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Affected by and affecting forest fires in Sweden and Spain: A critical feminist analysis of vulnerability to fire

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Abstract

Usually, vulnerability is equated to weakness and resistance to strength. Drawing on a feminist critique of this conceptualisation, this article aims to discuss how vulnerability to forest fires and local action are mutually and contradictorily related. I analyse the ways in which people in two rural communities surrounded by tree monocultures in Sweden and Spain think, feel and act after being exposed to acute forest fires in 2018 and 2017, respectively. Attentively listening to the experiences of vulnerability during and after the fire in the two cases helps to explain vulnerability to forest fires as an emotional, care-related process that opens up contradictory and transformative interconnections between peoples, nature and the state. Also, looking at the two cases together, this article shows how vulnerability to fire is mediated through unequal expectations across Europe's North–South divide. By re-signifying the implications of vulnerability, disasters such as those analysed here can be seen as facilitators of radical transformations towards new rural futures in Europe's forests.

KEYWORDS
conflict, disaster, forest fire, tree plantations, vulnerability

INTRODUCTION

Reflecting across two rural geographies in Europe, this article discusses how vulnerability to forest fires and local action are mutually related and contradictory to one another. Critical analyses of vulnerability to forest fires are important and timely in the current context of climate change and as predictions of forest fires increase (Flanningan et al., 2006). They are also crucial since sustainability in forested areas exposed to fires is frequently discussed searching for scapegoats (e.g., heatwaves or arsonism) or relying on huge state investments in suppression technologies such as helicopters and water bombers (e.g., this costs more than €1.500 million per year in Spain). These managements of forest fires overshadow the historical and structural conditions that make landscapes increasingly flammable (see González-Hidalgo et al., 2014). This article aims to show how embracing vulnerability to fire in a critical and sensitive way—and not just seeking to erase it at any cost—can lead to politicised debates on sustainability, where we do not just see peoples exposed to forest fires as vulnerable or merely *affected*, but also as *affecting*, knowledgeable and active subjects in their rural contexts.

The article is based on conversations with members of rural communities in Kårböle (Sweden) and Gradín (Spain), who experienced acute forest fires in 2018 and 2017, respectively. In both cases, fires took place in landscapes dominated by single-species plantations: *Pinus abies* and *P. sylvestris* in the first case and *P. pinaster* and *Eucalyptus globulus* in the second case. The specific analysis of experiences of fires in what are in effect extractivist forests (Banoub et al., 2020) is highly relevant for discussing the multiple dimensions and challenges for sustainability in rural areas in the context of climate change. On the one hand, the land area devoted to tree plantations is increasing all around the world (Liu et al., 2018). In Europe, for example, one of the main land use changes over the last 200 years has been the expansion of forest areas, mainly driven by large-scale afforestation programmes in the form of tree plantations (Mather, 2001). In Sweden, 30%–40% of the northern forest has been converted into pine plantations[1] since 1950 while, at the same time, the image of the Nordic forestry model as a road map to sustainable forest management spread around the world (Westholm et al., 2015). On the other hand, there is evidence that shows that tree plantations are more subject to severe fire, compared to multi-aged and biodiverse forests (e.g., see Liu et al., 2018; Odion et al., 2014). These two aspects highlight the need for critical analyses of the challenges and opportunities for sustainability for communities living in rural areas amidst tree monocultures and who are made and feel vulnerable by forestry plans based on tree plantations.

Generally speaking, vulnerability to environmental hazards is understood as a potential for loss (Cutter et al., 2003) or as 'a loss of power in the creation of one's own future' (O'Riordan & Timmerman, 2001, p. 436). Nevertheless, a great deal of scholarship has contested this perspective, describing vulnerability to environmental change as related to political, institutional, economic and social contexts beyond its conceptualisation as a linear and uni-dimensional process (O'Brien et al., 2007; Oliver-Smith, 2004). Against conventional perspectives that assume that 'to be vulnerable is simply to be susceptible, exposed, at risk, in danger.... to be somehow weaker, defenceless and dependent, open to harm and injury' (Gilson, 2011, p. 309), critical feminist scholars have re-conceptualised vulnerability as associated with agency, reflexivity and resistance (Butler, 2016)

or, in the words of Tschakert and Tuana (2013, p. 86), as 'the ability to affect and to be affected'. Regarding the sustainability of forested areas prone to fire, we still need to further implement this perspective so that forests' and peoples' vulnerability to fires can be seen not only as a source of pain but also of new, engaged and creative interconnections in the search for sustainable futures for these areas.

In this article, I engage with these critical feminist perspectives on vulnerability to explore the aforementioned dichotomy between being vulnerable *or* resistant to forest fires in the context of intensive forestry developments. I bring feminist accounts of vulnerability in relation to the present and future challenges of sustainability in European forests, which are increasingly exposed to transformation and disaster due to environmental and climate change. I draw on my interviews with two local communities surrounded by tree monocultures in rural Sweden and Spain, who experienced intense forest fires in 2018 and 2017, respectively. In doing so, I argue that vulnerability to forest fires is a multidimensional and complex process, emphasising how vulnerability to fire should be considered as a source of conflict and resistance when analysing environmental disasters, as well as an emotional, care-related process, which opens up contradictory interconnections between peoples, nature and the state. I argue that these aspects are key to further understand what is at stake in forest fires, and how critically embracing vulnerability offers possibilities for just and sustainable transformations in the context of environmental change in rural areas in Europe. My relational analysis across two rural geographies in Europe also opens up reflections about how being vulnerable to fire is unequally experienced, assumed or rejected across the North–South divide in Europe.

The article is structured as follows. The next section elaborates on the debates around vulnerability, resistance and critical agency in relation to forest fires. Following this, I describe the key characteristics of the two study sites and my methods, and the next section analyses how vulnerability and local action are mutually related and contradictory in these different rural environments. The final section concludes by discussing how engaging with people's lived experiences of vulnerability to fire should be further considered when discussing present and future scenarios of sustainability in rural Europe.

A FEMINIST PERSPECTIVE ON VULNERABILITY TO FOREST FIRES

Even if the concept has been scrutinised, discussed and debated in the last decades (see Dow, 1992; O'Brien et al., 2007; Oliver-Smith, 2004), vulnerability is still understood, both in our everyday usage, as well as in high-level environmental policy forums, as 'susceptibility to harm and the lack of capacity to cope' (see the IPCC, 2014, definition, Glossary, annex II, p. 1775). It is assumed that to be considered 'vulnerable', one needs to be sensitive, susceptible or affected by environmental change *and* unable to manage or overcome the situation. In fact, as Tschakert and Tuana (2013, p. 77) point out, labelling certain groups as vulnerable tends to be considered as risky since it can lead to stigmatisation and undercutting community agency. This perspective tends to consider vulnerability as passive, and far from its (active) antonym, resistance. As Butler (2016, p. 3) puts it:

> "The received definitions of vulnerability as passive (in need to active protection) and agency as active (based on disavowal of the human creature as 'affected') requires a thorough going critique".

