

## **BARRIERS AND DETERMINANTS OF RESTRUCTURING EMPLOYMENT IN THE MINING INDUSTRY UNDER THE JUST TRANSFORMATION MECHANISM. INTERVIEWS RESULTS**

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**Purpose:** The purpose of using the method is to obtain information on the social perception of the employment restructuring process in the mining industry, taking into account the phase of design, implementation, monitoring and impact assessment for the industry and local communities.

**Design/methodology/approach:** The theses presented in the article have been verified using: literature review, critical literature analysis, document research and comparative analysis. The article presents a research method enabling social assessment of barriers and determinants of the employment restructuring process in the mining industry under the just transition mechanism. The method of researching the social perception of the hard coal mining employment restructuring process, due to the specificity and complexity of the issue under consideration, uses various, mutually complementary methods and techniques of social research: quantitative and qualitative.

**Findings:** As a result of the interviews carried out, it seems that all the expert assessments and opinions expressed confirm thesis that if the changes related to the just transition process cannot be stopped, then one must learn to take advantage of it. The view expressed above regarding the process of just transformation, which implies both economic and social challenges that are important for mining communes, among which the following deserve special attention as increasing the importance of the participation of mining communes in making government decisions, more friendly conditions shaping cooperation, need for mining communes to implement projects based on local mobility, adaptability and social sensitivity, need to increase social awareness related to mining in mining communes with responsibility for the just transition process, disappearance of state policies in the implementation of social functions in the phase of ongoing changes and taking them over by the local society.

**Originality/value:** The article enriches knowledge and develops a discussion in the area of social perception of the employment restructuring process in the mining industry. Based on the assessments and opinions of experts, it seems that in the perspective of the predictable occurrence of the transformation process, it could be important for local governments, and in particular mining communes, to promote actions for an evolutionary, not short-term shift from coal-based energy to low-emission sources - striving to make it a multi-stage and long-term process. Equally important may be the pursuit of solutions according to which the principle of introducing funds directly to individual communes for the implementation of the just transformation process will be adopted. Must be considered need for local governments, including mining communes, to obtain state intervention appropriate to the scale of the

challenges, while equipping them with reliable and comprehensively planned proposals for transformational activities limiting their spontaneity.

**Keywords:** human being, economy, region, model, restructuring.

**Category of the paper:** Research paper.

## 1. Introduction

Poland, and in particular the Śląskie Voivodship, is facing rapid economic changes, the effects of which will be felt both economically and socially. This transformation is necessary to implement the European Union's climate and energy policy.

A just transition is identified with the concept of a comprehensive restructuring of the mining and conventional energy sectors, causing significant changes in the labor market and in the production structure (Drobniak, 2021). Transformation processes can lead to growing and consolidating social divisions – the syndrome of "inheriting poverty and scarcity" – economic, civilizational and cultural territorial divisions. As the Silesian Marshal's Office notes, the Silesian Voivodship is the most coal-dependent region in the European Union, and mining plays a key role in the regional economy. In recent years, a gradual decline in its importance has been observed due to the decreasing production (Potencjały i wyzwania..., 2022). When analyzing changes in the level of employment in the country in 2012-2020, as reported by the data of the Central Statistical Office of Poland, in the Mining and quarrying section, the largest decrease in the number of employees was observed (by 19.6%). The largest number of employees in the mining industry is in the southern region of Poland, i.e. in the Śląskie and Małopolskie voivodeships (61.4% of employees, i.e. 91.9 thousand people), of which the Śląskie Voivodship accounted for almost 84 thousand. employed under section B, which accounted for as much as 4.7% of total employment in the region (GUS, 2019). The largest employment in the mining industry in the Śląskie Voivodship was in the Rybnik Agglomeration. As stated by the data of the European Commission, number of employed in the EU in mines is almost 185 thousand. people, with more than half of this number in Poland (Eurostat, 2022). In the country, the Śląskie Voivodship definitely dominates in this respect, concentrating nearly 70,000. working in mines (Hetmańczyk, 2022). The share of the Śląskie Voivodship in employment in the mining industry is almost 80% of the employed in mines in Poland and 43% of employees in the EU (Joint Research Centre, 2018).

