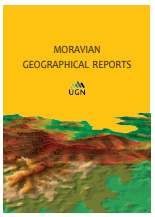

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Discordant agendas on a just transition in Romanian coal mining areas: The case of the Jiu Valley

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Abstract

Despite the promises that the just transition will bring more democracy and prosperity, there are legitimate fears that, in some regions, the pre-existing inequalities will be reinforced rather than rectified. Questioning how community resilience can be stimulated prior to and during coal mining closures, this paper focuses on Jiu Valley, a coal mining region in Romania. Using empirical and action research methodologies, this case study underlines the importance of considering the level of agency and different agendas of stakeholders regarding both the vision of their common future and the timeline for implementation. The article stresses shortcomings in implementing a just transition, including the issue of governance and mistrust towards local and national authorities, difficulties in orchestrating individual agendas to launch a collective action for the future of the region and, not least, poor information and delays of the mine closures. Concerning the hypotheses about awareness, preparedness and transition delays, this study pointed out some of the mechanisms that explain the scarce preparedness and why, both closure and transition, were repeatedly postponed. Furthermore, the research profiled the different actors and highlighted the challenges to address and roles of stakeholders to contribute to a just transition.

Keywords: *coal mining, community resilience, Jiu Valley, just transition, Romania*

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1. Introduction

The negative implications of the transition towards a green economy for communities living in coal basins range from harmful socio-economic repercussions (Snyder, 2018) to cultural consequences, such as loss of embedded local identity (Della Bosca and Gillespie, 2018). Hence the need for a "Just Transition" (Harrahill and Douglas, 2019) as a guarantee that environmental policies will not be detrimental to the social or economic well-being of those traditionally dependent on the fossil fuel sector (Robins et al., 2018). The aims of budget allocations and guidelines issued by the European Commission (Cameron et al., 2020) are not only to replace one economic model with another, but also to produce profound changes in societal practices, the ultimate goal being to steer the transition towards a predefined model of society (Kelemen, 2020), where the resilient community (Nicholls, 2012) is embracing the upcoming changes as opportunities for renewal and thriving (Campbell and Coenen, 2017).

The Just Transition Fund (JTF) is set to have a budget of € 17.5 billion, and allocations to Member States are made on the following basic criteria: a) the level of greenhouse gas emissions in regions with high carbon intensity; b) employability in carbon-intensive industries in those regions; c) employability in the coal and lignite extraction industry (Jourde and Widuto, 2021). Regarding climate and decarbonisation targets, governance is ensured through a combination of nationally and sub-nationally determined contributions under international monitoring and verification. The Paris Agreement explicitly stated, however, that the success of decarbonisation activities depends mainly on local factors, including some non-state actors (Bernstein and Hoffmann, 2018). In other words, no matter how good political discourse may sound, promising that no one will be left behind, the outcome of the just transition is not up to Brussels, but it will come down to the endogenous potential of each community (Harfst et al., 2020).

Community resilience is determined by local resources, relying heavily on the involvement of community members as active agents and their agency to initiate collective action (Magis, 2010). Beyond natural resources and material assets that are quantifiable and largely determine the potential

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for community resilience, however, two immaterial triggers contribute decisively to the mobilisation of the agency: a) sense of place, which begins with awareness, continues with attachment to place, and then with a use of this attachment (Schmitz, 2012); and b) social memory, serving as a reservoir of practices, knowledge, values and worldviews, which will ultimately strengthen the vital role of human agency in adaptation (Colten, 2019). Although it has been assigned a key role in the success of the just transition, resilience has rarely been predicted before a shock, stress, or disaster has occurred (Weichselgartner and Kelman, 2015). Therefore, designing appropriate tools to anticipate the degree of resilience of a community is crucial to scientific progress in this area of research (Brand and Jax, 2007). The need for a better understanding of adaptability is also heralded by the emergence of a line of research in the regional study literature that investigates why some regions can overcome shocks while others cannot (Campbell and Coenen, 2017).

Mining should be seen from the very beginning as a temporary activity – the exploitation ceases with the depletion of resources or when their use is no longer considered beneficial (Bowie and Fulcher, 2017). Therefore, the communities in these urban industrial regions are doomed to live in "boom-bust cycles" (Sewell, 2019), and always run the risk of shrinkage after mine closure. All over the world, mining companies have been the driving force behind creating new towns. Providing housing, infrastructure and services during their boom period, these cities fulfilled an important social function, forming new communities and landscapes with specific features (Marais et al., 2018). The mine closure and the separation of communities from their "mother" company is a disruptive event ("the shock"), often followed by a period of shrinkage. The shrinkage may be transient, and, sometimes, a new "boom" is possible (Stryjakiewicz and Jaroszewska, 2016), depending on territorial assets, constraints, and the degree of resilience manifested by the community in all stages of the transition. Shrinkage is a period of recoil and conservation, as well as preparation for a bounce back, as shrinking cities can take advantage of the context to renew, restructure and become even more attractive than before (Bănică et al., 2017).

Lessons learned from the experience of regions that have already made the transition from coal showed that the more quickly state or non-state actors anticipate, accept, and implement steps to cushion the transition shock, the better the results (Caldecott et al., 2017). Mining companies, however, as well as mining communities, sometimes have strategies to avoid or at least postpone the implementation of those measures designed to result in sustainable closures, and each day of postponement adds to the cost of the transition for the whole community and prolongs the downturn (Edwards et al., 2019).

This paper scrutinises how a coal mining region in Romania addresses international and national demand regarding energy production and orchestrates external guidelines, local and individual visions of the future. Focusing on the Jiu Valley coal basin, given that Romania is one of the largest beneficiaries of the budgetary allocations from the Just Transition Fund[1], this research project questions how community resilience can be stimulated prior to, during and after the mine closure, paying close attention to local actors' perceptions of the transition from coal and their level of agency. This case study emphasises the importance of considering the different agendas of stakeholders in terms of both their common visions and implementation timetables to better anticipate the potential community resilience better. After a theoretical background based on a literature review highlighting the key elements for enhancing resilience of a community facing mining closure, the paper introduces the Jiu Valley in its historical and geographical context. Afterwards, it explains the methodological aspects of the action research we conducted in the last two years and examines the perceptions, vision and level of agency shown by different actors. Finally, the discussion underlines the key points challenging a just transition in the Jiu Valley.

2. Theoretical background

The transition from coal is in full swing worldwide, with 36 governments and 28 global companies committed to eliminating coal-fired energy production by 2030 (European Commission and Directorate-General for Energy, 2019), but the approach differs significantly from one state to another, even within the European Union. Frantál et al. (2018) consider that these differences arouse legitimate interest in international comparisons, warning that the possibility of benchmark learning can be misleading given that the energy transition occurs in different economic, legal-procedural, socio-political, and cultural-historical contexts. All over the world, the coal transition poses serious challenges for mining communities, which are often totally dependent on this industry, and some are more vulnerable than others (Carley et al., 2018). Communities achieve different results in managing the energy transition because their local capital differs (Castle, 1998), thus influencing their adaptation capacity, a precondition for resilience (Norris et al., 2008). Having the capacity to adapt, however, does not automatically mean that the community is resilient. It requires awareness, sense of place, know-how and agency to set local capital in motion, aiming to achieve structural transformations meant to produce more equity, democracy and prosperity, the values that the just transition is supposed to entail.

