

Role of media in managing environmental conflicts in Rovinari Thermal Power Plant area, Gorj County, Romania

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Abstract

Thermal power plants currently contribute significantly to global energy production. However, they cause a series of environmental conflicts through pollution and environmental degradation processes. In this context, people, as well as a number of environmental organisations, NGOs, and mainly the media play an important role in managing these conflicts. In this study, we aimed to analyse how the media can contribute to the management of environmental conflicts generated by the Rovinari thermal power plant in Gorj County, Romania. Its impact is highly visible in the village of Rogojel (Farcășești township), which is located in the immediate vicinity of the thermal power plant, owing to the noise produced by the conveyor belts and excavators, as well as the air pollution generated by the coal dust. Residents have submitted a series of complaints to the Environmental Guard, the Government, and the European Commission. As a method of investigating the situation, both local and national media, which have become a real agora where citizens express their dissatisfaction were chosen. Ziare.com was chosen as a news archive, where 20 volunteers read 24 news articles. When asked if the article reflects concerns regarding the environment, a total of 276 affirmative answers were obtained. In addition, when volunteers were asked how much violence and tension does the article convey, a total of 136 responses were obtained for maximum violence and 160 for high violence. The Cronbach Alpha index had values of 0.73 and 0.66 in the first and second cases, respectively. The articles and strong words of the volunteers were analysed using NVivo software to calculate their frequency and the degree of correct results. Currently, the situation is still open to debate, beyond the unlikely solution of relocating the entire locality or closing the thermal power plant.

Keywords: *Rovinari thermal power plant, environmental conflicts, violence, management, media, NVivo software*

Rezumat. Rolul mass-media în gestionarea conflictelor de mediu în zona Termocentralei Rovinari, Județul Gorj, România.

Centralele termice contribuie în mod semnificativ la producția globală de energie. Cu toate acestea, ele provoacă o serie de conflicte de mediu prin procesele de poluare și degradare a mediului. În acest context, oamenii, precum și o serie de organizații de mediu, ONG-uri și, în principal, mass-media joacă un rol important în gestionarea acestor conflicte. În acest studiu, ne-am propus să analizăm modul în care mass-media poate contribui la gestionarea conflictelor de mediu generate de centrala termică Rovinari din județul Gorj, România. Impactul său este foarte vizibil în satul Rogojel (comuna Farcășești), care se află în imediata apropiere a centralei termice, datorită zgomotului produs de benzile transportoare și excavatoare, precum și de poluarea aerului generată de cărbune și praf. Locuitorii au depus o serie de reclamații la Garda de Mediu, Guvern și Comisia Europeană. Ca metodă de investigare a situației, a fost aleasă mass-media locală și națională, care a devenit o adevărată agora în care cetățenii își exprimă nemulțumirea. Ziare.com a fost aleasă ca arhivă de știri, unde 20 de voluntari au citit 24 de articole de știri. Când au fost întrebați dacă articolul reflectă preocupări cu privire la mediu, a fost obținut un total de 276 de răspunsuri afirmative. În plus, când voluntarii au fost întrebați câtă violență și tensiune transmite articolul, a fost obținut un total de 136 de răspunsuri pentru violență maximă și 160 pentru violență ridicată. Indicele Cronbach Alpha a avut valori de 0,73 și 0,66 în primul și respectiv al doilea caz. Articolele și cuvintele puternice ale voluntarilor au fost analizate folosind software-ul NVivo pentru a le calcula frecvența și gradul de rezultate corecte. În prezent, situația este încă deschisă dezbaterii, dincolo de soluția improbabilă a relocării întregii localități sau închiderii centralei termice.

Cuvinte-cheie: *Centrala termică Rovinari, conflicte de mediu, violență, management, mass-media, soft-ul NVivo*

Introduction

Environmental conflicts are an important area of study in today's society, and managing them is difficult because the quality of life depends on it. Environmental conflict management aims to improve the interrelationship between people and the environment by focusing on natural and human health (Boyle, 2021; Gâstescu, 2001; Jardine et al., 2003). The environmental management agenda includes sets of actions and systems for reflection, guidance, negotiation, and participation (Keen et al., 2012; Sidaway, 2005). Environmental conflicts are

generally complex and highly polarised, with public administration tending to focus on rules, roles, and responsibilities, and the public reacting to conflicts from a variety of perspectives and circumstances (Bădilă et al., 2007, p. 3).

Environmental conflict management refers to a series of interventions to solve the problem of the actors involved and to transform their dissatisfaction into a relationship of cooperation and sustainable ecological improvement (Mason & Spillmann, 2003). Determining the causes of a conflict depends on the ability of the parties to communicate and how the actors perceive the dispute. Article 33 of the Charter

of the United Nations states that the parties to any dispute must first seek a solution through negotiation, investigation, mediation, conciliation, arbitration, legal settlement, recourse to regional agencies or commitments, or other peaceful means of their own choice (quoted by Muigua, 2012, p. 58).