The complexity of the transformation - the resultant of technological, infrastructural, organizational, market and legal changes as well as consumer behavior (Geels et al., 2017) meant that the conditions of this process became the subject of scientific discussion and public. The scientific discussion focuses mainly on defining the concept of energy justice (Jenkins et al., 2018; Sareen, Haarstad, 2018; Williams, Doyon, 2019), while the public one – around

practical solutions and scenarios for the development of the industry and related regions (Alves et al., 2018; World Bank, 2018). In Poland, the scientific discussion revolves around coal mining and the importance of coal for the functioning of the national energy system (Kamiński, 2009; Jonek-Kowalska, 2015; Rybak, Rybak, 2016).

The article presents a research method enabling social assessment of barriers and determinants of the employment restructuring process in the mining industry under the just transition mechanism. This subject is a difficult research area, because the speed and deepening dynamics of changes cause overlapping of various elements. The subject of the method is the diagnosis of barriers and determinants of employment restructuring under the just transformation mechanism, including such issues as: assessment of the instruments proposed to be used to manage surplus employment, effects in the area of local economy and economy, effects in the area of natural environment, specific local problems ( e.g. economic, social), as well as an indication - based on experience - of other instruments to mitigate the effects of restructuring as part of a just transition. The method was verified in pilot studies carried out in mining communes. The obtained results should be treated rather in terms of demonstrating the possibilities of the method itself than as a real picture of the situation.

As a result of the economic transformation of mining sub-regions, entire value chains will be liquidated or their current profile of activity changed (Magretta, 2014; Cedillo et al., 2006)<sup>1</sup> in which workplaces focused on coal mining and related companies currently operate. Closing mines will be accompanied by a change in the production profile of mining-related companies, which will lose their existing customers for their products and services. In order to support the diversification of the activities of companies from the mining and mining-related industries, it will be necessary to implement the necessary production and logistics investments contributing to changing the profile of activity, introducing new products, services, processes or gaining new markets, as well as maintaining or creating new jobs that will enable employment for people leaving from declining sectors.

In connection with the long-term goal of carbon climate neutrality adopted by the European Union by 2050 (Komisja Europejska, 2019), the Śląskie Voivodeship faces a huge challenge to carry out a just transition (Kiewra et al., 2019; McCauley, Heffron, 2018)<sup>2</sup>, which will require changes at the social, economic and technological level as well as the transition from carbon-intensive industries and energy sources to clean energy technologies.

In order to mitigate the effects of the energy and socio-economic transformation, including the liquidation of employment in the mining sector, it will be necessary to provide by 2030 almost 82,5 thousand new jobs, including those working in mining-related companies (Umowa społeczna..., 2021). The effects of actions taken in the process of just transformation of the

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<sup>1</sup> The value chain is the sequence of activities undertaken by a company to develop, manufacture, sell and deliver a product and then provide after-sales services.

<sup>2</sup> A just transition is a process of systematic and gradual changes which, in the long perspective, will allow the region's economy to be based on modern, environmentally neutral industries. Approximately one million people working in mining and mining-related industries will be directly affected.

region will be felt mainly in the mining sector, but will also be noticeable in sectors requiring deep restructuring, such as energy, metallurgy, chemical, mineral, machinery and transport.