In the earlier stages of the community resilience study, it was argued that resilience is a network of adaptive capabilities that, once put into the right dynamics, will allow a community to bounce back after a shock (Norris et al., 2008). Subsequently, a clear distinction was made between resilience as an outcome and resilience as a process (Van Breda, 2018), while within the context of disaster studies, the construct of resilience is generally understood as a trait (Cox and Perry, 2011; Prayag et al., 2021). When defining community resilience, scientists from different fields agree that it is the ability of a group/system/organisation to withstand severe conditions, absorb shocks, and thrive in the face of change (Lindberg and Swearingen, 2020; Weichselgartner and Kelman, 2015). From the need for a better response in emergencies, a broad, transdisciplinary term was born, containing several stages of action when a potential hazard occurs: a) planning for the impact; b) resisting and absorbing the shock; and c) recovering, as stressed by Koliou et al. (2020). When we talk about communities in mono-industrial areas that are transitioning to another economic model, however, it is appropriate to import from the ecological literature one more stage of resilience, that is d) renewal (Berkes and Ross, 2013).

[1] See: https://www.europarl.europa.eu/thinktank/infographics/JTF/index.html

The renewal capacity of a community is shaped by the duration and performance of the recovery (Bevington et al., 2012). Ideally, the measures taken at this stage will generate a bounce forward (Bănică et al., 2017), that will make the shrinkage transient and will set premises for the region to relaunch (Stryjakiewicz and Jaroszewska, 2016). On the same note, research over the last decade delivers a tripartite vision of what community resilience aims for: a) to reduce the impact of a shock; b) to reduce the recovery time; and c) to reduce future vulnerabilities (Koliou et al., 2020).

According to Magis (2010), the key element in achieving community resilience is adaptive capacity, but this is not enough without the agency to act. Wilson (2013) insists on the right timing in implementing measures. In summary, the *sine qua non-conditions* for a community to obtain and strengthen its resilience are:

1. the capacity to adapt;
2. the agency to act; and
3. to act on time.

Ways to build community resilience have been increasingly explored in the study of risk management, also emphasising the adaptive capacity that requires access to relevant and timely information (Liu and Agusdinata, 2021). The role of risk management in building community resilience is to ensure sufficient resources (Pasteur, 2011) and to increase awareness and preparedness by creating an early warning system that will monitor local resources and stimulate endogenous potential (Harfst et al., 2020). To ensure sufficient resources, it becomes essential to strengthen community organisations and facilitate local people's access to skills and technologies designed for monitoring and evaluation. However, they can only prove effective if they are customised to suit local culture and translated into local forms of communication (Uddin et al., 2020).

Communication is, therefore, a central component of most models of community resilience, because adaptability can be increased or decreased by the strength of media narratives, the existing media infrastructure, the accessibility to reliable, independent sources, and the skills and responsibility of the actors dominating the public agenda (Houston et al., 2015). Resilience is closely associated with good two-way communication, facilitating both the transmission of public interest messages from the authorities to the population, and information about the community's needs to leadership (Nicholls, 2012). Collective action is another defining feature of social resilience. It relies on building a collaborative relationship between stakeholders, allowing them to co-produce frameworks that will ultimately influence change to provide equity (Luke and Evensen, 2021). To achieve collective actions a strong social capital based on trust between actors is crucial (Bauwens, 2017; Greenberg, 2014).

In managing the closure of coal mines, these data provide benchmarks for phasing the transition, if synchronised with the stages of community resilience. To achieve a successful transition, pre- and post-mine closure measures must follow a specific timetable designed to stimulate the community's adaptive, recovery, and renewal capacity throughout the process. Moreover, measuring resilience would allow decision makers to intervene at the right time with the right tools when the community is going through distress. Jordan and Javernick-Will (2012) observed that disaster relief organisations are the ones that have developed tools and methodologies for measuring community resilience over time, but these were often checklist tools to track resources, vulnerabilities, and capacities necessary in disaster response and recovery. Lindberg and Swearingen (2020) noted two directions of investigation as paramount: a) identifying the factors that will facilitate thriving; and b) assessing the degree of resilience in different locations at different times (Lindberg and Swearingen, 2020). This is what McCrea et al. (2019) have done when measuring the impact of the industrial transition on the well-being and resilience of a community by modeling quantitative data (McCrea et al., 2019). According to Cretney and Bond (2014), community well-being and resilience can both be measured objectively and subjectively. Edwards et al. (2019) addressed the issue of mining communities stating that measuring resilience should start by determining the current degree of dependence on mining, from the household level to the local business level. Morelli et al. (2021) have a similar point of view, stating that the most appropriate tool for detecting co-dependencies would be the mapping of local actors to understand the network of stakeholders and the nature of relationships within the network in each context.

The need for political-administrative institutions to evaluate and allocate resources may justify the ambition to quantify resilience. Nevertheless, this may lead to a decontextualisation and further, to obtaining an erroneous picture of the communitarian ability to respond when a hazard occurs. Therefore, placing all indicators in the same index could prove futile because it would lose the contexts and subtleties of community dynamics (Weichselgartner and Kelman, 2015).

3. Regional context: The Jiu Valley – the lab of transitions

Jiu Valley is a carboniferous microregion located in southwestern Transylvania, Hunedoara County, Romania. With a total population of approximately 132,000 inhabitants, the region is currently facing uncertainty about what will happen after the closure of the last four coal mines. This research began in November 2020, when the post-mining development strategy of the Jiu Valley had been put up for public debate, aiming to scrutinise how a coal mining region in Romania addresses international and national demand regarding energy production, while orchestrating external guidelines, regional interests, and individual visions of the future. Relying on the conclusions of Brock et al. (2021), which have shown that people's perceptions of the potential risks and vulnerabilities in the just transition may be influenced by previous experiences, we considered it appropriate to restore an historical background of the Jiu Valley, thus facilitating an understanding of the local perspectives and the reading of our findings.

In the last forty years, this community has undergone structural changes generated by three intertwined transitions: from oil and gas to coal; from socialism to capitalism; and currently facing the total phase-out of coal, but in a framework that, at least in theory, should provide protection to the community, if not new development opportunities. All these transformational processes are of exogenous origin, with the differences that: the first brought economic and demographic growth to the region ("the boom"); the second caused social disruption ("the bust": the region has been in continuous shrinkage since the late 1990s when mine closures began); and the third has the potential to produce the bounce back and maybe a bounce

forward ("recovery" and "renewal"), if the local community manages to access the funding lines set out in the just transition framework for sustainable development projects. By local community we mean all local actors – authorities, former and current miners, other professional groups, non-governmental organisations, academics, media outlets, and virtually everyone who can be called a "stakeholder" in the just transition and should be part of the decision-making process.