Alternative tools to resolve environmental conflicts in Central and Eastern European countries are not well known (Jonavicius, 2008; Taggart & Szczerbiak, 2004). Classic administrative and legal procedures are widely used; however, experts are limited, and there are few institutions specialising in mediating environmental conflicts. In Germany and Austria, mediation was used in the 1990s for waste management, and is now being used in urban planning, spatial planning, and traffic (Linnerooth, 1990; Troja, 2000).

In Romania, Law no. 192/2006, regulating mediation is applied in an awkward and truncated manner. The causes of environmental conflicts in Romania are diverse and these include air and noise pollution generated by economic agents, construction on green spaces, location of landfills, unauthorised activities of economic agents, polluting industrial capacities, construction of highways, deforestation for the extension of residential spaces, and requests to claim some lands from parks (Ianoș et al., 2017; Niță & Iojă, 2020). Environmental conflict management in Romania resides in court actions, organising public debates, movement of authorities on the ground, addresses, hearings, complaints, fines and sanctions, decisions of the local council, sending alerts to those who violate environmental legislation. Alternative techniques to resolve environmental conflicts are usually multiple: facilitation, moderation, socio-therapeutic consultation, conciliation, mediation, arbitration, adjudication, and negotiation (Andrew, 2001; Sipe & Stifel, 1995; Wiedemann & Femers, 1993; Wehrmann, 2008).

Although mediation is in line with the European trend, it applies very little in the Rovinari coal basin. Even though an environmental mediation office is rarely used, mediation remains a desirable technique to manage environmental conflicts. In the study area, the role of the mediator is held by the media, which considers the pulse of events and finds solutions for conflict management. If mediation is not applied consistently, negotiation remains the classic technique used to resolve environmental conflicts such as those in the Rovinari coal basin, which is rooted in the collective mind, which must be followed by immediate benefits for the parties to the conflict. Public debates such as formal and mandatory by law (public information, hearings, and referendums), as well as informal and voluntary (round tables, planning groups, and public debates) also play an important

role in the management of environmental conflicts (Rouhana, 2000; Turnock, 2003). This form of environmental conflict management, although in its infancy in the Rovinari Basin, aims to bring the same table the actors involved in the conflict, can bring creative solutions, stimulate dialogue, and provide the citizen the feeling that it is an active and important part of conflict.

In Romania, a series of environmental conflicts were highly publicised at the national level and these include the explosion in Mihăilești (2004), the aldehyde factory in Sebeș (2013), the cyanide spill in Timiș (2000), the Copșa Mică case (2003), and the closure of the Arpechim factory. The Roșia Montană cyanide mining project and shale gas exploitation in Vaslui County are included in the World Atlas of Environmental Conflicts, conducted within the European EJOLD project.

In this context, the objectives of this study are to: (i) highlight the environmental conflicts generated by the Rovinari thermal power plant, (ii) present alternative techniques to resolve environmental conflicts, and (iii) highlight the role of mass media in managing environmental conflicts in the village of Rogojel.

Study area

By Government Decision no. 258 dated 13 February, 1968, the decision was made to build the Rovinari thermal power plant, whose first block was put into operation in 1972, with a capacity of 2000 MW (Pasere, 2014). CE Rovinari produces electricity based on lignite and was established on April 1 2004 by merging the Rovinari power plant (part of Termoelectrica) with the Rovinari, Tismana, and Pinoasa mines, which had previously been owned by SNLO. The Rovinari thermal power plant consists of energy blocks no. 3, 4, 5, and 6, which were put into operation between 1972 and 1979, with an installed capacity of 1720 MW, which is also one of the largest polluters in the country (Anghelescu & Diaconu, 2012; Bălăceanu & Dumitru, 2011; Bălăceanu, 2013; Bîzgak et al., 2009; Maxim, 2009).

The Rovinari thermal power plant is located in the town of Rovinari, in a depression area of Jiu, which borders on the east with Bran Hill, on the west with Măgeac and Lupului hills, on the north with Târgu-Jiu-Câmpu Mare Depression, and on the south with Jiu Meadow (Figure 1).

Data and methods

To achieve the objectives of this study, qualitative and quantitative analysis methods were used.

