the relocation of the community.

Social Harm

The International Association for Impact Assessment (IAIA) defines social impacts as 'all impacts on humans and on all the ways in which people and communities interact with their socio-cultural, economic and biophysical surroundings' (Referenced in Joseph Rowntree Foundation, 2011, p. 11). In responding to climate change, social impacts are experienced distinctly by different individuals. This will depend on their vulnerability to climate change (Spickett et al., 2008). Many coastal communities are already vulnerable to significant challenges, which include youth outmigration and inward migration of older people. This leads to aging populations and high proportions of retirees and people receiving benefits. This picture is particularly true of Fairbourne, which has a high proportion of retired individuals, with 62 per cent of residents in the Arthog Community Council area (Fairbourne, Friog and Arthog) being aged 55 and over. There is also an over-reliance on tourism, which results in seasonal employment, low incomes and pressure on services during the summer months (Centre for Rural Economy, 2006). These challenges will only be exacerbated as climate change accelerates, increasing the community's vulnerability and ability to adapt. Comparable research by Berman et al. (2019), who studied the response of seven coastal communities to climate change, across four different continents, found that each community had an aging population and heightened outward migration of their younger population. This impeded their ability to respond to the challenges posed by climate change. Lack of mobility, inflexible social networks and limited financial capacity were key factors.

Additional data from the FMF Partnership (2018) suggests that these demographic changes will accelerate the closure of the local school, village hall and local shop, increasing the harm to those individuals who do not have the financial means to relocate. This also heightens the experience of social inequality and division, where some members of the community have the financial and social capital to relocate whilst others do not (FMF Partnership, 2018). When considering the future of the residents of Fairbourne, decommissioning the village may disproportionately impact the older population as they may lack the social and financial capital to relocate. Those individuals with the economic means can relocate to more suitable areas, whilst poorer individuals have little choice. This will result in significant changes to the make-up of the community and a severing of the proximate social relationships that are the cornerstone of community. Such changes later in life may also affect their mental health and well-being. Research by Quinn and Adger (2011) suggests that extreme weather events caused by climate change, such as flooding, can result in older adults having

to move a number of times. This in turn can put 'psychological pressure on the individual', which can also be disempowering for them so late in life (Quinn & Adger, 2011, p. 2258)

Individual Harm

At the core of the social and economic harms discussed above, are the individuals that make up the community of Fairbourne. Unfortunately, there is limited direct source material with which to obtain the qualitative experience of the environmental harms affecting the community. This is a significant gap in our understanding. Our best guide here is the survey data collected by the Social & Economic Adaptation Group for Fairbourne in 2019, which demonstrated high levels of stress and anxiety associated with the current situation.

The survey found that almost 92 per cent of the homeowners interviewed in the village have suffered a significant decrease in the level of their well-being since becoming aware of the impacts of climate change. A further 86 per cent of those interviewed said their level of mental health had declined and 82 per cent of those interviewed said their physical health had deteriorated, whilst 85 per cent of residents no longer felt positive about the future (Fairbourne Moving Forward Partnership, 2018, p. 20). These figures are indicative of the sort of emotional suffering that Hall (2012) theorises. The survey indicates the validity of viewing the people of Fairbourne as environmental victims, in large part as a consequence of the individual experience of environmental harm.

Although this survey does not provide much by way of detail, it does give a crystal clear picture of the severe psychological harm caused by avoidable environmental change and a lack of political will to adapt and recompense. The people of the community have lost any secure promise of a future at Fairbourne. This has already negatively affected their mental health and well-being, a situation which will likely worsen as events unfold.

Responsibility

There is a clear negation of responsibility from any actors towards Fairbourne – its society, economy, and individual residents. Faced with immense environmental harm caused by anthropogenic climate change, the community are left in a position of victimhood, with nowhere and no one to effectively apportion blame or responsibility. From an environmental harms approach, the effects on the residents are significant and raise some interesting debates about the culpability and responsibility associated with the failure to respond to the climate crisis. If we agree with Hillyard and Tombs on the role of the state in response to social harms (2007, p. 11) that 'the aim of welfare should be to reduce the extent of harm that people experience from the cradle to the grave', then the situation in Fairbourne is a clear example of negligence towards a harmed community. Of course, the local and national state actors who might do more to reduce the extent of the environmental harms that the people and community of Fairbourne are experiencing are not those responsible for bringing about said environmental harms. Apportioning responsibility is therefore complex. In the case of Fairbourne, and likely other places, when thinking of responsibility, it is useful to make a clear separation between actors responsible for the environmental harm of climate change on the one hand, and on the other, those actors who could do more to respond to the current and future effects of such harm.

As this paper is concerned with environmental harms, the main emphasis here when considering responsibility is on the institutions and actors responsible for anthropogenic climate change. As the actors with the greatest responsibility for this climatic environmental harm are at such a remove from the small places (such as Fairbourne) where the costs are borne, it is easy to lose sight of their culpability. Therefore, there is perhaps a greater need for emphasis, analytical and otherwise, to be placed here. Indeed, much of the published discourse on Fairbourne, in the press and the grey literature (see, FMF Partnership, 2019) fixes responsibility either on the community itself and its

individual inhabitants or on the local and national government institutions who could do more in response to the environmental harms experienced and to be experienced. The community and its individuals have been told by the local authority and the Welsh Government that they do not have any responsibility towards averting their plight and that the community and its members must, in effect, take responsibility for themselves (Welsh Government, 2019). The community and/or the individual inhabitants are expected to take responsibility for their situation and adapt in the face of the loss of their homes and their village. This reflects an increasing expectation by states and corporate actors that communities will have to mobilise, developing their own resilience and response to the accelerating crisis. This is evident from the discourse surrounding the effects of climate change on coastal areas. As stated by JRF (2011, p. 15):

There is an ever-increasing onus on communities to help themselves to be more resilient, but the way climate change is communicated (e.g. as a future risk), and the lack of clarity on actions needed, may be leading to apathy from local communities.