3.1 The transition from oil and gas to coal: The boom

The Jiu Valley consists of six urban localities: Petroşani, Petrila, Lupeni, Lonea, Aninoasa and Uricani. The region is the gateway to Retezat National Park, surrounded by the Retezat and Parâng Mountains (2,500 m, highest peak) and crossed by the Jiu River (see Fig. 1). Coal has been mined in this depression for over 150 years, but the region's rapid growth, the "boom", was closely linked to the oil crisis in the late 1970s (Holloway, 2021), when Iran stopped delivering crude oil to Romania. The communist dictator Nicolae Ceauşescu then decided to turn the coal industry into the most important component of the energy industry, launching a national program aimed at accelerating coal production and reducing the amount of oil and natural gas in the energy mix from 50% in 1981 to 5% in 1990 (Dicu, 2015). As the centrally planned economy steered away from oil and gas – following the oil shocks – coal became the central element of energy production in socialist Romania. This created opportunities for the intensified exploitation of coal from the Jiu Valley. The national program had a mobilising slogan saying "more coal for the fatherland"(Ţoc and Alexandrescu, 2022), while underground work was glorified in epic performances by which communist propaganda carefully constructed the myth of "the hero miner", the one who sacrifices himself to preserve the country's energy independence (Horghidan-Anghel, 2019). The dictatorial ambitions allowed for the creation of even more jobs, increasing the area's attractiveness; thus, the total population of the Jiu Valley reached a record of 167,456 inhabitants (Davidoiu, 2017). Not least, as the importance of mining increased in the Romanian economy, as did the community's dependence on this industry, the Jiu Valley gained all the traits of a community living in a "boom-bust cycle" (Sewell, 2019), plagued by the danger of shrinkage after mine closure (He et al., 2017).

3.2 The transition from socialism to capitalism: The shrinkage

Strictly for the Jiu Valley region, the Romanian Revolution of 1989 was the disruptive event that put an end to growth. Shortly after the fall of communism, the myth of the "hero miner" collapsed as well when trade unionists put themselves in the service of the new regime, with miners repeatedly acting as repressive forces. The first decade of democracy in Romania was marked by several violent episodes, in which miners were at the forefront, especially during their repeated marches on Bucharest, *mineriade*[2] (Kideckel, 1996). They threatened Bucharest five times (January 1990, June 1990, September 1991, January 1999, and February 1999), their interventions resulting in the death of several people and the injury of more than 1,300, while hundreds of people were illegally detained and subjected to physical and mental abuse (Gledhill, 2005).

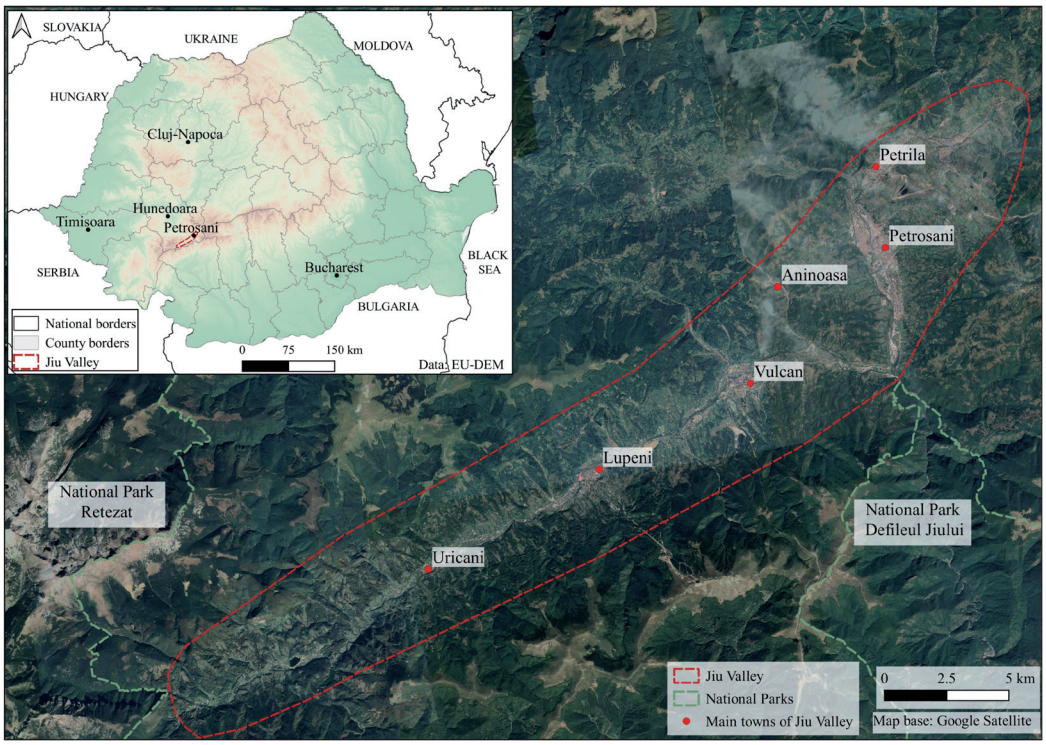

Fig. 1: location of the Jiu Valley in Romania
Source: authors' elaboration

[2] *Mineriade* is a Romanian term describing the marches of the miners from the Jiu Valley on Bucharest, where they interfered with Romanian political life by expressing their opposition to democratic and market reforms and their support for the neo-communist regime in the 1990s. The most violent "mineriadă" was the one on June 13–15, 1990, when thousands of miners suppressed a student demonstration and vandalised the headquarters of opposition parties. For his alleged involvement in those events, the President of Romania at that time, Ion Iliescu, is currently under criminal investigation.

Once the authoritarian political system was removed, it turned out that the "boom" of the Jiu Valley was unsustainable, and the coal industry was underperforming in a free market. Deindustrialisation led to a decrease in energy consumption (Deacu, 2016), and the price of imported coal was lower than the cost of domestic production; therefore, restructuring could not be avoided. Nevertheless, by partnering with the new neo-communist political power, the trade unionists managed to delay the restructuring, obtaining state subsidies to keep the mines operating for many more years. It was not until 1997 that mining restructuring began (Haney and Shkaratan, 2003) and, at that point, the overconnectivity of the economic sectors proved to be very detrimental for the region when transitioning to capitalism.

The closure of the coal mines in the Jiu Valley started in 1997 when a program of voluntary downsizing was launched[3]. Thousands of people have been persuaded to accept voluntary layoffs, offering them up to 22 compensatory salaries, depending on their seniority (Haney and Shkaratan, 2003). Since 1997, thirteen out of seventeen mines have ceased to operate, and the number of mining employees has fallen from 45,000 in the early 1990s to less than 4,000 in 2019 (see Fig. 2).