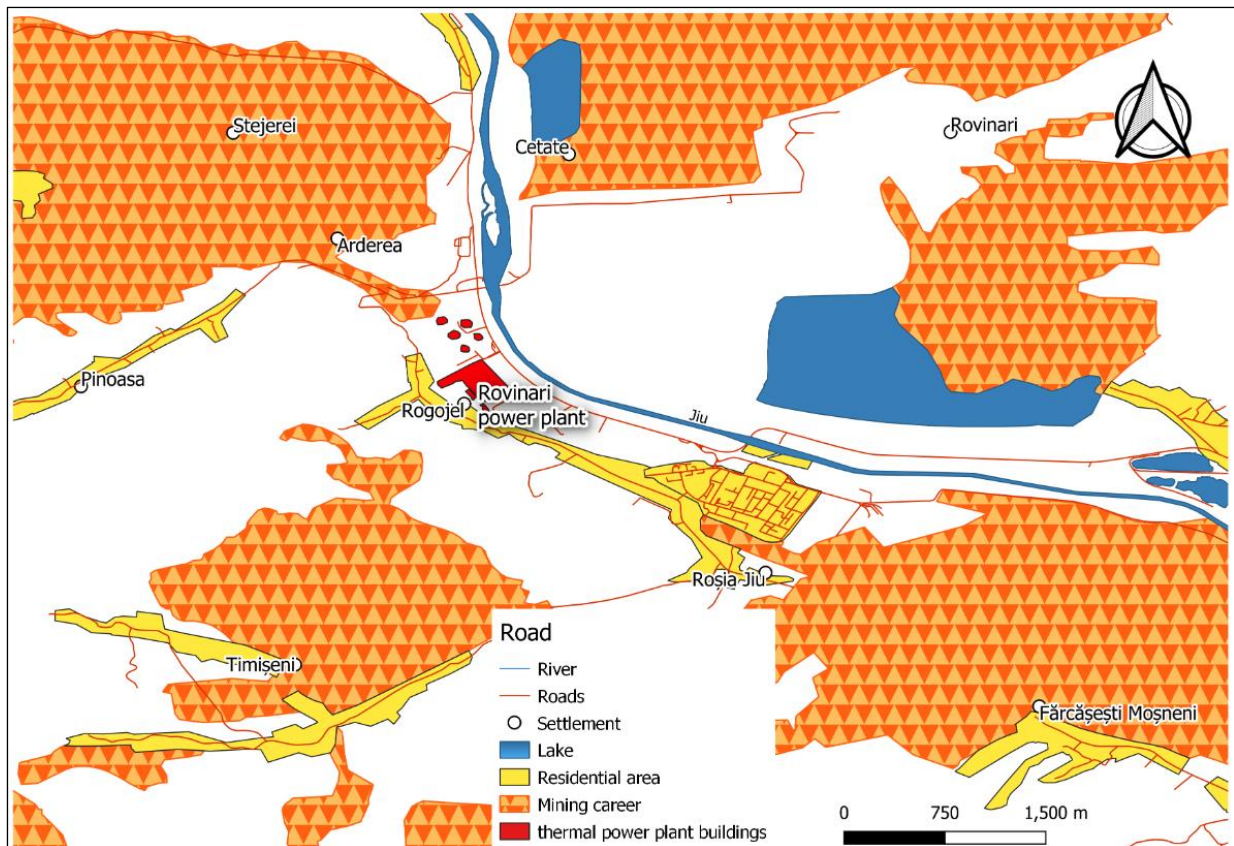


Fig. 1: Location of the Rovinari thermal power plant area

Thus, the media, as a method of quantitative analysis, has evolved since the 1960s into an instrument of presentation and public debate on environmental issues (Hansen, 2011), a media arena free of external constraints with a mediation function associated with specific interests (Croteau & Hoynes, 2001). The role of the media is essential in public disputes as it influences the attention paid to certain issues or people leading to the formation of an opinion (Sobczyk & Badera, 2013; Steffek, 2009), attempts to improve the understanding of human-environment interactions (Taylor et al., 2000), helps citizens to defend and promote their opinions and reach a consensus with stakeholders, to alleviate the problems (Luedeckem & Boykoff, 2017; Zalupca, 2016).

Through different sources of information, which is sometimes used selectively and through active way of presentation, the media can influence the final result of the conflict (Sobczyk & Badera, 2013; Taylor et al., 2000). Nowadays, in modern societies, the mass media has a central interpretative system (Peters & Heinrichs, 2005, p. 2). In this study of a thermal power plant located in a mining area, the interested parties are represented by local authorities, NGOs, the local community, and individual citizens (Sobczyk & Badera, 2013).

Geographers have recently used newspapers to study various phenomena, such as food consumption practices (Valentine, 1999), cases of violence (Meth, 2003), the New Age spirit (Holloway, 2003), relationship between fishermen and wildlife in Zimbabwe (McGregor, 2005, 2006), childhood in rural Bolivia (Punch, 2001), and the lives of homeless people (Johnsen et al., 2008). Journals involve a broad set of research techniques (McGregor, 2006), which are based on interviews, in-depth observations, and reflection embedded in the Western tradition.

Research generated by the investigation of newspapers on the Internet has been considered as a new methodological frontier, because it contributes to data collection, survey-based research (Vehovar & Lozar-Manfreda, 2008), and the dissemination and implementation of research projects (Kagawa, 2007; Madge et al., 2009; Parr, 2002). Some authors (Best & Krueger, 2004) consider that the Internet should be used with discernment, because it is too easy, cheap, and does not equate to quality research. Therefore, mixed research (online and on-site) is recommended to ensure credibility of the data (Madge & O'Connor, 2002).

In this regard, the radio articles, TV, and written journals relevant for each case study were analysed, from the moment of the onset of environmental conflicts and until their completion. We grouped the

articles in the media according to the event presented. This study was supported by 20 volunteers (10 pupils and 10 students) who read the articles independently.