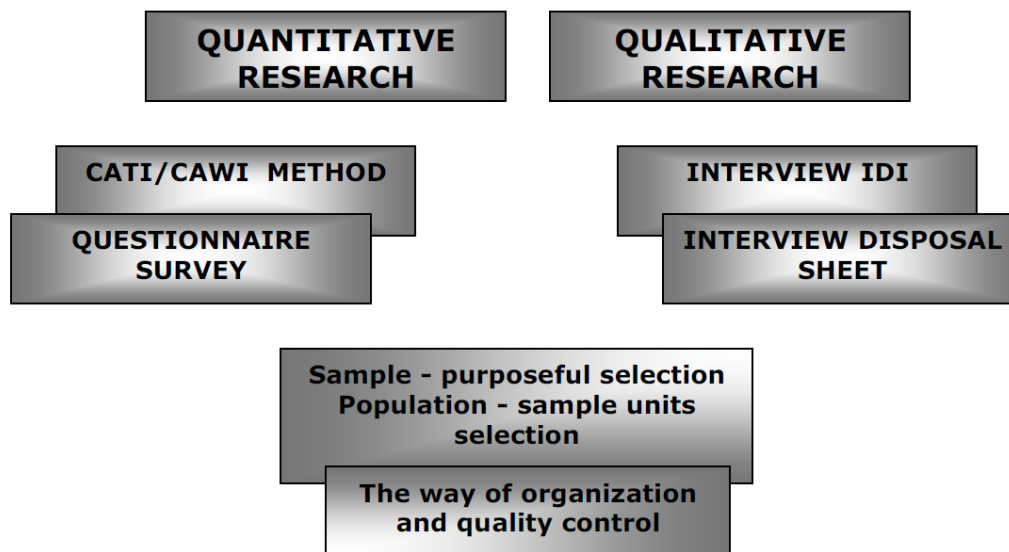
In order to mitigate the socio-economic consequences of the transformation of the region, it is necessary to prepare the key stakeholders of the transformation process for the upcoming changes, establish and maintain permanent cooperation between employee organizations, employers' organizations, economic self-governments and scientific and research institutions, systematically inform local communities of mining subregions, and support the process of managing the socio-economic transformation. One of the challenges will also be the proper functioning of social dialogue as the basis for effective problem solving. The subject of social dialogue is the joint shaping of professional relations, working conditions, wages, social benefits, as well as other issues of economic policy that are of interest and competence to all parties, as well as relations between partners and their mutual obligations. Dialogue, however, allows for the search for a practical consensus and balanced decisions, especially in such an important topic as transformation, which facilitates their social acceptance.

In view of the problems described above, it is also important to correctly define the term transformation, which will be used in all analyses, research and expert opinions. The term transformation has its origin in Latin – "transformation" and means conversion – regarding to social, economic, political, technological or IT areas. The term transformation is commonly synonymous with another term, which is change. It is significantly rarely associated with the term development or progress (Lipiński, 2017).

In such a context, it should be noted that the term transformation is perceived as more complex and, at the same time, narrower than the term change mentioned above. On this basis, it should be concluded that known transformations are changes, but not every change will be a transformation. This is how the term is perceived by R. Lipiński, who at the same time defines the term change as follows: change is any noticeable modification of any element of reality. Meanwhile, transformation in its source should be perceived as a non-trivial and intentional process of changing one fragment of the environment implemented at a given time, which is designed to create a new and sustainable state of the environment (Lipiński, 2017).

## **2. The social diagnosis method of assessing the barriers and determinants of the hard coal mining employment restructuring process**

The purpose of using the method is to obtain information on the social perception of the employment restructuring process in the mining industry, taking into account the phase of design, implementation, monitoring and impact assessment for the industry and local communities.



**Figure 1.** Social assessment diagnosis method of employment restructuring process.

The method of researching the social perception of the hard coal mining employment restructuring process, due to the specificity and complexity of the issue under consideration, uses various, mutually complementary methods and techniques of social research (Figure 1):

- quantitative evaluation studies – which include: a survey, a survey technique (CATI/CAWI), which is a technique of collecting information consisting in filling in questionnaires by the respondent himself, usually with a high level of standardization. CAWI (Computer Assisted Web Interview) and optional CATI (Computer Assisted Telephone Interview) will be used, if necessary, to supplement the study. However, the basic method will be a survey carried out via the Internet (Batorski, Olcoń-Kubicka, 2006). The CAWI research technique is an interview conducted by receiving a questionnaire or survey via the Internet and completing it online. It is currently one of the most popular and dynamically developing methods of scientific research. Thanks to the sense of anonymity and the possibility of participating in the survey at a time convenient for the respondent, it allows you to collect reliable data. A feature of CAWI research is also the fact that we are sure of reaching a specific target group, which was extremely important from the point of view of this research. This type of survey also allows you to eliminate the "pollster effect", i.e. the influence of the person conducting the survey on the answers given, which is of great importance for the reliability of the results obtained.
- qualitative research – in the study of problems as complex and difficult as phase evaluation and effects of the employment restructuring process in the industry, it was considered that better results would be obtained through an in-depth analysis of fewer cases than a superficial analysis of a larger number of cases. Therefore, it was considered necessary to use a qualitative method. The most adequate – in relation to the

planned group of respondents – is the technique of in-depth, individual interview, often used in the case of diverse categories of respondents, especially difficult to reach – specialists, decision makers and people geographically dispersed. Individual in-depth interviews will be conducted based on a list of problem questions, containing areas of issues to be discussed (research tool).