As the mines closed, other economic agents fell one after the other, as in the 'domino effect', and that was the beginning of an economic and social decline from which the community has not yet recovered. As shown in Figure 3, the closure of mining operations and the stigma brought by the violent actions of the miners have considerably reduced the attractiveness of the Jiu Valley as a place to live. According to data from the Romanian Institute for Statistics, the decrease in the region's attractiveness and an increase in emigration rates have led to a population contraction in Jiu Valley by approximately 35,000 people between 1992 and 2020.

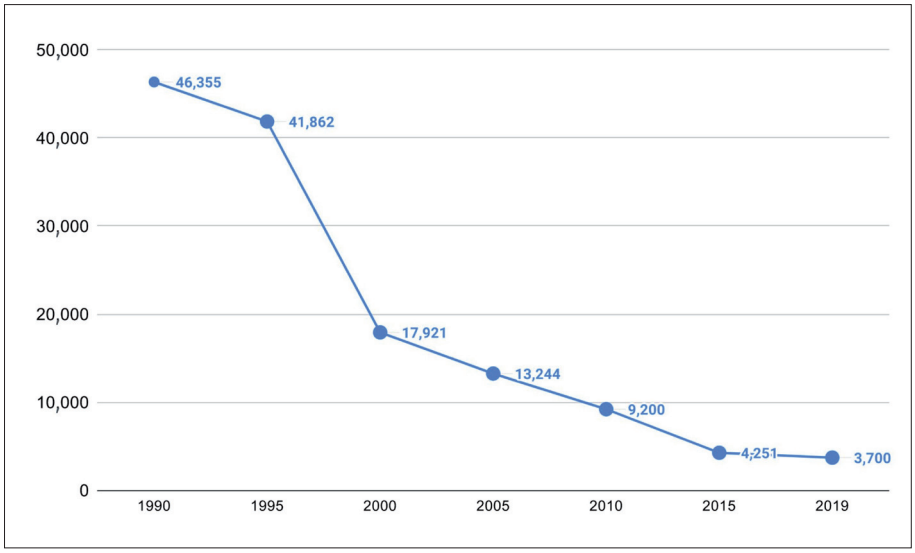

Fig. 2: Employment in the coal mining sector in Jiu Valley (1990–2019)
Source: Data: Romanian National Institute of Statistics, authors' elaboration

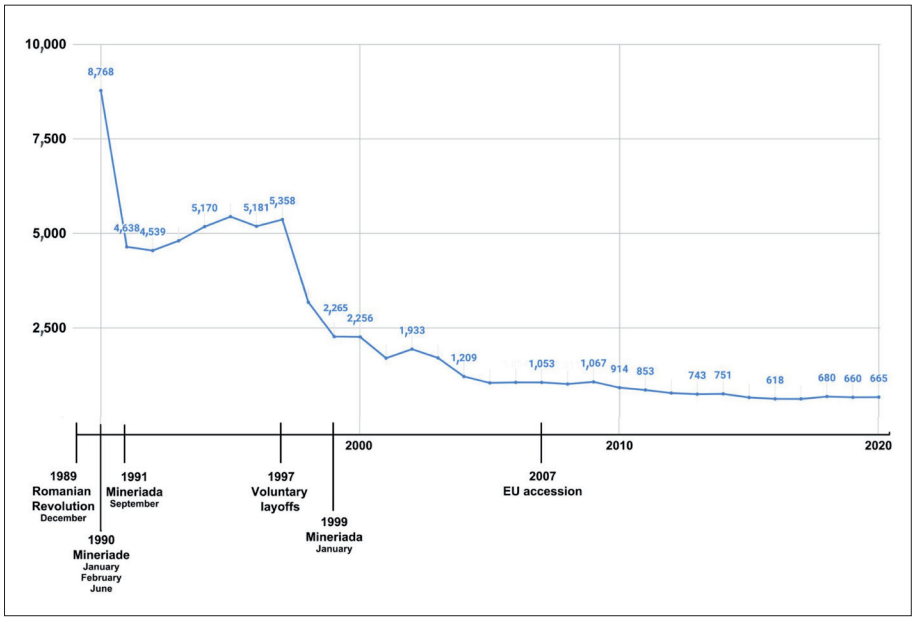

Fig. 3. Number of persons living in Jiu Valley from 1990 to 2020
Source: Data: Romanian National Institute of Statistics, authors' elaboration

[3] See Law No. 216/1997 for the approval of Government Ordinance No. 22/1997 on protection measures granted to personnel in the mining industry and the activities of geological prospecting and exploration.

3.3 The just transition: The prospect of a bounce-back

As shown in Figure 4, today's demographics of the Jiu Valley do not indicate accelerated ageing or the prospect of depopulation. Nevertheless, many of those aged between 40 and 60 (the best-represented age group) are either retired or on the verge of retiring from the mining sector, meaning they are no longer part of the active population.

There are four mines still active in Jiu Valley with approximately 4,000 employees: Lonea, Livezeni, Lupeni and Vulcan, supplying the Paroşeni power plant, which is already working intermittently, at a much-reduced production capacity. The closure of Lonea and Lupeni was initially scheduled for 2018; later, the deadline was postponed, and the closure of all four was announced for 2024 (Burlacu et al., 2019). In the latest version of the post-mining strategy for the Jiu Valley (PwC, 2021), the deadline mentioned is 2030.

4. Methodology

A relevant feature of the methodology used in this project is the positioning of the authors with respect to the subject. The first author is of Romanian origin, having close ties with the analysed community, acknowledging that she sometimes behaved like a stakeholder during the study. The second author is a Belgian geographer from Liège, a region which until forty years ago it had an industrial profile similar to Hunedoara County, based on mining and steel. The design of the methodology starts from the observations made by the Romanian researcher monitoring the coverage of the transition in national and local media between January and October 2020, analysing the political discourse, as well as the legislation in force regarding the coal transition in the Jiu Valley.

Subsequently, we formulated the following research hypotheses:

1. Even though mining activities have been decreasing in Jiu Valley since late 1990s, the level of awareness and preparedness for the coal phase-out is low;
2. Actors with an elevated level of agency do not benefit from a high level of trust and vice versa; and
3. Certain stakeholders intentionally slow the transition down. These findings lead us to question how resilient the community can be under these circumstances.

To start an in-depth analysis of the transition in the Jiu Valley and evaluate the implemented measures' performance, we needed benchmarks. Reviewing the pre-existing literature provided us with the necessary markers. From comparative analyses delivering frameworks for a successful just transition (Brauers and Oei, 2020; Campbell and Coenen, 2017; Felli, 2014; Harrahill and Douglas, 2019; Kelemen, 2020; Kern and Rogge, 2018; Oei et al., 2020), we extracted the information to develop the survey questionnaire and the focus group protocol. The data thus obtained became grids for assessing the implementation stage, the quality of stakeholder consultations and their attitudes towards the imminent closure of the mines.