Using Schmidt et al. methodology (2013), two major questions were posed to highlight the media attention: the article reflects care for the environment and how much violence does the article report? For the first question, we used Boolean answers (true/false), quantified by 1 and 0 (1 for Yes and 0 for No). To highlight the level of violence in the article, the answers to the second question were quantified on a Likert scale, which has five possibilities (1: very high violence, 2: high violence, 3: medium violence, 4: low violence, and 5: very little or no violence). The respondents were also asked to identify strong words that reflected violence, dissatisfaction, and conflict.

Ziare.com was chosen as a news archive because it reports both the county and national news and the information is conveyed through publications, websites, radio, and TV. The variables were the name of the newspaper, name of the article, date of publication, type of publication (national or local), degree of environmental support, and the level of violence experienced. The variables were introduced in Excel spreadsheets to easily calculate how articles that report an event from the unfolding of the environmental conflict affect the public.

To ensure the accuracy of the data collected from the volunteers involved in the study, the Cronbach's

alpha index was calculated, based on the model proposed by L'Engle et al. (2006), which also analysed the influence of the media on young people. In addition to this method, we also followed the procedure proposed by Clifford et al. (2008), who used QSR N4 to decontextualize the correspondence he wore with women in the ex-GDR, in connection with the experience of communism.

Given that certain words and formulas found in journals are repeated at a certain frequency, NVivo software was qualitatively used to record, encode, and interpret them. Thus, we introduced the analysed articles, NVivo (Paulus et al., 2015; Woods et al., 2016) as well as the strong words proposed by the volunteers. Their frequency was calculated to check if this study achieved the correct results.

Results

The Rovinari thermal power plant is one of the largest electricity in Romania as it generates pollution and has provoked several environmental conflicts between various institutions and environmental organisations. The impact of this thermal power plant is particularly high in the village of Rogojel (Fărcășești township), which is located near the energy unit and is surrounded by excavators and piles of coal (Figure 2).



Fig. 2: Aspects of the environmental conflict in the vicinity of the Rovinari thermal power plant are Rogojel Church (a.), Rogojel Kindergarten (b.), house threatened by the presence of a mining machine (c.), and sound-absorbing fences (d.)

The people living around this power plant have to endure the noise produced by thermal power plants, conveyor belts, excavators, and coal dust carried by the wind. Measurements made by independent ecologists and the Environmental Protection Agency showed that the noise level exceeds 75 dB, above the allowable value of 65 dB, according to STAS 10009/1998. Although the inhabitants have submitted complaints to the Environmental Guard, the Government, and the European Commission, their situation remains uncertain. The solution to the problem is to relocate the entire locality or close the

thermal power plant. The relocation process is difficult because of financial resources and property disputes. The lack of vision of the local authorities also lies in the location of a kindergarten near the thermal power plant, for the children of the colony, built with European funds and which will be put into operation soon. This highlights the inability of local authorities to create sustainable development projects in this area. The Rovinari thermal power plant contributed to the economic development of the area, but severely degraded the environment (Figure 3).

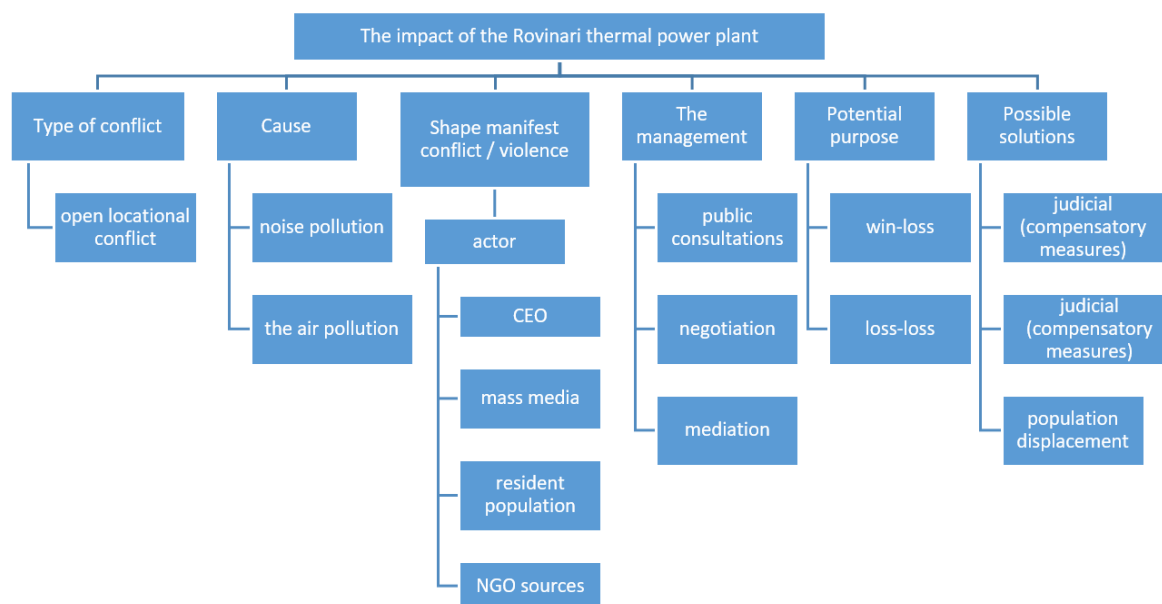


Fig. 3: Specific elements of the environmental conflict related to the impact of the Rovinari thermal power plant