The purpose of quantitative research is to assess the impact of actions taken in the field of employment restructuring on the immediate environment, which include:

1. Social assessment of the impact on the condition of local communities and the local economy.
2. Evaluation of instruments used at the local level to mitigate social and economic effects.
3. Specific local problems, including positive phenomena (e.g. social, economic, environmental) related to the course and results of restructuring.

The tool used for quantitative research is a questionnaire covering four thematic blocks:

1. Factors determining the need for economic transformation.
2. Financial preparation of the region for economic transformation.
3. The impact of the closure of mining plants on the local environment, e.g. entrepreneurs, labour market.
4. Anticipating and mitigating the possibility of negative social consequences related to the process of closing mines and protecting employees from dismissal.

One of the most important issues to be examined (questions in the questionnaire) is the assessment of the instruments used to mitigate the effects of employment restructuring in terms of their adequacy and effectiveness, as well as the sustainability of the achieved results. It is worth noting that the studies carried out so far have not focused on a comprehensive assessment of the solutions applied from the point of view of the support beneficiaries themselves.

In quantitative research, the proper population of respondents are representatives of local government authorities, labour market institutions, local economic self-government institutions and local development agencies, i.e. people (sample unit) with knowledge about the effects of industry restructuring for the poviats. Due to the spatial area of the research (poviats where business entities of the restructuring industry were or are located), significant diversity of the population of research participants (knowledge about the effects of restructuring) and the substantive scope of the research (social, economic and environmental issues at the local level), purposeful selection of the research sample, taking into account the following criteria:

- spatial,
- knowledge and experience.

The purpose of the qualitative research, to which the article is devoted, is to assess the course of employment restructuring in the hard coal mining industry (design, implementation, monitoring phases together with the instruments used) and its effects in the economic, social and environmental dimensions.

The list of topics covered in the planned in-depth interviews includes the following:

1. Is the EU energy and climate policy the only factor determining the need for economic transformation of mining communes and poviats?
2. What may be the key challenges for mining communes resulting from the departure from hard coal mining?
3. Is it possible to plan a complete departure from coal mining in Poland?
4. What may be the most important areas of intervention to minimize the socio-economic effects resulting from the departure from hard coal?
5. Do the sector diagnoses on the basis of which restructuring programs are developed cover all functional subsystems (management, production, marketing and sales, logistics, human resources, occupational safety, finance)?
6. Are alternative diagnoses of problems and needs taken into account?
7. What factors influenced the restructuring of the sectors?
8. How is communication with stakeholders about the restructuring process in terms of problems and needs carried out?
9. The impact of economic, political, economic external (national, European, global) and internal conditions on the objectives and instruments specified in the restructuring programs of the sectors.
10. Factors inhibiting and stimulating the process of employment restructuring in the mining industry in Poland.
11. Ways of agreeing sector restructuring programs with stakeholders.
12. Whether and what negative effects may be caused by the restructuring activities carried out?
13. Ways to eliminate the negative effects of restructuring processes in the coming years.
14. Is there a sufficient level of support in the region in terms of managing the process of socio-economic transformation of the region?
15. Is there a sufficient level of social awareness in the region about the process of energy and socio-economic transformation in the region?
16. Has an analysis of the level of preparation of the key staff to carry out restructuring processes been carried out in the region?
17. What are the factors that inhibit and stimulate the process of restructuring the mining industry?
18. Is there a negative experience of previous restructuring in the region causing resistance to change?

The research sample for qualitative research will be selected purposeful (Stupnicki, 2015), and the main criterion will be the knowledge of the respondents, resulting from participation in design, programming or executive (implementation, monitoring) restructuring processes. The participants of the research are representatives of: government administration,

at the voivodship level, enterprises or groups of enterprises in the industry, corporate organizations (associations, associations), industry/regional structures of trade unions.

In the selection of respondents, the snowball method will be used, which consists in recruiting participants by other participants (Castillo, 2009). The priority in their selection will be comprehensive knowledge of the restructuring process. Conducting individual in-depth interviews requires knowledge of the researched issues. Therefore, conducting the interviews will be entrusted to competent persons – who know the issue of restructuring a given industry or have been trained in this field.