Purposive sampling was performed for the survey, selecting 105 well-informed participants: former or current mining employees, academics, local journalists, local authorities, community leaders, and representatives of NGOs. The survey included closed, open-ended, multiple-choice questions and a series of Likert-scale questions. The questionnaire was structured in four parts:

- Part I – profile data indicating the category of stakeholders and beliefs related to the necessity of mine closure;
- Part II – beliefs related to the vulnerability of the community and their capacity to adapt;
- Part III – their sources of information on the transition and their perception about the influence and credibility of the incumbent actors; and
- Part IV – their vision on the economic profile of the region in the postmining stage.

The purpose of the questionnaire was to test hypotheses and collect data that would inform a stakeholder mapping, illustrating their positioning about the transition: supportive, passive, or against. At the same time, we aimed to determine the degree of perceived influence that each of the following categories of actors exerts on the transition process: European Commission, national authorities, local authorities, NGO activists, national media, local media, academics, entrepreneurs, unions, and former miners. The questionnaire was written in Romanian and was administered online[4] between December 2020 and April 2021.

The subjects were recruited from all categories of stakeholders – current or former miners, activists in local NGOs, university and high school teachers, journalists, civil servants, local authorities, and entrepreneurs, some wearing

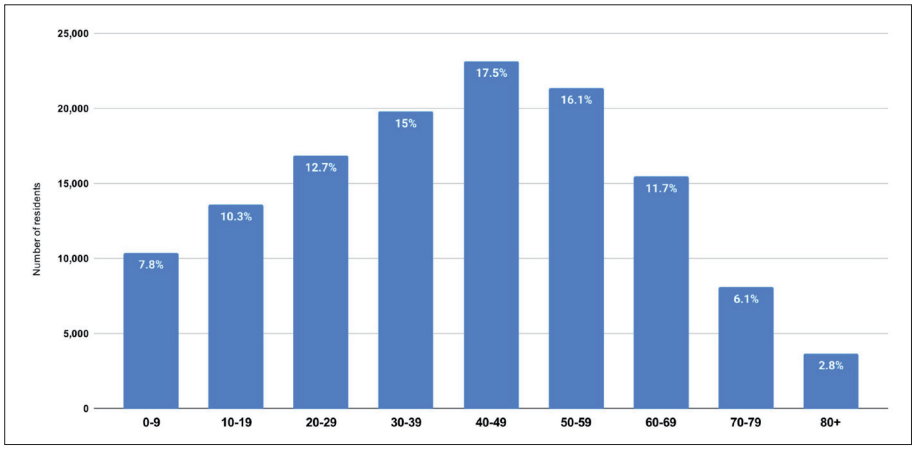

Fig. 4: Jiu Valley population, by age groups, in 2020
Source: Data: Romanian National Institute of Statistics, authors' elaboration

[4] This choice was due to travel and social gathering restrictions during the Covid 19 pandemic.

several "hats". For example, 26% of survey respondents said they were NGO activists, but we found out later that some of them were former miners, others had entrepreneurial initiatives, and local government representatives included mining retirees. When processing the collected data, we considered that the most relevant categories for this study are the following groups: current employees in mining – 22%, mining retirees – 29%, and others – 49%. Respondents to the questionnaire were between 25 and 65 years old; a majority of 83% are native and still live in the region, while others know the issue through the lens of their professional activities – consultants, journalists, Romanian government employees or officials in the European Commission and European Parliament, with duties in implementing or reporting the just transition.

The questionnaire results provided clues to investigate further who and why is slowing down the transition in the Jiu Valley. From now on, the work of the two authors is separated. The first author valued her connections with the community, embracing action research methods that allowed her to behave as a participant and facilitator, thus co-producing with the locals' 'warm' data that provides more context for understanding the specifics of the coal transition in the Jiu Valley. The objectives of action research are twofold: on the one hand, action research aims to construct new pieces of knowledge with the participants, researchers, and actors; on the other hand, it helps to achieve practical targets by reflecting on the processes and trying new methods (Schmitz, Lekane Tsobgou, 2016). While the first author is very close to the community she observes, the other author will be observing the observer, drawing her attention to her blind spots and acting as an advisor to identify patterns. The first author goes in-depth and reports the local context, and the second author places the findings in a broader context, restoring the balance between the subjective and the objective.

Fifteen people belonging to different categories of stakeholders participated in the semi-structured interview stage – eleven men and four women – aged between 35 and 65, with secondary and higher education. The interviews followed a structure through which we sought to determine what each respondent thought about: 1. the sense of place and attachment to the Jiu Valley; 2. climate change and the need for decarbonisation; 3. relations with other stakeholders; and 4. consultations for the development of the postmining strategy of the Jiu Valley. Each interview, however, was customised beyond the few standard questions based on the respondent's profile. The average duration of an interview was 45 minutes, and the discussions were conducted in Romanian via an online video application in February–March 2021.

On April 14, 2021, the first author participated as an observer in consultations between stakeholders, representatives of the Romanian government and PwC, the consulting company mandated by the European Commission to elaborate the postmining development strategy of the Jiu Valley. The preliminary results of this research were presented and debated in two focus group sessions. Within the focus group, the subjects reflected on the notions of transition, vulnerability and resilience at the community and individual levels. Twelve men and eight women aged between 19 and 55 completed or nuanced the data we had previously collected. The conclusions of the debates were corroborated with the results from the previous stages and included in the results of this article. To assign the quotes used in the results section, we used culturally appropriate pseudonyms.

5. Results

5.1 Perceptions and beliefs about the mine closure

The online questionnaire was the first step in collecting data and, as some of the participants stated in the later stages of this research, many of them did not have a clear opinion at the time as to why the mines needed to be closed. In the absence of complete and unbiased information, many respondents chose options that they were not necessarily sure about but seemed plausible. Not having much certainty, the vast majority avoided the "Disagree" option, most often choosing "I tend to disagree" (Fig. 5). We find it conclusive that for the participants in this study, however, it was just as plausible that the mine closure plan is an unfair measure against mining employees (47% tend to agree and 27% agree), but at the same time, a necessity for the economic recovery of the region (52% tend to agree and 29% agree). Although only 6% of survey participants fully agree with the option of closing coal mines as a necessary measure for achieving the global carbon footprint reduction targets, 66% of respondents tend to agree that it would be beneficial. The apparently contradictory responses highlight the difference between necessity and fairness. Some actions are considered necessary, considering general environmental and economic reasons, but unfair due to poor accompanying measures at local and personal levels.