Environmental conflicts in this area began to arise, especially after the year 2000, when NGOs appeared as they focus on changing the attitudes and behaviours of individuals to protect the environment and promote peace. The public utility of associations and foundations in Romania was regulated by the Government Ordinance of 26 December 2000 supplemented by Law 246 of 2005. The capitalist mentality and openness to the West helped in the emergence of NGOs, which emerged either from simple volunteer actions or because of the connections of some Romanian politicians with international ecological organisations. The most active environmental NGO in Romania is Greenpeace, and it has branches in 55 countries. In Romania, Greenpeace began its work in 2007 and launched various campaigns or organised various protests to stop environmental exploitation. This NGO promotes green energy and advocates for the closure of thermal power plants, Europe's major polluters, which are responsible for global warming. In this theorised conflict, various actors with different interests are caught, such as CEOs (polluters), who have financial interests, NGOs (which seek environmental protection), as well as the population, which have an

oscillating position, is divided, misinformed, manipulated, and dominated by outdated prejudices. In this context, environmental conflict was continuously reported between 2010 and 2019 and comprised several phases. The latent phase (2010-2011), when the conflict took shape and when a series of groping between the parties appeared, mirrored by the media. Communication distortions were caused by various interests. The major cause of the conflict was not only the protection of the environment and the population, but also the imposition of an ecological current. The conflict in 2012 was escalated with violent nuances when 20 Greenpeace activists climbed the cooling tower of the Rovinari thermal power plant and displayed banners with messages, such as "STOP CO2! and STOP THE POLLUTION!". The protesters were dealt with harshly, and 12 of them were arrested and fined. Such events were reported and influenced by the media, which became important in the development and resolution of the conflict (Table 1). The active phase of the conflict spanned between 2014 and 2019 and was characterised by contradictory speeches, mirrored by the media, and was called for legislation and public consultations (Table 2).

Table 1 Involvement of the media in the environmental conflict that broke out at the Rovinari thermal power plant in 2012

Nr. crt.	Article title	Source	Date
1	Greenpeace protest at CE Rovinari	Gazeta de Sud	6.04.2012
2	Unprecedented protest by Greenpeace activists climbing a cooling tower of the Rovinari Complex	Știrile Pro Tv	6.04.2012
3	Greenpeace protest at the Rovinari Complex	Gazeta de dimineata	6.04.2012

4	Greenpeace activists arrested in Rovinari after a protest against pollution	Agenția independentă de presă Amos News	6.04.2012
5	A group of German activists protested on a cooling tower of the Rovinari thermal power plant	Libertatea	6.04.2012
6	Green protest at the Rovinari Energy Complex	Antena 1	6.04.2012
7	Greenpeace protest at 100 m height, in Rovinari	Romania TV	6.04.2012
8	Greenpeace protesters boarded the Rovinari Thermal Power Plant	Antena 3	6.04.2012

(source: *ziare.com*)

Table 2 Involvement of the media in the development of environmental conflict (2014-2019)

Nr. crt.	Article title	Source	Date	Remarks
1.	Rovinari, the capital of pollution in Europe	Pro Tv	21.03.2014	Greenpeace activists have taken measurements near the thermal power plant, and the dust level exceeds the allowed value
2.	Greenpeace has equipped the Rovinari School with solar panels	Nonguvernamental	27.07.2015	
3.	Greenpeace measures the pollution produced at the Rovinari thermal power plant	www.ecoma.gazin.ro	20.03.2014	
4.	Greenpeace launches the green energy project for a clean future at General School No. 1 Rovinari	Radio România	01.07.2015	There were 40 panels (250w each), which provide 25% of the school's energy needs; The financing perspectives for such a project were presented
5.	The story of the photovoltaic panels from Rovinari	Press release Greenpeace	23.07.2015	
6.	Greenpeace Romania and Client Earth request the cancellation of the environmental permit for the Rovinari thermal power plant	Hotnews	31.08.2019	The thermal power plant does not comply with the new European anti-pollution laws. An administrative appeal was filed
7.	Greenpeace requests the cancellation of the operating license for the Rovinari thermal power plant. First at APM Gorj, then at the Tribunal	Energia.ro	31.10.2018	The UN Global Warming Report PPCC (Intergovernmental Panel on Climate Change) has confirmed that Europe needs an energy system that completely excludes fossil fuels by 2030
8.	The environmental permit of the Rovinari thermal power plant, contested by Greenpeace	Bursa.ro	01.11.2019	
9.	CEO rejects allegations made by Greenpeace	Bursa.ro	2.11.2019	The thermal power plant operates in optimal parameters Public opinion should also consider some aspects of the impact of green energy on human health (impact on neighboring habitats, large amounts of CO2 in the production of solar panels)
10.	CEO's response for Greenpeace environmentalists who want to shut down Rovinari thermal power plant	Economica.net	November 2018	Rovinari is not in the top 30 thermal power plants with the highest risk; In 2015 there were 3 cases of occupational diseases at the Rovinari thermal power plant; Public Health District Authority Gorj recorded 60 deaths in Rovinari
11.	Greenpeace is trying to revoke the operating license for the Rovinari thermal power plant	Press release	1.11.2018	The thermal power plant does not comply with the new European anti-pollution laws; The new authorization was granted in September 2018 and allows the thermal power plant to operate for an indefinite period; The thermal power plant is upstream of an EU nature protection site, the Jiu corridor Mercury is discharged upstream of the Natura 2000 site;