Feminist scholars have argued that closed assumptions about the subjects exposed to vulnerability, or the conditions that produce (or not) it, can result in void or paternalistic descriptions of vulnerability, emptying the political debate about power inequalities (Arora-Jonsson, 2011). Feminist accounts of vulnerability have also facilitated the consideration of broader, relational and reciprocal understandings of the concept. That is, they consider that being vulnerable is not always negative since it implies the ontological condition of relationality and the ability to affect and be affected (Tschakert & Tuana, 2013). This feminist critique of the concept implies 'to overcome uncritically accepted versions of the mind/body distinction and its reliance on associations of activity with masculinity and passivity with femininity' (Butler, 2016, p. 3). This perspective helps us grasp the ways in which being vulnerable does not always diminish the capacity to cope, resist and transform the situation. But more importantly, this feminist critique contests the idea of a political subject as someone who establishes their agency by vanquishing its vulnerability, while it is precisely vulnerability that can be a potential tool for critical agency, activism or resistance.

The analysis of the experiences of communities exposed to forest fires also echoes this tendency, where vulnerability to fire tends to be reported as unconnected to social mobilisation and conflict. The concept of vulnerability to forest fires is usually defined as comprising three components: (1) *exposure*, defined as the likelihood of impacts from a given hazard event; (2) *sensitivity*, or the magnitude and range of potential impacts should a hazard event occur; and (3) *adaptive capacity*, or the local ability of human populations to act in ways that reduce their sensitivity or exposure (Paveglio et al., 2016; Preston et al., 2009). Yet, this definition suggests a limited conceptualisation of rural communities, where they are conceived as being heavily affected by forest fires, but void of agency, particular knowledges, interactions and struggles in these scenarios. This contrasts with the well-reported number of mobilisations and processes of resistance and activism led by local communities as a result of unequal power dynamics in forested areas, regarding land tenure, governance and distribution of environmental impacts (see Gerber, 2011). This gap highlights the need for social research on forest fires that considers both vulnerability and social conflict as part of such disasters.

In the literature on hazard and disaster studies, the explanatory factors of unequal experiences of vulnerability have been explored across class and political power, gender, ethnicity, social dependence and so forth (Collins, 2008; Cutter et al., 2003; Wisner, 1993; Wisner et al., 2004). Regarding forest fires, it has been shown how affluent communities are better off during emergencies (Collins, 2008) while Indigenous and racialised communities bear brutal consequences to their livelihoods (Bardsley & Wiseman, 2012; Davies et al., 2018). Research has also revealed how men's tasks during an emergency tend to be associated to those related to strength and braveness, and these tasks are valued as being more important; while women are assumed to be more prone to emotionality and are expected to be responsible for caring tasks during the emergency, usually labelled as "low profile" (see Eriksen, 2013). Political ecologists have also problematised taken-for-granted assumptions around vulnerability in the context of forest fires, conceptualising vulnerability as a material condition and social construct (see Eriksen & Simon, 2017), or as a process that can result in market opportunism and capital accumulation (Collins, 2008, 2010; Simon, 2014, p. 1200). I have discussed elsewhere how feelings of anger and sorrow associated with imposed forest developments and fire-prevention regimes can be both a source of suffering and political agency in the context of Indigenous territorial conflicts (González-Hidalgo & Zografos, 2017). This previous research advances a critical examination of the political implications that being vulnerable to fire implies for affected communities and on which this article seeks to expand. By deploying a 'relational analysis' (see below) across two geographies in rural Europe—looking for similarities, connections and contradictions within and among the two cases—this

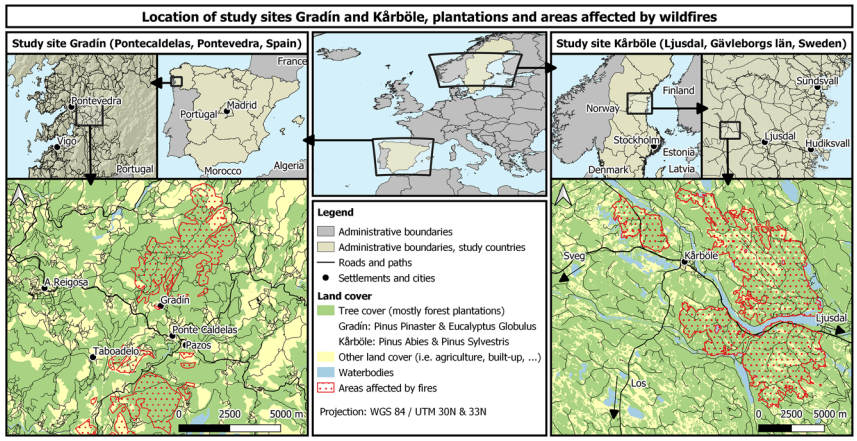

FIGURE 1 Location of study sites in Kårböle and Gradín. Data provided by Database of Global Administrative Areas (GADM), OpenStreetMap; Sweden: SLU Skogskarta, Copernicus Emergency Management Service. Spain: Mapa Forestal de España MFE50), Digitised burned area based on Normalised Burn Ratio for Sentinel-2 scene 22 October 2017. Map produced by: Rubén Ferrer Velasco, Thünen Institute of International Forestry and Forest Economics.

article shows that the experience of vulnerability to fire is simultaneously universal and particular and is also geographically mediated (see also Eriksen, 2022).

In the next sections, I analyse how local actors in two rural communities surrounded by forest monocultures in rural Europe feel, think and act during and after episodes of forest fires in 2017 and 2018 in Spain and Sweden, respectively. The particular characteristics of the two study sites cast light on the mutual relations and contradictions between local communities' feelings of being vulnerable and of being critical and active, as well as the role of their everyday engagements with the state in framing these feelings. This evidence helps to further disturb normative assumptions around sustainability and forestry in northern and southern Europe.

A RELATIONAL ANALYSIS OF TWO CASES OF VULNERABILITY TO FIRE

During the summer and autumn of 2019, I conducted research in two rural areas in Sweden and Spain. In Sweden, I spent 1 week in August 2019 in Kårböle, a 51 ha village in Ljusdal, Hälsingland, central Sweden, which was exposed to an acute forest fire in 2018. In Spain, during November 2019, I visited several places that were exposed to forest fire in 2017 in the autonomous community of Galicia, north-west Spain. For this article, I use the empirical evidence associated with my stay in Gradín, a 48.48 ha small village in Ponte Caldelas municipality, Pontevedra province (see Figure 1). My empirical material combines data from interviews, documentation and direct and participant observation as used in case study research methodology (Yin, 2008).