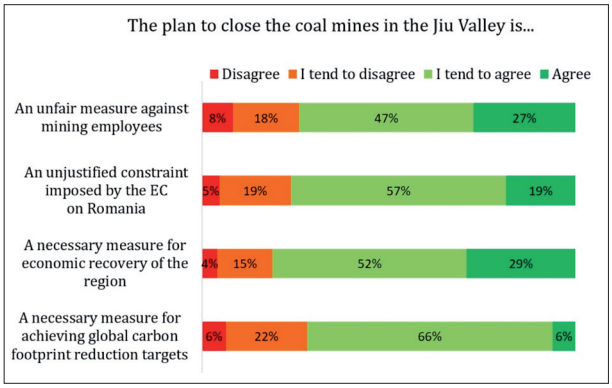

Fig. 5: Responses on the plan to close coal mines in the Jiu Valley. Source: authors' survey

Given that the deadline for closing two of the coal mines had already been exceeded, we wanted to find out how much favourability there is among the respondents regarding the delay. We found that a total of 47% of respondents do not think that the mines should have been closed, therefore, almost half are in favour of the delay, while 37% think that the closure process should have ended by now, and 16% do not have a clear opinion. A deeper analysis of this result, broken down into specific stakeholder groups (current employees in mining, mining retirees, and others), indicates that they have a discordant agenda. Predictably, most of those currently employed in mining (77%) answered that the mines should not have been closed, while the participants in the study belonging to other professional groups are equally divided between those who believe that the process of mine closure should have ended (38%), and those who oppose the closure (38%). This split highlights the point of view of mining retirees, a group of stakeholders who know the system as well as current employees but who, unlike them, are no longer dependent on the income obtained in the extractive industry. As seen in Figure 6, almost half of the surveyed retirees believe the mines should have been closed already and only 39% are in favour of the delay.

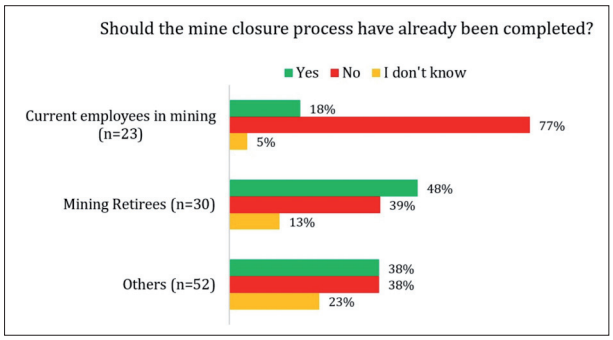

Fig. 6: Differences in the attitudes of stakeholders to the mines closure process. Source: authors' survey

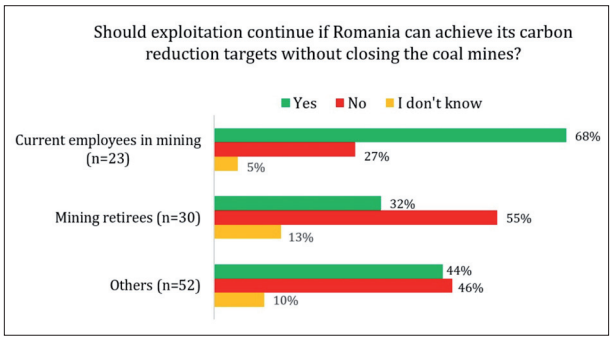

Fig. 7: Differences in the attitudes of stakeholders to the potential future of coal mining. Source: authors' survey

Whether or not they agreed with the closure, the explanations given by the retired miners for slowing down the transition converge in the same direction: delaying the closure is a form of social protection in the absence of a reconversion plan. The following excerpts from interviews with stakeholders support these statements:

> "The deadline had to be met, as in Germany. They closed the last coal mine in 2018, according to the plan. Most likely, the company wants a gradual decrease in the number of employees in mining and there are delays because no alternatives have been created in time. By postponing the closure, more and more people will retire, and the problem will resolve itself. The company, the authorities, no longer must worry about professional conversion programs." (Cornel, retired mining engineer).

> "It is a good thing they didn't close them! Other jobs should be created first and only then can we close the chapter called "mining". Where would the laid-off people go if the mines closed in 2018? They would be unemployed today" (Ovidiu, retired mining engineer).

> "I am almost 38 years old now, in three more years, I would already have the necessary seniority in underground work that would allow me to retire at 45. Obviously, this is the option that suits me the most and I hope that the union will be able to postpone mine closures at least until 2030." (Marian, a current employee in mining)

The different views of former and current miners were even more evident when we discussed the rather low share of coal in Romania's energy mix (between 10% and 20% of daily energy production, according to Transelectrica[5]) and Romania's ability to achieve carbon footprint reduction targets without having to shut down coal mines. In this situation, 46% of all respondents say that the exploitation of coal mines in the Jiu Valley should continue, compared to 45% who say that mining should stop anyway. Once again, the split into groups stresses that former miners are more in favour of closure than the other groups (see Fig. 7).

Being aware of the outdated technology and the production and distribution chain deficiencies, 55% of surveyed retirees believe that mining should stop regardless. At the same time, 68% of currently active miners believe that mining should continue. Valeriu, a former mining engineer, explained:

> "A depleted field is now being exploited in a market that does not need this expensive energy. No matter how painful it may be, we cannot remain miners just because we were miners "from father to son". Today, more stone is extracted than coal, but we fool each other that something can be restructured. We must understand that mining has no longer a future in Jiu Valley, and we should make use of all the European money allocated for territorial and professional reconversion."

5.2 Perceptions about vulnerability and the stage of preparedness

More than four in ten (42%) of the participants in this study believe the community is vulnerable and 41% say it is very vulnerable, although most are convinced that the Jiu Valley has considerable potential for revitalisation through sustainable development projects (37.5% – remarkably high; 35.5% – high). Their pessimism is justified by the absence of information and awareness of actions on decarbonisation at the local level, as well as by the lack of assistance programs for those who will be affected by the dismissals that could follow. Trying to determine, during the focus group discussions, if the missing information is a problem of bad communication or rather unavailable data, it turned out that both explanations were valid. Communication from leadership to the community as well as from the community to local leadership was limited, public policies are still being developed and a clear timetable for the implementation of the transition has not existed for a long time, therefore nothing clear could have been reported by the media, the survey reinforcing these findings. To the multiple-choice question "What kind of assistance has been provided to mining employees so far?", 61% said they were unaware of any assistance program, while 40% said that the only option considered would be early retirement. About 8% believe that there could be financial incentives for those who want to become entrepreneurs, and 6% say they have heard about the option of relocating to a region where there is a shortage of labour.

The accompanying measures that should be taken before the actual closure of the mines to mitigate the shock to the community have been the subject of deep reflection at all research stages. With the chaotic layoffs of the late 1990s in mind, research participants are convinced that mines should not be closed before other jobs are created (50% Agree; 20% tend to agree) and by no means before establishing the subsequent land use (35% Aagree; 38% tend to agree) (Fig. 8).