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12.	Greenpeace and Client Earth have sued the Rovinari Thermal Power Plant	Ziare.com	6.06.2019	The thermal power plant has been granted the environmental permit for life, without assessing the impact it has on people and the environment.
13.	The most polluting thermal power plant in Rovinari is being challenged in court due to the pollution	Ştiri.org	7.06.2019	
14.	CEO contradicts Greenpeace regarding the Rovinari thermal power plant	Gazeta de Sud	10.06.2019	The investments have been made to remove pollution (modernization of electrofilters, implementation of facilities to reduce SO ₂ and NO _x emissions, dense sludge and ash disposal, ecological reconstruction by returning the affected land to the agricultural and forestry circuit).
15.	Greenpeace has sued the Rovinari thermal power plant	Realitatea.net	7.06.2019	
16.	Greenpeace has sued the Rovinari thermal power plant for its impact on the environment	Digi FM	6.06.2019	
17.	Greenpeace has sued the Rovinari thermal power plant	Pandurul	29.07.2019	
18.	Greenpeace has sued the Rovinari thermal power plant	Evenimentul	29.07.2019	
19.	Greenpeace has sued the Rovinari thermal power plant	Ziua.news	6.06.2019	

(source: *ziare.com*)

To all these accusations, the CEO responded by exemplifying the investments and projects conducted to combat environmental degradation (Table 3).

Although thermal power plants started several projects to combat air and noise pollution

(desulphurisation plants, removal of ash and slag in dense sludge, and sound-absorbing panels), they are still insufficient and sometimes inefficient in combating pollution.

Table 3 Investments and environmental projects conducted by the Rovinari thermal power plant

Nr. crt.	Investments and environmental projects conducted by the Rovinari thermal power plant	Impact	Related legislation
1.	Desulphurisation plant implementation projects: Energy group no. 3, functional since 2011 Energy group no. 6, functional since 2011 Energy group no. 4, functional since 2014	Reduction of sulfur oxide concentration to 600 mg/Nmc, below the limit allowed by current standards, respectively below 200 mg/Nmc	Law no. 278/2013, on industrial emissions; Water Law no. 107/1996 Law no. 278/2013, regarding industrial emissions
2.	Projects for the implementation of detoxification installations Energy group no. 6, functional since 2018	Reducing the concentration of nitrogen oxides from 500 mg / Nmc, below the limit allowed by current standards, below 200 mg/Nmc.	Law no. 211/2011, regarding the waste regime
3.	Slag and ash evacuation projects in dense sludge, energy groups 3,4,5,6 functional since 2010 the evacuation of slag and ash in dense self-hardening sludge is achieved by a maximum optimal ratio of liquid-solid mixture = 1/1	- the ash is no longer blown away by the wind and is deposited - the stability of the deposit increases - infiltration water is no longer polluted and is reduced in quantity	- to comply with Directive 1999/31 / EC on the landfill of waste, the technology for the disposal of dense sludge, SE of Rovinari, Gârla landfill, is used
4.	Noise reduction projects	Noise attenuators were installed at the exhausts of the starting ejectors and at the SE of Rovinari sound-absorbing panels were installed	
5.	Projects aimed at urea injection at Energy Group no. 6 (2012-2018)	Reduction of NO _x emissions at SE de Rovinari	

(source: CEO)

A conclusive example is the village of Rogojel, where a plexiglass fence was built, with a height of 3-5 m and a length of 670 m, which failed to combat the noise produced by desulphurization plants, which are over 120 m.

The last phase is the decision-making and balancing power in favour of the winner. This conflict related to the impact of the thermal power plant is an open conflict, which can have the following solutions: legal (sanctions given to those who caused environmental damage), spatial, and physical (fences, other spatial delimitations, or implementation of new technologies to reduce pollution). The major risk is that this conflict deepens because of multiple actors, who have various interests. The probable finality of the conflict can be win-loss, the winning factor being the CEO, who is supported by the state, a part of the population, or by the media. Another possible scenario is loss-loss, which is particularly rigid, based on prejudices and heterogeneous mentalities (economic development versus environmental protection), the actors involved not being open to a transparent dialogue. The possible loser is the CEO, who delays the compensatory measures for those affected by pollution and investments in non-polluting

technologies, as well as the population that remains a prisoner in this toxic environment. However, the solution remains the legal one, and documentation that must be submitted by those in dispute is cumbersome and sometimes lacks objectivity.