On the other hand, individual residents of Fairbourne have expressed anger and levelled criticism at national and local government institutions for a perceived lack of action. The implication being that these institutions should take greater responsibility for Fairbourne's predicament – securing the defences and/or compensating losses. It is interesting that in this case, little emphasis seems to be directed towards the actors responsible for climate change as an environmental harm. Moreover, there is little legal recourse for victims such as those in Fairbourne, to seek justice, to apportion blame, to gain effective compensation or at least recognition of the injustice of their victimhood.

Conclusion

Decommissioning Fairbourne will not displace a significant population and the consequences of relocating the community is unlikely to have an earth-shattering effect on this small part of Wales. However, it represents a stark vision of the future for many coastal communities across the UK and beyond. It provides a symbolic case study for the implications of the current climate crisis. It is also a case which vindicates the value of using an environmental harms approach within Criminology. The situation in Fairbourne reinforces the truism that the climate crisis, although a global issue, will be experienced locally and it will be at this level that communities will suffer and have to respond. In addition, many coastal communities will already be facing significant socio-economic challenges that require immediate attention, and the very real risks posed by climate change, therefore, might remain ignored. As previously discussed, these communities may already be vulnerable to significant challenges, including youth outmigration and inward migration of older people, aging populations and a high proportion of retirees and people receiving benefits. The harms discussed will powerfully affect residents at an individual level, the loss of security associated with increased risk of catastrophic flooding is already and will continue to erode their well-being. Indeed, even where communities are fully aware of the extent of the threat posed by climate change and are determined to take action to mitigate or adapt, it may well be, as in the case of Fairbourne, that the actions necessary are beyond the technical and/or financial capacity of these communities. In situations such as these, it is no doubt unhelpful for community members to be reminded of community and individual responsibility. Little to no space or recourse is made anywhere for the victims of environmental harms to apportion blame and responsibility with the actors responsible for said environmental harms. Whilst adaptation (with assistance) will no doubt be key for victims, an emphasis on victimised communities' and individuals' responsibility for their predicament seems unjust. An environmental harms approach perhaps offers an alternate or at least complementary path to policymakers and victims of environmental harm.

The residents of Fairbourne are environmental victims. Climate change is subjecting them to environmental harm, which is significantly impacting their health, well-being, economic stability and,

consequently, the viability of the community in which they reside. As argued by White (2018), human victims of environmental harm are not considered victims of crime. However, the negative effects of human-induced climate change on the residents of Fairbourne cannot be denied. Although its causes are complex, large and seemingly distant, they are not blameless. Indeed, many of the polluting actions that have led to this current situation are legal and often state supported and even promoted. As argued by Hillyard and Tombs (2007), crime excludes many serious harms, and the notion of crime itself distracts from more impactful harms, such as climate change. It is a clear strength of the environmental harms approach that the severe, destructive consequences of human action manifest in climate change consequences, so clear in the case of Fairbourne, can be given full attention within criminological discourse. The products of such an approach may also, in some small way, inform the decision-making of legislators and key actors. A narrower legal approach would miss the wood for the trees.

There are serious questions about who should be responsible for communities such as Fairbourne. From an environmental harms perspective, although the lack of a serious response (from local and national government institutions) is of significant consequence for the victims, the main weight of responsibility is placed on those responsible for the environmental harm in question (i.e. climate change). The bulk of the discourse addressing responsibility in the case of Fairbourne has, to date, focused on either the need for individual or community responsibility from Fairbourne's residents or the need for institutional and governmental responsibility from local authority and national governmental actors. This emphasis within the discourse pays far too little attention to the actors responsible for the environmental harm that is necessitating community, individual and governmental responses at the local and national level.

Fairbourne is not unique in its predicament. Many coastal communities who are already facing significant challenges are unlikely to be able to adequately prepare for their future. Preparing coastal communities should be a key policy priority and will require targeted support from central government with additional support for the local authorities in which these communities reside. Preparation for communities facing significant environmental harms should go beyond education and awareness raising. It must include technical, financial and psychological assistance to suit particular challenges faced. In addition to adaptive support, it would also be a major improvement from a justice perspective if there were legal mechanisms by which victims of environmental harm could seek damages, reparation and/or at least recognition. Thinking through the shape and texture of such mechanisms is beyond the scope of this paper and the expertise of this author. However, it is hoped that it turns the dial in some small way. It will not be enough to expect small communities to respond in isolation to the big challenges posed by environmental harms – or to shoulder the sole burden of responsibility.

As suggested by the councillor for the Fairbourne area; 'This is an unprecedented situation and there are many difficult questions that we will need to work together to answer' (Fairbourne: A Framework for the Future Community Consultation, 2019).

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