Vocational retraining programs must be started only when the new economic profile is clear, aiming to qualify workers for the jobs that will be available in the post-mining stage, in order not to repeat what happened in the 90's, when

[5] See daily update at: https://www.transelectrica.ro/ro/web/tel/home

consulting companies organised qualification courses in trades that were not sought in the area. Loredana, a local journalist, commented:

> "Regarding professional reconversion, it is true that some courses were organised but with insignificant outcomes. Mining engineers followed specialisation courses as mine managers for closures, but very few were hired, and cooking classes were organised for miners. 5 out of 500, at most, succeeded in changing their profession."

5.3 Credibility, influence, and positioning of the actors

Based on the idea that awareness and preparedness play a pivotal role in the outcome of the just transition, we considered it important to find out who are the most trusted and the most influential stakeholders in the Jiu Valley, thus identifying who can inform and shape public opinion. In a ranking of trust, the European Commission is leading, followed by local NGOs and academics (see Tab. 1). In contrast, authorities, and the media, both national and local, are credited with a significantly lower level of trust.

The participants in the semi-structured interviews and focus groups justified this result by mentioning the financial dependence of the media institutions on the authorities, the companies in the energy sector and even on trade unions. In these circumstances, the objectivity of public communication on the just transition is severely affected and the community is thus deprived of the basic means to increase resilience. Besides, 73% of the locals who participated in this survey believe that the media should better explain the Green Deal and its consequences for the Jiu Valley. Furthermore, 65% say they expect the media to monitor how the authorities will assist those who lose their jobs, and 50% of respondents call for more debates on this topic. In fact, at all stages of this action research project, the subjects invoked the need to have more data to be better prepared for the closure than they were in the 1990s.

The credibility of a stakeholder, although virtuous, loses its importance if it is not accompanied by influence upon the transition process. The survey revealed that those local stakeholders (particularly local NGOs) perceived as credible are not necessarily considered influential, which raises questions about who dominated the decision-making process. Tab. 1 summarises perceptions of each stakeholder's ability to influence the transition process. National media and trade unions are perceived as the most influential actors in the just transition in the Jiu Valley, followed by local media, national authorities, local authorities and European Commission, while local NGOs and academics score significantly less.

In producing a mapping that informs the role played so far by each of the stakeholders in the Jiu Valley in the just transition, we chose to group them on the criteria of perceived influence, credibility, and attitude towards the transition from coal. Their positioning on the map (see Fig. 9) is primarily based on the results obtained in the survey, but in the interview and focus group stages, two sub-groups of stakeholders stood out and we consider it more appropriate to treat them individually:

a. former miners – whom we found the best-informed stakeholder, knowing the industry well, from the inside, but also freed from the relationship of subordination with the union that represents the current miners; and
b. local entrepreneurs – although in small numbers and with different positions, difficult to put in a single frame, they are the category of stakeholders with great potential

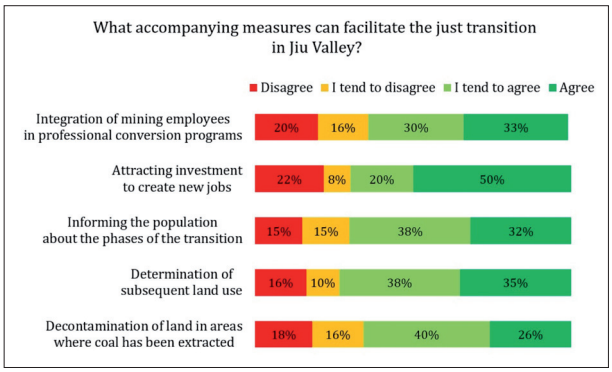

Fig. 8: Stakeholders' preferences of the measures that can facilitate the just transition. Source: authors' survey

Level of trust		Level of influence	
Actors	(%)	Actors	(%)
European Commission	68	National media	79
Local NGOs	65	Trade union	76
Academics	54	Local media	72
Local media	34	National authorities	69
Local authorities	33	Local authorities	61
Trade union	32	European Commission	58
National media	29	Local NGOs	29
National authorities	21	Academics	21

Tab. 1: Ranking of actors according to the respondents´ level of trust and perceived influence (Notes: The level of trust represents the percentage [%] of respondents who trust the specific actors very much or a lot (in contrast to those who trust them little bit or not at all). The level of influence represents the percentage [%] of respondents who consider the specific actors being very much or a lot influential (in contrast to those who consider them little bit or not at all influential). The actors are ranked according to the descending levels of trust and influence.) Source: authors' survey

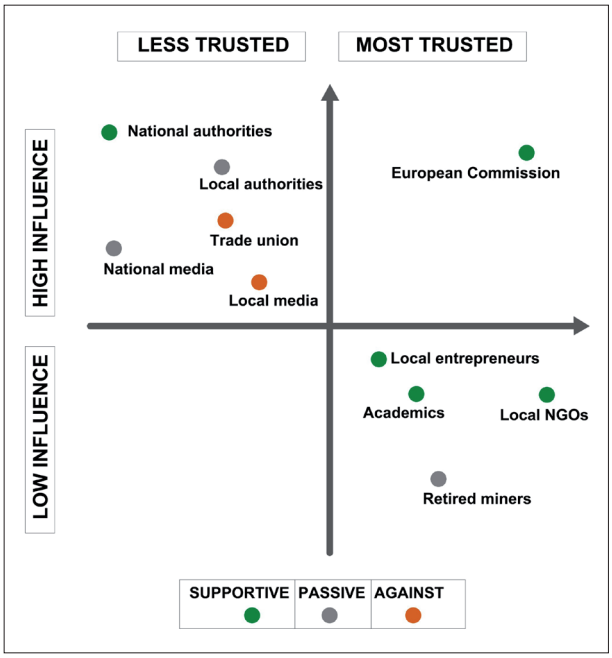

Fig. 9: Classification of stakeholders Source: authors' conceptualisation

to influence the outcome of the transition if they could create more jobs. Their positioning was conducted after individual discussions and after debating all the results within the focus group.

Among the stakeholders in the Jiu Valley, we identified actors who support the transition and who have already shown the agency to be actively involved in awareness and preparedness, such as representatives of the 21 non-governmental organisations from "Valea Jiului Implicata" coalition, local entrepreneurs, professors and researchers at Petroşani University. As shown in the chart above, however, they have little influence on the transition process. Despite their elevated level of influence, national authorities have no credibility in this matter. The Romanian government is indeed an international signatory to greenhouse gas emission reduction agreements, but it communicates almost nothing domestically. In this regard, political instability in Bucharest must be signalled as a factor altering the credibility and delaying the transition. Since 2015, when the Paris Agreement was adopted, and until the end of 2021, Romania had seven prime ministers with different priorities in the governing act.

The local administration, the holder responsible for transition management, has had so far, a passive but very detrimental attitude because leaving things in an area of ambiguity and not exercising arbitration during stakeholder consultations, has favoured those who slow down the transition. By placing the European Commission remarkably high on the scale of trust and influence over the transition in the Jiu Valley, the survey respondents showed that confusion persists regarding who is doing what in just transition. EC allocates budgets and sets the framework, while strategies are made and implemented locally. Local and regional authorities are credited with less influence, although technically, they are the most powerful in this specific situation.