From the 24 published articles, the main events of environmental conflict were highlighted (Table 4). It can be observed from the table that articles presenting Greenpeace actions have a much higher visibility at the national level (20) compared to those at the local level (3). The articles at the national level show a special concern for the environment and for finding solutions, because the average at the national level (0.74) is much higher than that at the local level (0.25). Regarding the variable violence, it is observed that the same trend, articles published at the national level are more virulent when they show environmental slippages (average 3.36), compared to articles at the local level, which are much more temperate, in the presentation of the environmental conflict (average 0.8). The distribution of the answers to the two questions is shown in Figure 4, which shows the total number of answers and the share of each category of respondents to the two questions asked.

Table 4 Variables of the environmental conflict at the Rovinari thermal power plant

Event	Total number of articles	Local media	Adherence to the environment (national)	Adherence to the environment (local)	Violence (national)	Violence (local)
Greenpeace protest	8	1	0.43	0	1.73	1
Greenpeace exposes excessive pollution	2	0	1	0	4.7	0
Donation of photovoltaic panels to the General School Nr. 1 Rovinari	3	0	1	0	4.67	0
Contesting the environmental permit	11	2	0.53	1	2.34	2.2
Arithmetic mean			0.74	0.25	3.36	0.8

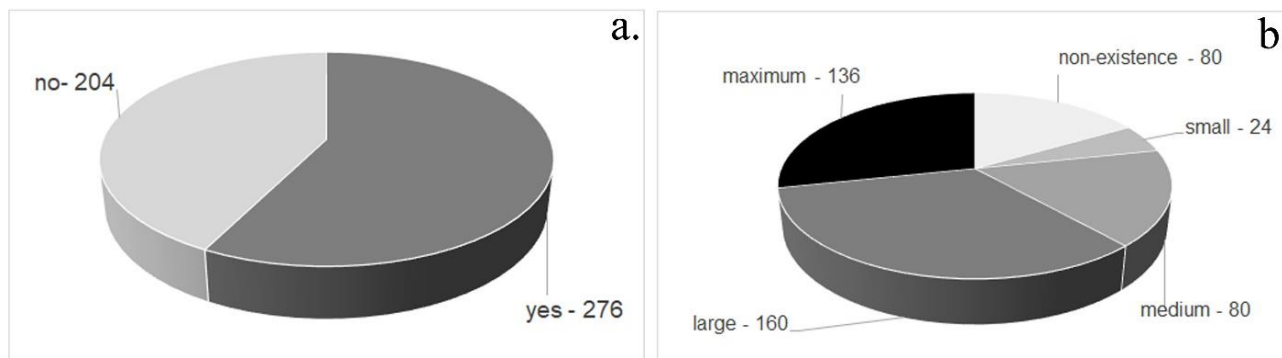


Fig. 4: The distribution of the answers

To reflect the concern for the environment, a total of 24 articles were read and 480 answers were obtained from 20 volunteers, of which 276 were affirmative answers and 204 were negative answers. To highlight the level of violence (tension, irascibility) that the volunteers felt, 136 responses were for maximum violence, 160 for high violence, and 80 for very low violence or nonviolence. For this set of answers, the Cronbach Alpha index was 0.73 and 0.66, respectively. Although it does not exceed 0.80, the index must be accepted because respondents had stated difficulties in locating workers either on the CEO's side or on the environmental side.

Discussion

In the past two decades, Romania, similar to most Eastern European countries, has gone through a process of deindustrialization (Bănică et al., 2017; Berger & Wicke, 2017; Popescu, 2014). Because a number of industrial units have closed, unemployment has risen significantly (Voinea et al., 2010). Therefore, a reindustrialisation process and a coherent industrial policy are required. The CEO and the state must give up the slogans, such as "Coal keeps jobs!". Coal ensures the energy security of the country!". Assessments of social vulnerability are required for the mines in the Rovinari basin and thermal power plant, in conjunction with the start of a coal-free development process, which considers economic development, infrastructure, education, and social and public policies (Kideckel, 2008). EU funds could support mining communities and do not support the mining industry. Simultaneously, there is a need for public involvement in decision making (Voinea et al., 2010).