The rationale for the choice of these two cases is the following. Both areas are characterised by a historical trend towards forestry extraction (Banoub et al., 2020), which has promoted the expansion of plantations of *P. abies* and *P. sylvestris* in Kårböle and *P. pinaster* and *E. globulus* in Gradín. While people in the two locations were linked by the fact that both were affected by forest fires, they had divergent socio-ecological, cultural and political contexts and situated experiences (see

below). A priori beliefs would assume that people living in rural Sweden would be 'less' vulnerable to forest fires, given higher resources and a more efficient forestry model, in contrast to the recurrent experience of forest fires every summer in Spain. For example, my interviewees in rural Galicia assumed that local communities in Sweden would be better adapted to and prepared for forest fires, as they said: 'their forests are so tidy, so sensibly managed' and 'they are richer, they have better social and working conditions, and better [forest] machinery…find me a job there!'. These excerpts from my interviews exemplify the taken-for-granted normative conceptualisations of what vulnerability means, interwoven with developmentalist and colonial north–south discourses (Arora-Jonsson, 2009), where the north tends to be seen as more ordered, efficient and therefore 'less' vulnerable. However, these assumptions about the Swedish forestry model as efficient and sustainable forest management dissipated when I said to one interviewee in Galicia that some of my Swedish interviewees suggested the need for more firefighting equipment to address the growing problem of forest fires in Sweden. Convinced that the key strategy is to invest in fire prevention campaigns rather than firefighting, he told me: 'Tell the Swedes that that idea is like extinguishing fires using €500 bills. That is nonsense!'.

As exemplified here, taken-for-granted assumptions about being vulnerable and their contradictions are more evident when seeing two cases together, instead of analysing a unique case study. This motivates the choice for a 'relational analysis' of these two cases (see Arora-Jonsson, 2009): analysing the specific data of each case as important in its own but mainly looking for connections between the two places: looking for common, contested or contradictory ways in which the experience of being vulnerable to fire was described by my interviewees. As in the example above, connections among the cases came out naturally while talking to my interviewees, reversing the gaze among cases while I was sharing my experience in each context. Being a Spanish native, it is evident I feel closer to and understand the Spanish case better. However, in both cases, and in spite of language barriers, it was fundamental to leave time and space for us (interviewer and interviewee) to relate: sharing spontaneous anecdotes, feelings and silences while looking at a burned landscape, facilitated an atmosphere where the ambivalent emotions associated to the experience of the fires and their aftermath could be expressed.

Extractivist forests and fires in Hälsingland, 2018

During the summer of 2018, a large number of wildfires occurred throughout Sweden, as well as in Finland, Norway and Denmark. Several of the fires were started by lightning in storms, as well as by summer barbeques. An unusually long heatwave and drought, with temperatures more than 10°C above normal, facilitated the conditions of the fires. In Sweden, 25,000 ha of forests were burnt. According to the Swedish Civil Contingencies Agency, these forest fires were the most serious in the country in modern history: firefighters from multiple countries (Poland, Denmark, France and Finland) were involved in fighting the fires, and Norway and Germany helped with helicopters. Around 200 people were evacuated from their homes, but there were no human victims.

The largest area affected by the 2018 fire was located in Hälsingland, a historical/cultural province in central Sweden. Approximately 85% of the land area in the province is covered with spruce (*Picea abies*) and scots pine (*P. sylvestris*).[2] The timber industry has historically been the main source of income in this region, where extensive forests on the basis of individual ownership, and through a historical process of dismantling of the commons (Sandström et al., 2017), have made sawmilling and the manufacture of wood pulp and cellulose the leading industries.

In 2018, the Swedish forest industry produced 11.9 million tonnes of pulp; 10.1 million tonnes of paper; 18.3 million cubic metres of sawn timber, with a total export value (2018) of SKr145 billion (ca. €14 billion, making Sweden the world's third-largest exporter).[3] As in most parts of Sweden, in Hälsingland, local communities engage with forests beyond extraction and ownership structures thanks to the traditional 'allemansrätt', that is, the right to access public or privately owned land, for recreation, exercise and collection of berries and mushrooms.

During the fire, almost 200 people were evacuated. Kårböle, a small village in Ljusdal Kommun, Gävleborg County, was one of the villages that had to be evacuated. The Psychosocial Care Crisis group provided psychological support with crisis management. Everyone evacuated was contacted almost daily by staff from the municipality who asked how they were feeling—often quite badly—and what kind of help they needed (de Vylder, 2019). The majority of the burned forest around Ljusdal and Kårböle is owned by 140 private forest owners. De Vylder estimates the costs of the fire for these private forest owners to be between SKr70 and 80 million (ca. €7 and 8 million), although most of them had access to compensation from insurance. De Vylder also estimates that the total socioeconomic cost for Sweden associated with all the fires in 2018 was around SKr2–3 billion (ca. €300 million).

Extractivist forests and fires in Galicia, 2017

In 2017, a series of forest fires affected a large part of north and north-western Spain (the autonomous communities of Galicia, Asturias and Castile and León), and practically all of northern and central Portugal, burning more than 62.000 ha. Presumably started by arson in Galicia, the great drought and strong winds produced by hurricane Ophelia facilitated the intensity of the fires. In Spain, these fires resulted in 4 dead and 20 injured people and 42 fatalities and docens injured in Portugal. In Galicia, the economic impacts of these fires were estimated to be €155.89 million after considering direct costs as well as those associated with diverse ecosystem services (Loureiro & Alló, 2018).

Galicia is a region of Spain located in the north-west of the Iberian Peninsula, where forests cover 61% of the territory. Only 3% of this forest area is public, and the remaining 97% is privately owned, both individually (two-thirds) or collectively, that is, communally managed forests (one-third). The average area of the individual private landholdings is around 1.5–2 ha, distributed in numerous plots (Balboa-López et al., 2013). Many of these small holdings (*minifundios*), formerly devoted to subsistence agriculture, are currently abandoned but are home to the fast-growing *Eucalyptus* or *Acacia* spp., species that are flammable and fire resilient, and therefore take advantage of fire for their expansion (Catry et al., 2013). Communal forests constitute a singular type of collective land tenure existing in Galicia for centuries, with a long history of conflict and struggles between peasants and the Spanish state (see Seijo, 2005). Since Franco's dictatorship (1939–1977), most of these communal lands, as well as individual plots, are planted with *P. pinaster* and *Eucalyptus* spp. (Vadell et al., 2016); this transformation was seen by the regime as a path towards the modernisation of a peasant territory like Galicia. Today, residents of the parish collectively own the rights of use and management of the communal forest according to a democratic governance system organised in a general assembly of neighbours. Many residents have had agreements with big forestry enterprises such as ENCE and NORFOR for 25–50 years, where local communities receive around 50% of the benefits after harvest. Tree plantations feed the forest economy in Galicia, which in 2017, produced 8.5 million cubic metres of raw pre-processed wood.