A special category of stakeholders is the former miners, now retired, who proved to be the best-informed actors in the Jiu Valley at all stages of our methodology. Knowing from within the system dysfunctions, the forms of pressure exerted by unions on employees, the community and governments, mining retirees are the first to understand why a structural change in societal practices is needed. They play no role in preparing or managing the transition, however. Participants in our study identified the labour union as the incumbent actor who intentionally slows down the transition, as Mihail, a former miner, explained:

> "I have no qualms about saying that unions have always been a brake on the development of the region. They controlled many workers and blackmailed politicians for years. This is how they manage to postpone the closure of the mines, and the post-mining development strategy is long overdue. I am safe, I already have a good pension, but my children have no future here. We have to find solutions for them, but we are still postponing the start."

5.4 Visions of the future of the post-mining region

Asking them about their visions for the future of the region and the economic model that will replace mining, our respondents believe that further mono-industrialisation should be avoided, therefore diversification is necessary, and they are relying the most on Tourism (preferred by 43%), followed by Renewable energy (25%) and Light industry (24%) and at least on Agriculture (8%).

The belief that the territory has enormous potential for reconversion is, however, overshadowed by the lack of confidence in the authorities' ability to devise such a good strategy to attract all the European funding available for a just transition in the Jiu Valley.

As a result, 41% of participants in this study fear that this (weak development strategy failing to attract all available funding) is the biggest challenge for their community in the transition from coal, while 37% doubt that the post-mining strategy will aim for sustainable development.

As Radu, an NGO activist, pointed out:

> "There are a lot of opportunities for agrotourism, equestrian tourism and more, but the authorities need to set the framework for these projects and put them into a comprehensive, integrated strategy. Otherwise, they will remain just some ideas that locals discuss when they meet for a beer."

In addition, Florentina, a high school teacher, suggested:

> "Consultants have come to ask us what sustainable development projects can be done, but in my opinion, all these discussions are nothing but empty words on a lot of European money, without any real effects on our lives. A small group of people will again earn millions of euros claiming to have provided us with consultancy and retraining, but we remain just as poor, and the Jiu Valley will continue to be an underdeveloped region."

Apart from these two main problems, one fifth (20%) of respondents was most concerned about the inadequate transition assistance for the redundant employees, while the issues of the outbreak of protests of the mine closure and depopulation of the region are considered a greatest concern only by individual respondents.

6. Discussion and conclusions

As Kelemen (2020) explains, a just transition is not just about replacing one economic model with another but has clear goals of sustainability and spatial justice, which means that new industries are clean, jobs are green, and goods, services and opportunities are evenly distributed. Therefore, in an optimistic scenario, within the framework created by the European Commission for the transition from coal, the shrinkage may finally stop, and a stage of recovery and renewal could begin for Jiu Valley.

In theory, locals in many regions will say they support the energy transition, but when facing the negative perceived consequences, some will choose to preserve the current status quo, especially in coal mining communities. Like other post-mining areas in the past, Jiu Valley is marked by a strong social memory, remembering the golden age of mining communities during the dictatorship that shaped their identity and put the area in a positive light. Why should they speed up mine closures, especially when very few horizons are opened for their home Valley, and the climate agenda seems far from their remote Transylvanian towns? Only the retiree miners have a clearer view of the issue of maintaining coal mining. Even if some local assets could be harnessed, however, the transition does not have much public acceptance, mainly due to delays in getting started. Moreover, the lack of influential and dependable active agents does not play in favour of a just transition. Beyond that, the more time lost, the less opportunity there is for recovery and renewal.

Nevertheless, some recommendations emerged from this action research project. The mapping of stakeholders emphasises that, among the strong actors, the local community trusts only the European Commission, but the EC has so far seemed distant and ignorant of the local context. Other powerful actors are unreliable, especially because of corruption, leading to the difficulty of coagulating around a common vision for the territory. Unlike the spectrum, some new actors, such as NGOs and retired miners, have gained the trust of the community, however, they should be recognised and empowered in managing the transition.

During this project, co-producing information with locals and revisiting the research questions at various stages of the analysis, better informed each time, provided the subtlety and context needed for understanding the challenges that may arise when European directives encounter local realities. Interviews and focus groups also helped the community to consider other political, spatial, and temporal levels of the transition. It has been emphasised that, if individual solutions can be found, it is essential to reflect collectively on the future, especially out of concern for the younger generations.

When we compared local realities with theoretical concepts and examples of good practice described in the literature, we diagnosed several problems that may weaken the community's resilience in near-future hardships. Firstly, the risk management is delayed. There is too little awareness and preparedness for the community to be able to allocate the necessary resources aiming to mitigate the impact of mine closure. Consequently, this would be negatively reflected in the recovery stage, which, the longer it lasts, the lower the chances for renewal. Communication, essential at all stages of building community resilience, is deficient both from the authorities to the population and from the population to the leadership. Most of the locals feel underrepresented in the public discourse. This has a demobilising effect, exacerbating their feeling that they have been abandoned by everyone: politicians, the media, and the rest of Romanian society.

Secondly, the vacuum of reliable information, the traumatic experience of the transition from socialism to capitalism and the mistrust of leadership have turned most locals into passive spectators who do not consider themselves capable of changing their fate. This situation is detrimental because it leads to an underutilisation of resources, be they material assets, landscape, cultural or intangible heritage. Therefore, the community has little agency to act and judging by the delays in risk management, it is unlikely that actions will be taken in time, a prerequisite for both strengthening community resilience and the success of the just transition.

Third, collective action may prove problematic if stakeholders continue to have different and sometimes divergent interests. We believe that this shortcoming also has its origins in poor preparation for impact – risk management would also have involved establishing stronger collaborative relationships.

The case study of Jiu Valley underlines some shortcomings in implementing just transitions, including the issue of governance and mistrust towards local and national authorities, difficulties in orchestrating individual agendas to launch a collective action for the future of the region and, not least, poor information and delays of the mine closures. Concerning the hypotheses about awareness, preparedness and transition delays, the research pointed out some of the mechanisms that explain the scarce preparedness and why, both closure and transition, were repeatedly postponed. Furthermore, the research profiled the different actors and highlighted the challenges to address and roles to contribute to the just transition. We found people who are strongly attached to the region, determined to create a more sustainable future, with or without the European funding. For a post-mining community, being resilient is not just an adaptation to absorb the shock but requires a structural transformation of the economy and society. This transformative process is only possible by manifesting a level of agency that may be lacking in a post-socialist system. The population needs adequate information, taking into account local specifics, and the information must be disseminated by actors considered to be reliable. Therefore, we believe that such action research supplements the official initiatives, especially in this state of suspicion toward the authorities from all levels and recalling the bad memories of previous unjust transitions. Our findings may help to increase the capacity to adapt, the agency to act, and the necessity to act on time.

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