The industrial situation in the Rovinari coal basin is a special one, which makes a discordant note with the national trend. If most areas of the country are facing the process of deindustrialisation (Jucu & Voiculescu, 2020; Voiculescu & Jucu, 2016) and the emergence of industrial ruins (Chelcea, 2008; Pușcă, 2010) in this coal basin, then we can speak of a real reindustrialisation. A conclusive example is the construction of a new energy group in 2013, with a capacity of 600 MW, by the China Huadian Group, which will provide 600 jobs (Tzelepi et al., 2020). This project will be implemented in an area where there are two decommissioned energy groups built between 1972-1973 and negotiations began in 2012 and were interrupted in 2016, resuming in 2019, as the Chinese demanded a state guarantee. This investment is to be completed by 2026 and is included in Romania's energy strategy (2019-2030). It is a brownfield project, based on supercritical technology, the third global trend in terms of age (use of gas turbines and combined gas-steam cycles), which reduces the amount of carbon dioxide and can use

diversified energy sources (Burnete, 2012). This project contradicts the European energy vision. The global trend is to give up coal owing to carbon dioxide and greenhouse gas emissions, and to make extensive use of green energy.

The Rovinari thermal power plant has a high pollution capacity (Istrate & Bănică, 2016; Rosen et al., 2015), being on the list of the most polluting 108 installations (Wynn & Coghe, 2017). Europe Beyond Coal shows that the Rovinari thermal power plant is the 28th thermal power plant in the EU, with a CO₂ emission of 5.191 million tons in 2018. In fact, Böhringer & Rosendahl (2020) state that Romania, Poland, and Bulgaria are among the few EU countries that have not communicated their plans to eliminate coal. Simultaneously, the Alliance for Health and the Environment (HEAL) produced a report called *The Unpaid Health Bill. How coal power plants make us sick* (2013). How coal power plants make us sick, in which scientific evidence related to the impact of thermal power plants on health is presented. Thermal power plants and coal mining areas emit suspended dust, SO₂, NO_x, heavy metals, mercury, and persistent organic pollutants (dioxin), which affect the health of the population (Tang et al., 2017; Tiwari et al., 2019). At Rovinari, the worst forms of pollution are those with heavy metals (Bălăceanu et al., 2011; Bălăceanu, 2013; Gămănesci & Căpățână, 2011) and ash resulting from burning coal (Angheliescu et al., 2012). The report also presents a series of recommendations for decision-makers and those involved in protecting health and improving the quality of human life. This report was covered by Bankwach under the name of an unpaid invoice. How our coal-fired power plants get sick and accessible to faracarbune.ro.

Conclusions

The actual management of environmental conflict depends on the attitude of the parties involved in the conflict and their views on the environmental issues that underlie the conflict (Găstescu, 2001, p. 30).

Environmental conflict has multiple dimensions, such as technical (imposition of non-polluting technologies, to be accepted by the parties to the conflict), financial (the polluter is obliged to pay environmental damage), and judicial (subjective interpretation of current legislation). Resolving environmental conflicts involves finding solutions that are accepted by all parties involved in the conflict, although finding appropriate methods is often difficult (Rauschmayer & Wittmer, 2006; Redpath et al., 2013). Environmental conflicts arise when certain restrictions and rules on environmental protection are violated by economic agents and have negative consequences on the environment and the population. If the economic agent is interested in the

profit of the industrial unit, the environmentalist is concerned with the quality of environmental factors and sustainable development. Environmental conflicts arise because of the clash of divergent interests and employ various actors, such as the government (must pursue the long-term development of society, consider international environmental law and listen to all parties to the conflict), economic agents (aiming to maximise profits), pressure groups (media, NGOs), and experts in various disciplines (health, environment, and economy), with the role of making a diagnosis and presenting objectively the consequences of resource exploitation on nature, in the long term (Gâstescu, 2001).

The success of environmental conflict management depends on identifying all parties involved and their needs. Conflict management is an integral part of a successful team (Thakore, 2013, p. 7); therefore, the negotiation process must be transparent and debated by the media, as well as by various experts. The use of a mediator is an efficient procedure that shortens the time period for resolving environmental conflicts.

The parties involved in the dispute must be open for communication and accept both the positive and negative aspects of the conflict. For the environmental solution to be sustainable and not be challenged over time, an institutional dialogue between the parties and the imposition of clear and sustainable regulations are required. As is the case in other mining areas (Folchi, 2003; Mohebbi et al., 2020; Monjezi et al., 2009) and in this case it is necessary for the competent authorities to make the so-called environmental impact statement which aims to present the physical, biological and socio-economic effects of implementing an environmental project.

The Rovinari thermal power plant continues to arouse dissatisfaction, protests, and controversies between economic agents and various NGOs. The people involved in the conflict live in a toxic environment, dominated by noise and dust, has an oscillating position in relation to environmental issues, and is often manipulated and misinformed. Against this background, there is a declarative war, often devoid of solid arguments between the economic agent and NGOs.

Although the active participation of media causes conflicts between the protagonists and mediator, the management of environmental conflict is often dominated by political interference and national press articles; however, the action of NGOs is much more aggressive in sanctioning environmental issues. On the contrary, the violence due to environmental conflicts is much more intense in national media articles than in local ones because of the involvement of local authorities and the oscillating position of citizens involved in the conflict.

By involving all the parties, environmental conflict can be a positive process, because all actors work together to find viable solutions to environmental problems.

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