Galicia is one of the areas most prone to forest fires in Europe: constituting only 6% of the Spanish territory, 24% of the Spanish wildfires take place in Galicia (Ministerio de Agricultura, Pesca y Alimentación, 2019; period 2006–2015). Therefore, while the 2017 fires had an incredible impact, rural people in Galicia are well used to the experience of annual forest fires. Arsonism is considered the main reason why these fires begin; and in some cases, they are associated with historical conflicts between rural peasantries and the state (Seijo, 2005; Cabana, 2007), as well as local land conflicts, or speculative interests in the land. As a reaction to this constant exposure to forest fires, and the lack of response by local, regional and national authorities, some local communities are recently developing initiatives to protect their houses and communitarian lands, by up-rooting eucalyptus, diversificating forest species, re-claiming common forest property and re-populating rural areas (Cidrás & González-Hidalgo, 2022).

Methods

In Kårböle, I conducted six interviews with people affected by the fire. Except for one interview that was done only with one person, the rest were done in a family context, with a minimum of two people together (resulting in a total of 13 adults interviewed, seven women and six men). Interviews were done in English,[4] and interviewees helped each other to express themselves. Curiously enough, in all my interviews, the ones who could express themselves better in English were women. In the three interviews I had with married (heterosexual) couples, in all of them, the men had official tasks regarding the forest fire (voluntary firefighters) or held a position of responsibility in the local authority. Their female partners took spontaneous roles during the fires in facilitating emergency tasks, like sharing information about the status of the fire on a Facebook group or helping collect food and beverages to support the task of the firefighters. One of these interviews (which took place with a whole family of four adults and three children) also consisted of a walking interview, where I sought the family's impressions while walking around the burned areas. During my fieldwork, I also attended a public event held in Kårböle, to commemorate the first anniversary of the extinction of the fires.[5] Before this ceremony, in 2019, the King of Sweden visited the area. Other events, more informal and locally organised such as parties, dinners and a concert for around 6000 people, and the visit of the Prime Minister, took place in 2018. My interviewees are part of the local team that organised those events—being forest owners, local firefighters and permanent and summer residents. All of them were present during the forest fire and had to be evacuated from their homes. Although two of them reported economic losses due to forest fires impacting their properties, none of them experienced severe economic consequences. Interviewees were selected through snowball sampling, with the help of a key informant, who I also interviewed.

In Gradín, I also conducted six interviews with people affected by the fire. All except one of the interviews (which I did with a couple) were done individually (resulting in a total of seven people interviewed, four women and three men). All of them are permanent residents in the area and were present during the fire; none of them reported severe economic consequences due to the fire. In some cases, after my questions in Spanish, interviewees answered in Galician, the local language, which I could understand although not speak; other respondents felt more comfortable answering in Spanish. Most of these interviews also included walking interviews in the area, both in the burned area, as well as around key biodiversity and cultural sites such as pre-Romanic hillforts. Several of my interviewees were part of a local association organised after the forest fires, named *A Rente do Chan* (Close to the Ground, in Galician), which aims to disseminate alternative

ways of engaging with forestry politics in Galicia. Right after the fire, and following scientific guidance, *A Rente do Chan* conducted activities such as mulching and acorn seeding in order to prevent the erosion of the land and facilitate the future ecological restoration of the burned area (see Prats et al., 2022). During my stay, two years after the fire, one of the main activities of *A Rente do Chan* was the organisation of collective working days in order to eradicate eucalyptus, mainly in individual plots around the village, after signing land stewardship agreements (*custodia del territorio* in Spanish) with the owners, to make sure their actions continue in the future. The aim of these actions is not only to avoid the expansion of eucalyptus and eradicating it as much as possible in rural areas in Galicia but also to increase biodiversity, prevent forest fires and build fire-safe rural areas. I participated with *A Rente do Chan* in one collective action uprooting eucalyptus around one house that was close to being burnt during the fire. I was also allowed to be present and take notes at one of their assemblies (nine participants).

Even if it was the first time I visited the two sites of study, and in spite of language barriers, I felt welcomed, and my research benefited from the local networks created during and after the fire: Interviewees would walk with me so that I could meet and interview a neighbour who they thought would like to share with me their experiences. All my interviewees agreed to being recorded during the semi-structured interviews. Pseudonyms have been used in the text to protect their identity. After transcribing my interviews and fieldnotes, I coded the material using (a) a priori themes such as perceptions of vulnerability during the emergency, roles and actions during and after the fire, local organisation and proposals for the future and (b) emerging themes such as emotional impacts of the fire, the role of the state and local ecological knowledge associated to the forest and forest fire scenario (Bryman, 2016). After my visit, and with the COVID-19 pandemic in between, I shared a first draft of this article with two interviewees who could read English, which facilitated new shared conversations among us.

AFFECTING AND BEING AFFECTED BY FOREST FIRES IN RURAL SWEDEN AND SPAIN

Finding a voice through fire to reclaim the state in Kårböle

The Hälsingland forest fires shook up daily life in Kårböle, not only during some weeks in July 2018 but also in the months that followed. I arrived in Kårböle on 9 August 2019, when there was an official ceremony to commemorate the official extinction of the fires one year before. Around 300 people attended, including local and county authorities, local associations, voluntary firefighters and neighbours. For a village of around 100 inhabitants, this was considered 'a big party' (as described by one of my interviewees). The ceremony took part in Kårböle Skans, a defence facility used during the 17th century in the border struggles between Denmark and Norway. A memorial stone was inaugurated during the ceremony, with the inscription (in Swedish): 'In memory of the forest fires in Hälsingland in the summer of 2018 and those who fought them. Together we are strong'.

The official ceremony to celebrate the extinction of the forest fire may have helped to refresh locals' minds, hearts and bodies. Still, in my conversations in the days after the ceremony, the 2018 forest fire was still quite present in the memories of my interviewees one year later. Most of my interviewees described—frequently with tears—the fire episode as frightening and traumatic, usually described as a 'nightmare':

> The village… you can't imagine how it looked. The military vehicles, the firemen, policemen, it was like a war zone here. It was like a movie, unreal for me. (Astrid)

The emotional impact of the fire episode was also evident when several interviewees explained their sensitivity towards the possibility of a forest fire as compared to previous years. As the chief of the local voluntary firefighters told me, in 2019, 1 year after the fire, there were several calls to 112 (emergency phone) in Kårböle, all of which were false alarms. Olivia explained:

> (…) Last night I could not sleep. I was looking at the sky, and it had the same colour as when there was a fire. So, I went to see…I was so scared and thought 'oh no, no, not again' … but it was not! Now, every time there is thunder I always look out to see if there is a fire or smoke out there.