The general characteristics of the research used in the model of social assessment of barriers and determinants of the employment restructuring process are presented in Table 1.

**Table 1.**

*Purpose and sample of methodology that enables carry out barriers and determinants diagnosis of social assessment of the employment restructuring process*

	<b>Quantitative research</b>	<b>Qualitative research</b>
Purpose	Impact evaluation of the undertaken restructuring activities on the immediate environment	Evaluation of employment restructuring in the industry (design, implementation, monitoring phases along with the instruments used) and its effects in the economic, social and environmental dimensions
Sample selection criteria	Spatial – 28 poviats where business entities of the restructured industry were or are located (with a significant impact on the local economy). Competence - knowledge and activities of experts to mitigate the effects of industry restructuring at the local level	Knowledge resulting from participation in design, programming or executive (implementation, monitoring) restructuring processes
Study population	These are people with knowledge of the effects of industry restructuring for the poviat, representing: <ul style="list-style-type: none"> <li>– local government authorities,</li> <li>– labour market institutions,</li> <li>– local economic self-government institutions,</li> <li>– local development agencies</li> </ul>	Representatives: <ul style="list-style-type: none"> <li>– government administration at the voivodeship level,</li> <li>– enterprises in the industry,</li> <li>– industry organizations (associations, associations),</li> <li>– sectoral/regional trade union structures.</li> </ul>

Source: Own elaboration.

### 3. Results of the application of the method

#### 3.1. Research assumptions

In order to determine the social assessment of the barriers and determinants of the employment restructuring process under the just transition mechanism, individual in-depth interviews were conducted in the third quarter of 2022 with a group of 10 experts. According



to the adopted research assumptions, these are people with long work experience and life and professional experience. The selection of experts for the interviews was dictated primarily by the purpose and problem scope of the interview scenario developed for the purposes of the research and the complexity of the questions included in it. In this light, only the indicated persons – as demonstrated by the pilot study of the research tool – could fully refer to the issues and problems posed in the study. In the research, the method of direct interview was used, carried out with the tool of the interview sheet and technique CATI (Babbie, 2019).

After pretesting, which was carried out on a sample of three experts, the interview sheet consists of three questions regarding the characteristics of the respondent, 11 basic, open questions. Questions relating to the characteristics of the respondent concerned:

1. respondent's gender,
2. workplaces,
3. type of work performed.

The main questions – as indicated earlier – included issues related to:

1. factors determining the need for economic transformation,
2. financial preparation of the region for economic transformation,
3. the impact of the closure of mining plants on the local environment, e.g. entrepreneurs, labour market,
4. anticipating and mitigating the possibility of negative social consequences related to mine closure process and protecting employees against dismissal.

As part of the pretesting, the following elements of the questionnaire were verified:

1. technical correctness: analysis in terms of transition rules, logic and order of questions asked, instructions for interviewers, etc. (technical notes),
2. linguistic correctness: analysis in terms of the complexity and logic of sentences, comprehensibility of the used vocabulary and abbreviations (language and editorial comments).

Based on the comments and opinions obtained in the pretesting, the structure of the interview sheet was clarified and questions were unified in terms of language. As a result, a research tool was obtained that was technically and linguistically correct. This tool was used for the proper research as a source of research material for analyses.

The results of the survey were developed with a division into previously adopted problem groups, according to thematic blocks.

### **3.2. Description of the research sample for the interview**

GIG address data was used to construct the research sample, on the basis of which a list of over a dozen institutional experts was prepared, who were selected as survey respondents. Everyone of the respondents received a letter inviting them to participate in the study, which was additionally arranged through a telephone conversation. Out of a sample of

10 experts, all accepted the invitation to participate in the research. In total, the interview sheet contains three personal data questions and 11 extended open questions.

The rich analytical material obtained from expert interviews in the first phase of the work was put in order. In the second stage of work, its transcription was made. In the third phase, the acquired cognitive material was corrected and edited. Recommendations were developed on the basis of such cognitive material and conclusions summarizing the results of the study.

The distribution of the sample according to the following criteria is presented below: gender, type of work performed, place of work, commune/powiat.