Some interviewees associated their feelings of vulnerability to a lack of support from local and national authorities due to the late arrival of firefighting equipment to the area or the lack of contingency plans for forest fires (de Vylder, 2019). In the words of Oscar:

> When the Polish and French firefighters arrived, it had been a little over a week. A rich country like Sweden must be able to afford better readiness to quickly deploy its own resources.

These critiques of the management of the fire were at some point silenced as I learnt when interviewing a couple in whose backyard a firefighting contingent was established due to its proximity to the fire:

> We had an extreme hot summer, very dry, we were very very worried, we all expected a fire, and all of MSB [Swedish Civil Contingencies Agency, for Myndigheten för samhällsskydd och beredskap in Swedish] must have been on holidays. There was such a lack of support, of preparation… during the first week it was all chaos, we were taking care of all this here [he cries, silence]… when I start talking about this, my wife begins to kick me under the table because I get increasingly angry remembering all the shortcomings of the authorities. (Lars)

In fact, some of my interviewees also made strong affirmations of support and trust towards the state, as well as articulating feelings of invulnerability. As Adam told me:

> We were never afraid, not even when we were evacuated. After one week, the state of Sweden had controlled the fire. Sweden won this battle.… in Sweden we are used to the state taking care of us!

But, these 'winning the battle' feelings are not uniform. As some others described:

> It was the weather that both lit and extinguished the fires. The violent rains put an end to the spread of fires.….I feel a bit of irritation when I see our responsible authorities hit their chest and say: We managed the crisis. (de Vylder, 2019, Capitel 5, own translation)

For many, these ambivalent feelings around the extinction of the fire were associated with a lesson from a small village in rural Sweden to the rest of the country, as an opportunity to raise the voice of rural villages and be more visible, beyond the prominence of urban areas. As the chairman of the village said to me: 'The fire was good for Kårböle … Now Kårböle is on the map', or, as the facilitator of the official ceremony put it (in Swedish, own translation):

> Now more people know where Färila is located, where Kårböle is located …, this is a fantastic opportunity. Imagine how many thousands of people who have turned on the radio and TV every day and followed us on the Internet. And in various ways helped to support us mentally or with money or with stuff. It is clear that they are going to come here, it is clear that they will be here and oh… eh, and share the joy with us over our, our beautiful county… and you will see some of them will get a cottage here sooner or later, oh in this way, our hope is that Ljusdal is not going back as it used to be but to make things even better …

This 'making things better', when I asked my interviewees, is related towards increased services of rural development, such as a gas station (which the local community finally aimed to have in May 2020), a local shop or having better access to schools and medical facilities (the closest is now 40 km away). However, so far, no increased services in Kårböle have been provided by the authorities. It is also about raising Swedish investment in fire extinction equipment as one interviewee said:

> Finland had the same fires and did not need extra help from somewhere. Firefighting should be important for Sweden, it needs to be prepared for a very quick response, and get the airplanes. And help others, like Portugal, Spain, Greece. We can afford it, it is a matter of political will. (Lars)

In addition, several interviewees reflected upon the fact that 'the biggest learning was the labour given by and for the community' (such as organising food supplies during the work of extinguishing the fire as well as organising local events) and upon their privilege of having somewhere else to go when they were evacuated

> We all had the possibility of abandoning our houses, we had family or friends who could welcome us. And then I was thinking about the migrants, they are not here in Kårböle, but I work with them. And I asked myself, 'What would those people do?, those that do not have a house, they do not have any family here'. I realised how privileged and lucky I am, to be able to go with a caravan full of our stuff, to our house close to the mountain or where our family is. (Wilma)

However, few ideas about pursuing more structural change about local land use were raised. Only one interviewee shyly commented:

> I would like the forest owners to mix with birch trees because they do not burn like the other trees so easily. The birch trees are still there, and the other trees are gone. But I do not know if they would do it.… Pines, compared to birch trees… they fall easily in stormy weather. That's another reason to mix.… But pines are more profitable… (Alma)

This section has shown how the 2018 forest fires affected the daily life of Kårböle inhabitants, raising unexpected feelings of fear if seeing smoke, anger when talking about the emergency management or pride for the local community work during and after the fire. Yet, and as for other large-scale fires in Sweden (see Lidskog, 2018), a critical discussion around social and environmental vulnerability associated with a forestry model based on pine monocultures was missing (see Karlsson, 2021). This absence of critical discussion encouraged the idea that the Swedish forestry system was unquestionable and that more resources need to be added (for fire suppression) to it to make it perfect.

From helplessness towards grassroots activism in Gradín

I visited Gradín two years after the last big forest fire (2017), in November 2019. In contrast to Kårböle, interviewees sometimes had difficulties in giving details of one sole forest fire since the experiences of living with forest fires are life-long in the area. Interviewees remembered other big forest fires in Gradín in the last decades (in the 1980s, in 2006), but thought of the 2017 fire as the one that had the most impact. The yearly experience of forest fires is, for many living in rural Galicia, the 'bread of each summer'. Nevertheless, interviewees remembered, with particular terror, the forest fire of 2017:

> We had never before seen something like that, it was unstoppable. That fire was going to do what it wanted. (Soledad)

> It was hell. There was no way to stop it. (Marta)

But in their accounts, other anecdotes or memories of past fires entered into the narrative, as well as a sense of helplessness towards the future:

> I am usually a quite relaxed person, in my daily life I do not tend to see risks anywhere … and here I feel as if we live in the middle of a 'time bomb', and I am afraid that we will continue like this… the situation will be much worse year after year. (Cristina)

In Gradín, several rural inhabitants did not evacuate or abandon their houses since the lack of presence of firefighters made locals responsible, individually and collectively, to deal with the tasks of fire extinction:

> We stayed, it's for the best. Not only in order to defend [with hoses and branches as fire swatters] the house, the forest, and the village but also because going out is dangerous. One does not know where to go to be safe, where to head to. (Cristina)

Interviewees expressed feelings of anxiety and desperation during the emergency and also explained how those feelings remained long after the forest fire was extinguished:

> It is a downer to see everything burned and to see that it has been planted and burnt, and planted and burnt again and again. It is very demoralising. (Soledad)

> …to be exposed and being so afraid of the fire is for sure something that stays within us, and especially the children.… Some of the kids [in the school where she teaches] shared dramatic stories…that impact stays with them and with us. We all know we need to have a plan to escape if it happens. (Ana)

Being frequently exposed to forest fires brings into interviewees' narratives, accounts of strategies and local knowledge about how or where to protect themselves from the fire, or how to help to stop it:

> What saved us here was that the fire was coming downhill and we could protect ourselves there [pointing at a small terrace/valley]. (David)

Beyond the narratives of blaming individuals for the occurrence of forest fires (being that many fires in Galicia are considered to be deliberately caused), all the interviewees expressed their concerns about the structural and biophysical conditions that facilitate forest fires:

> Before, lands were cultivated with rye, potatoes… and all that was cultivated with corn. All as a result of very hard hand labour, there was no machinery; we all had four or five cows, the cattle ate the vegetation, and therefore there were less forest fires. Nowadays one cannot even walk across those lands… several are abandoned, and with eucalyptus… eucalyptus take all the water, and therefore forest fires develop more easily. (David)

While these analyses are not unique or homogeneous—some interviewees placed different emphases on the role of different productive or non-productive activities in managing forest landscapes. There is, like in the case of Kårböle, a tension between urban and rural areas:

> Life in the countryside is unfair, we have many more responsibilities including saving ourselves and others from the fires. We live in rural areas, but we do not want that, this means suffering! People in the city do not know what it is, they do not have to be clearing out eucalyptus trees or watch their house almost burnt down. (Ana)

In contrast to the situation in Kårböle, in my interviews in Gradín two years after the 2017 fire, the criticisms to the local, regional and national administrations were open, frequent, public and extensive. Criticisms varied, from the lack of support or late arrival of firefighting forces during the fire to the lack of initiative from the Xunta (county administration) to make firebreaks—gaps in the vegetation acting as barriers to slow or stop the progress of a fire—even when these were made mandatory by law. In addition, most interviewees combined their expressions of feeling vulnerable with some accounts of engaging with direct action. Some of the interviewees were engaged in activities such as the collective and manual uprooting of *Eucalyptus* spp. saplings: 'We organise ourselves because we believe there is another (forestry) system possible and because there is no adequate response from authorities' (Ana).

Self-organised 'anti-eucalyptus' working days consist of the collective uprooting of small eucalyptus sprouts, hacking away at eucalyptus stumps, peeling eucalyptus bark, planting local species such as *Quercus* spp. or *Castanea* spp., as well as exchanging scientific information about local species, discussions about current challenges of forests in rural areas and local particularities and meeting and networking with other people in order to assess the effectiveness of these actions.

Physically speaking, uprooting eucalyptus trees is demanding, especially for people who do not work in the fields on a daily basis. Removing the eucalyptus trees requires strength; often it takes more than two people to be able to remove some larger ones. 'Uprooters' do not see the physical demand of these activities as a negative thing, but rather they consider it to be a way of 'exercising, unloading the stress of the week and also the anger of seeing so many eucalyptus planted' (interview, Cidrás & González-Hidalgo, 2022). While the act of uprooting is a manifestation of (physical) strength or capability, participants readily acknowledge the limitations of their actions amidst an extensive expanse of monocultures:

> We do not achieve a lot, it's merely symbolic. (Soledad)

> The easiest and cheapest way is to eradicate eucalyptus and allow them to disappear so that the oaks can grow. But we still did not manage to close the circle, that is, the eucalyptus we grow now pay for the money for that transformation. .... It would be fantastic to count on cattle, a neighbour could come with horses, and goats... but nowadays we ourselves cannot do it, and we cannot have a plan for others if we ourselves do not want to do it. We cannot say, 'you, come here and do the very hard work of taking care of the forest with your cattle'. (Cristina)

The eco-political limitations of such efforts became more evident when there were conflicts with those who did not engage in the direct actions as occurred while we were uprooting eucalyptus in A Insúa, 4 km south-west of Ponte Caldelas, in the perimeter of a house that was burnt during the fire and whose inhabitants had to be evacuated. Since the property limits are not very clear, neighbours took issue with the activity and threatened to call *Seprona*, the forestry police. When we found out about this, *A Rente do Chan* stopped the work, and we started discussing why this was happening. In the following excerpt of the conversation, members of *A Rente do Chan* discuss, astonished, how some neighbours are reluctant to transform the forest cover, despite being vulnerable to forest fires:

> David, owner of the house who had been evacuated: These people were able to get back to this house and save the old lady because they remembered the way with their closed eyes; otherwise, they could not have accessed their house by car, with so much smoke, because they could see nothing at all!.
>
> Carmen, member of *A Rente do Chan*: And yet, they threaten to report us to the police!
>
> Felipe, member of *A Rente do Chan*: How .... How they do not have any aftereffects, any memory of that?
>
> Carmen: This house is totally surrounded by eucalyptus!
>
> David: I can understand that this happens because in the old days, if someone stepped onto my land, that was a big issue because one had potatoes and rye, which fed the family. They still have that in their minds, even if now, in practice, all that does not exist.

This subsection has shown how, as in the Swedish case, the forest fire in 2017 also dramatically affected the life of locals in Gradín, although they were more used to the experience of vulnerability to forest fires. Maybe precisely due to this further exposition to fear to the flames, anger towards the authorities and sadness for seeing a burned landscape facilitated a critical engagement of some locals to engage into direct action in order to address the structural causes of the fires, that is, the Galician forest system based in tree monocultures.

RELATIONAL MANIFESTATIONS OF VULNERABILITY AND RESISTANCE TO FOREST FIRES

In the previous sections, I have presented diverse ways in which two rural communities in Sweden and Spain feel, think, and act during and after forest fires in their particular socio-ecological, political, cultural and economic contexts. As in the case analysed by Eriksen and Simon (2017), the people I interviewed were not socially vulnerable as they may be in other sites where climate disasters have unbearable consequences—they and their families managed to be safe during the emergency, they had access to public health, possibilities of economic compensation or even, for some, a second home to which they could evacuate. Nevertheless, interviewees were exposed, sensitive and with a certain adaptative capacity to confront the fires—as fits the common definition of fire vulnerability (Paveglio et al., 2016; Preston et al., 2009). However, in my conversations in Kårböle and Gradín, I always found at least a seed of critical action and engagement associated with being vulnerable, contradicting conceptualisations of vulnerability as passivity, incapacity or weakness (Butler, 2016). In Spain, the feeling of being abandoned in vulnerability gave *A Rente do Chan* space to bring up the local ecological history of rural areas and communal lands and engage with direct action to undo tree monocultures. In Sweden, an engaged group of residents organised to draw attention to the role of rural areas in managing disasters.