Local experts (institutional leaders) representing deeply diverse social environments, professions and professional experience were invited to participate in the expert interviews. When building the research methodology, it was assumed that the experts would have higher education, be characterized by extensive life and professional experience, be recognized in their socio-professional environment, and directly or indirectly create the socio-economic image of mining communes through their profession.

The target sample of experts from the surveyed mining communes by gender, carried out in the research, was as follows: three interviews were given by women (30,0%) and seven by men (70,0%). All experts participating in the research held managerial positions.

Analyzing the distribution of the surveyed people according to the criterion of the place of work, in relation to the commune - in alphabetical order - they represented: Bytom, Jastrzębie-Zdrój, Rybnik, Rydułtowy, Tychy. According to the administrative unit criterion, the experts represented the following poviats: Bieruńsko-Lędziński, Bytom, Jastrzębie-Zdrój, Rybnik, and Wodzisław.

In total, 10 complete and acceptable due to the methodological correctness of expert interviews were obtained in the research, the results of which are presented in the discussion below.

### **3.3. Findings – discussion**

The first question addressed to experts in the above cognitive area was the question about the factors determining the need for economic transformation of mining communes and poviats. The impact of the EU energy and climate policy on Poland's decision to abandon coal-based energy policy was considered an important factor, but not the only one. In their assessments, the experts recognized that the systematic increase in the cost of coal mining, the degradation of the natural environment and the depletion of minerals were equally important factors that influenced the decision.

In the next question, the experts faced two issues. The first addresses the issue of the possibility of planning a complete departure from coal mining in Poland. The second focuses on diagnosing problems and needs when developing industry restructuring programs.

First of all, experts' opinions were dominated by the conviction that the decision the departure from hard coal mining, in the context understood so far, is a foregone conclusion. This view was even stronger expressed by one of the experts who stated that re-profiling the energy policy of our country is possible, even necessary. In fact, we have no turning back from this change. However, it must certainly be reliably and comprehensively planned. In other assessments, experts stated that it is desirable to plan the process of completely moving away from coal mining in Poland. However, in this perspective, they decided that basing the national energy policy on renewable energy sources is unrealistic. Perhaps in the distant future such changes are possible, but currently experts state that in Poland there will be a need to diversify sources guaranteeing energy security. The key challenge in the area of source differentiation will be the need to have appropriate technologies related to their financial development. In a pessimistic assessment, experts state that currently Poland is not at all prepared to develop alternative energy sources to coal. As one of the experts notes, "Abandonment of the coal economy is economically unjustified at the moment. We are a region based on coal deposits. It is possible to use more ecological solutions related to :with coal. Utilization of methane deposits for energy production. The use of modern solutions related to the use of modern, ecological solutions based on coal combustion equipment, e.g. the use of filters". The sector of new energy sources is just developing and can only draw on the experience of other European Union countries in this development.

Another expert states that "nuclear energy is a stable source of electricity, and the ability to store nuclear fuel for a long time improves the energy independence of the country. Coal energy will remain the pillar of the Polish economy, while a nuclear power plant that does not emit CO<sub>2</sub> will allow Poland to achieve the EU's climate goals European".

In conclusion, it can be said that in the perspective of the passing time, Poland will move away from coal-based energy, if not completely, then probably to a large extent. This will be influenced by the EU policy as well as the awareness of the decreasing hard coal resources each year.

It is worth paying attention to the diagnosis of problems and needs when developing industry restructuring programs. Experts say that this diagnosis – if carried out – is not enough. One of the experts clearly states that "The developed industry restructuring programs are not preceded by a diagnosis of problems and needs". All experts agreed that such diagnoses should be carried out by the government in cooperation with local governments and residents.

The next question concerned the possibility of implementing economic transformation in mining communes and poviats in the coming years. Expert opinions were dominated by the conviction that the economic transformation is already being successively implemented as employment in mining plants is falling and coal production is decreasing. It was emphasized that this is a long and costly process. It is worth quoting the statement of one of the experts, in which he says that "The economic transformation in Upper Silesia has been going on for years, and according to the WWF Polska Foundation, the mining sector employs less than

4% of employees in the province. Currently, the right questions are not about whether there is a possibility (it is already happening), but how to ensure a sense of security and real alternatives to earn money for residents, and energy security for the country".