A relational analysis of how these two rural communities in Sweden and Spain think, feel and act after being exposed to forest fires shows that considering vulnerability as 'being affected and affecting' (Tschakert & Tuana, 2013) enables the consideration of several aspects that tend to be under-considered in normative definitions of vulnerability to forest fires. My interviewees' experiences show how vulnerability to forest fires (a) involves conflict, resistance or transformation, and is (b) an emotional process, (c) which opens up relations of care and (d) implies interconnectedness between people and nature. I argue that these four aspects need to be (further) considered when analysing forest fire vulnerability as a multidimensional and complex process since they let us grasp the creative production of political subjectivities in the context of environmental disasters.

(a) Vulnerability to fire as resistance, conflict or transformation: My interviewees in Kårböle and Gradín showed different ways of engaging with the critical agency after the forest fires: discussing openly (as in Gradín) or sometimes more privately (as in Kårböle) critiques of urban–rural inequalities, forest governance and management and rural politics—in the case of Kårböle, in order to get more attention from residents of urban areas and the state; in the case of Gradín, to generate local activism.

In both study sites, my interviewees suffered from being exposed to forest fire *and* also organised themselves during and after the forest fire. In absolute terms, my interviewees in Kårböle were better off, being less exposed to recurring forest fires and receiving more national attention after the fire. Yet, their trust in the state did not facilitate the discussion

of structural transformations regarding forest governance beyond the capture of better infrastructures for rural areas such as Kårböle. Their aim was to be 'on the map', so that their rural collective strength in stopping the fire was acknowledged by urban elites. However, one may ask for how long they may be 'on the map', in the context of the predicted increase in environmental disasters. Radical proposals such as the transformation of the land cover beyond tree monocultures were only bashfully discussed (as by Alma) and expressions of conflict with the state presumably silenced (as expressed by Lars). In Gradín, interviewees were more clearly and actively engaged with grassroots activism after the fire (like *A Rente do Chan*) to transform the land cover, after being repeatedly exposed to forest fires in the last decades. Their acknowledgement of their situated vulnerability was in fact a source for taking action. However, they still know that this task is an enormous challenge, as they are faced with the need to scale up structural and territorial transformations beyond tree monocultures and towards a sustainable future for rural areas.

Neither in Sweden nor in Spain did locals remain passive after the forest fires: They were affected while also trying to influence power dynamics even if only temporarily. This does not necessarily imply a radical (sustainable) transformation nor a future path void of vulnerability. However, this perspective of forest fire vulnerability contradicts usual conceptualisations of vulnerability understood as passive, weak or defenceless (Gilson, 2011), instead showing how it is precisely vulnerability that can be a potential tool for critical agency, activism or resistance (Butler, 2016).

(b) Vulnerability to fire is also emotional: The empirical material presented shows how forest fires implied intense feelings of fear, anger and desolation for rural communities experiencing them during and after the fires (as stated by Olivia in Kårböle and Cristina in Gradín). In some cases, rural communities required assistance from psychologists (as in the Swedish case) and triggered post-traumatic syndromes for some each time they see smoke. While this is already discussed in the environmental psychology literature (e.g., see Shavit et al., 2013), there is still low engagement with psycho-social health issues in forest fire research. When it comes to the dynamics of uncertainty to risk, the current approach of 'managing' vulnerability underrepresents and thereby downplays the role of emotions and experience (Sword-Daniels et al., 2018). Being emotionally touched by forest fires has non-universal implications. To some people, feeling vulnerable may generate anxiety, to others, it may be enabling and empowering (Lindell & Perry, 2008). In other to further engage with this aspect of vulnerability in research, politics and policy-making, people affected by forest fires need proper spaces for engaging and discussing the ambivalent role of emotions in environmental conflicts and disasters (González-Hidalgo, 2021). Counting with these spaces would help to better understand, debate and act upon the transformative power of the unequal experiences of vulnerability to fire while examining what sustainability and psycho-social health mean in the context of tree-planted rural areas.

(c) Vulnerability to fire opens up relations of care: In both Sweden and Spain, being aware of one's own and others' vulnerability generated local action by communities. In both sites, locals organised help in the moment of emergency; in both cases led by women, such as collecting food and communicating with all the neighbours (as in the case of Sweden, see de Vylder, 2019), or in the everyday rural tasks that help preventing future forest fires (as in Proyecto Batefogo, 2019). In doing so, women in Kårböle and Gradín ended up being responsible for managing key but unrecognised tasks—in comparison to usually masculinist images of fire-fighting (see Eriksen, 2013). Forest fires brought to light these underlying relations of care (Arora-Jonsson et al., 2021). This was not only in the form of the

community-based efforts to collectively survive the forest fire and the future ('*together* we are strong' as the commemorative stone in Kårböle reads) but also between locals and the state and state agencies. In Kårböle, people reclaimed the state as a figure of a care provider (in the form of emergency preparedness and fire-firefighting equipment), while in Gradín, people mistrusted the state and regional authorities due to historical disappointment and abandonment.

Being vulnerable and needing to be helped by others (international firefighters) instead of the Swedish state being the one who helps countries in southern Europe was mentioned as being uncomfortable for some interviewees (e.g., see the interview excerpts of Lars and Adam in Kårböle). However, as the landmark in Kårböle now reads, it is only thanks to those who helped to fight the fire that they can now celebrate their strength ('together we are *strong*') while being vulnerable. Meanwhile, most of my interviewees in Spain assumed that Swedish forests' and rural inhabitants would be more efficiently prepared or even free of vulnerability to fire, probably depreciating their own accumulated knowledge of year after year of exposure to forest fires. While vulnerability to fire might be measurable and different in both cases, what this shows is that vulnerability to fire is also *experienced* on the spot through unequal north–south assumptions and expectations.

Also, as my interviews have shown, even across differences between case studies, the state as a 'caring institution' is perceived as absent in territories exposed to forest fires. This indicates how vulnerability is a cultural, collective and more-than-an-individual feeling and also how experiences of vulnerability are entangled with particular everyday relations with the state. In the context of a disaster, state agencies and authorities are not only key, one-time caring institutions that manage a particular emergency: They are also cultural constructs that frame the ways in which rural inhabitants engage, every day, with forest governance and where imaginaries of how vulnerability should or should not be managed are placed. How local communities think that the state and public authorities should manage, control or attempt to suppress vulnerability in their contexts frames the ways in which people emotionally experience and narrate their experiences of vulnerability to fire.

(d) Vulnerability to fire as interconnectedness between people and nature: My analysis shows how the experience of being vulnerable to forest fires made rural inhabitants use, recover or connect with their forested environment, their local ecological knowledge, their neighbours and even peoples from other territories (firefighters brigades coming from abroad in the first case, local communities affected all around the north-west of the Iberian Peninsula in the second case). Similar to how Lidskog (2018) discusses the case of extreme wildfires in Sweden in 2014, in both cases examined in this article, the forest fire and its social interpretation by the community strengthened the idea of a shared, community identity. Also, in both territories, forest fires were intense experiences that mobilised peoples' knowledge about the territory, providing key ideas from where and how to extinguish fires (specially in Galicia as stated by David and several members of *A Rente do Chan*) or key species that facilitate or inhibit fire expansion (this is key in *A Rente do Chan* rationale for action but was also shyly stated by Alma in Kårböle). That is, being vulnerable to forest fires may generate key and expert knowledge that can significantly contribute to discussions around sustainability among tree plantations. But this is not only about learning processes as the 'resilience to fire'[6] paradigm would claim. It is also, as Abbott and Porter (2013) argue, the lived experience of being interconnected and interdependent during an environmental hazard that may contribute to a radical rethinking of, in this case,

human–nature relations in rural areas. In order to value and grasp this knowledge, we need further research on local agency and forms of ecological knowledge mobilised by communities during forest fires. This would not just mean the social valuation of the everyday forms of environmental care and labour of rural residents (see Arora-Jonsson et al., 2021) but would also imply counting and relying on those lived experiences when defining prevention, extinction or communication campaigns regarding forest fires. Local stakeholders including firefighters, permanent and temporary rural residents, forest owners and local grassroots need to have spaces to reflect on, discuss and inform decisions about the forest landscape they live in so that forest governance does not rely only on the interests of the forest industry. But if these participatory processes for the democratisation of wildfire strategies (see Otero et al., 2018) are implemented in places where the interests of the forest industry have been hegemonic, discussing sustainability would inevitably require political negotiations and commitments to structural transformation.

Engaging with these four aspects when analysing the potential of vulnerability to forest fires in crafting political subjects points to the need to advance forest fire research and practice that goes beyond essentialised conceptualisations of vulnerability, which tend to deny vulnerability and conflict as a resource for enhancing fair and liveable lives. The two cases in rural Sweden and Spain have shown how political subjectivities arise and are troubled when locals acknowledge being affected, as well as through their attempts to affect—not only to cope with—and transform rural governance. This perspective of vulnerability politicises the debates on the sustainability of rural areas, where local communities exposed to forest fires should be considered active political subjects.

This understanding of vulnerability as associated with political transformation challenges the notion that vulnerability has to be avoided at any cost. In the current context of the (post-)COVID-19 pandemic, and in the face of the present and coming increased vulnerabilities, climate disasters and conflicts—even in those territories that have not experienced them so brutally *yet*—a wider perspective of vulnerability as a potential seed for bottom-up sustainability should inform local and national debates on/for rural areas. While, of course, human (and other-than-human) suffering associated with social and environmental inequalities should be prevented as much as possible, it may also be time to accept not only that 'we' were never invulnerable (see Eriksen, 2022) but that, increasingly, (a bigger) 'we' will be made vulnerable due to the predicted increase of environmental disasters.

CONCLUSION

My relational analysis of the ways in which people in two rural communities surrounded by tree monocultures in Sweden and Spain think, feel and act after being exposed to acute forest fires in 2018 and 2017 challenges the general assumptions that associate vulnerability to passivity and incapacity to cope. A feminist critical analysis of forest fire vulnerability in rural areas in Sweden and Spain highlights how vulnerability to forest fires simultaneously acts to trouble and activate people: bringing to light local communities' emotional impacts due to the fire, their informal practices of care during the emergency and their particular knowledges and disobedient interventions during and after forest fires seeking to make the most of the experience of vulnerability for the future of their place.

By looking for connections and contradictions within and among how two rural communities are affected and affect forest fires in rural Sweden and Spain, this article analyses vulnerability to fire across geographies. A relational analysis of the two cases shows taken-for-granted expectations and beliefs about forest sustainability and (un)vulnerability in northern and southern Europe. While listening to the experience of locals systematically exposed to fire in rural Galicia, the image of the Swedish forestry model as efficient and sustainable breaks apart since the experience of being vulnerable seeks to be erased out of the official picture. Similarly, while listening to locals exposed to fire in rural Sweden, the resistance and knowledge associated with recurrent experiences of vulnerability to fire in Spain emerge more clearly. This helps to connect experiences of vulnerability to fire across space, while also learning from their geographically mediated contractions and inequalities.

By re-signifying the implications of vulnerability, this article has shown how being vulnerable to forest fires may open up opportunities to discuss and debate what local communities think are the main challenges or ongoing issues for sustainability in rural areas amidst tree monocultures in the context of climate change. Attentively listening to the experiences of vulnerability—and resistance—of the peoples affected by forest fires like the ones reported here shows the blind spots of rural and forestry plans which seek to suppress vulnerability at any cost through the maximisation of wood production and high investments in fire-extinction technologies. Vulnerability (to fire) or how rural communities, public and private forest agencies and states relate to the fact that forests are inevitably vulnerable is therefore a key issue to be discussed regarding present and future scenarios of sustainability in rural Europe.

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ENDNOTES

[1] In this article, I refer to plantations as planted forests with single aged and mono-species for the aim of forest extraction. The term 'plantation' referring to 'Swedish forests' is contested in Sweden given the relevance of the forestry sector. However, as in other places of the world (see WRM, 2003), environmental organisations as well as representatives of Indigenous communities are pushing for a critical discussion around the forestry model also in Sweden.

[2] See http://self.gutenberg.org/articles/eng/H%C3%A4lsingland.

[3] See https://www.forestindustries.se/forest-industry/facts-and-figures/.

[4] I am thankful to Lisa Karlsson for her analysis of the coverage of Swedish media of Kårböle fire, which facilitated my knowledge of the case in spite of not knowing Swedish. My research in Kårböle has been complemented and contrasted with colleagues working at SLU, experts in rural dynamics in Sweden, and specifically in Hälsingland (see Arora-Jonsson, 2017a, 2017b; Sandström et al., 2017).

[5] I am thankful to Johanna Blidfors who transcripted my recording of the event.

[6] Resilience is a key term in fire ecology and in analysing the recovery of socio-ecological systems after the occurrence of a fire. The focus tends to be in ecological–biophysical dimensions of the recovery after a fire, highlighting the learning processes after them (see González-Hidalgo et al., 2014; Prats et al., 2022; Rodríguez-Carreras et al., 2020). Due to space limitations, in this article, I have not engaged into the debates around the flaws of the term or the discussions around the relationships between vulnerability, resilience and resistance (see Bracke in Butler, 2016; Bourbeau & Ryan, 2018).

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