The next question concerned the positive and negative effects resulting as a consequence of the process of economic transformation. The opinion of experts prevailed that the economic transformation would contribute to the improvement of the environment and change of the economic model. Areas of concern among experts were: rising unemployment, impoverishment of society and social unrest. In order to limit the negative effects of the transformation process, experts agreed that it should be well planned in consultation with local governments and citizens.

The consequences for mining communes and poviats, as a consequence of the economic transformation process, will be diverse. However, the most important and common for all is the maximum use of measures to minimize the social effects of transformation related to the liquidation of hard coal mining, and thus the loss of thousands of jobs in the mining industry itself, as well as in the branches directly and indirectly related to mining – the chain of dependence. Social impacts are closely related with activities aimed at remodeling the economic sector. There is still the problem of degraded post-mining areas and the country's energy security - the transition to RES.

In this area, experts emphasize that the key challenges resulting from the abandonment of hard coal mining that mining communes will face will be:

- support for communes where mining plants will be closed, appropriate to the scale of changes caused by the transformation,
- need to create new alternative jobs to those that are disappearing in transformed mining,
- need to support families living in the mining industry,
- support in the area of development of post-mining areas.

Also in expert assessments there is a tendency to indicate solutions that can minimize social and economic losses of mining communes as a result of economic transformation. In the foreground in the sphere of actions taken, experts indicate the need to provide miners and their families with work that would allow them to maintain the current level of life security. In further assessments, the experts pointed to the following actions:

- preparation of programs and strengthening of sectors of the economy alternative to the mining industry, including production enabling easy employment for the so-called underground workers,
- recultivation of post-mining areas in order to prepare investment areas along with the transfer of funds to communes for this purpose,
- strengthening all available reliefs for entrepreneurs in order to encourage them to conduct business activity in mining communes,

- promoting among entrepreneurs the idea of obtaining measurable investment benefits that balance outlays related to the preparation of land for investments or training future employees.

The next question referred to the areas of intervention minimizing the socio-economic effects. Experts clearly emphasized the following key strategic fields of intervention for the transformation:

- creating alternative energy sources to coal,
- reclamation, revitalization and development of degraded post-mining areas,
- searching for opportunities to create new areas of economic activity on the basis of supporting the SME sector already operating in the transformed areas, as well as large and large companies,
- creation of conditions by the local government for locating new investors and companies from the business environment in the area of transformed mining communes,
- opening up to innovative and experimental solutions in the area of R&D - e.g. related to the use of waste, geological resources, etc.,
- guaranteeing jobs for redundant miners through re-industry, training, striving for changes in the culture and social awareness of the inhabitants of the transformed areas (at present, an economic monoculture is established in this society, shaping a specific culture of life, choosing well-paid work only in mining, lack of involvement in setting up own companies often associated with a family model based on a non-working woman),
- skilful reaching people's consciousness with information that there is an alternative to coal.

In conclusion, the experts stated that there is no need to discuss the job prospects for current miners at present. The transformation process will be a long-term one. In this process, it will be very important to properly direct the development of the young generation (19-25 years old), so that they understand and find themselves in a new perspective, not related to mining.

In your opinion, is social dialogue conducted in mining communes and poviats in Poland in order to carry out the process of economic transformation? This is another question asked by experts in research. According to experts, there is no social dialogue with local governments, and one indicates the reason – "both sides do not want it". The experts unanimously believe that all stakeholders should be involved in the dialogue, starting with local governments, trade unions, mining companies and residents. According to the expert, the most important thing is the appropriate management of human resources, finding an alternative to the hard coal mining sector, preventing the social and economic impoverishment of the transformed areas. In the opinion of the expert, it seems necessary and logical to develop a plan for the gradual phasing out of the hard coal mining sector. In the opinion of experts, broad social participation based on social dialogue is an obligation resulting from the key assumptions of the

Transformation Mechanism. It is a necessary condition in the process of obtaining funds from the transformation mechanism.

In conclusion, based on the assessments and expert opinions, it should be stated that local governments from mining communes face a big challenge and numerous new additional obligations aimed at preparing their inhabitants for the inevitable transformation processes. In the aftermath, it will be extremely important for the inhabitants to face the challenge of trusting local government authorities that the transformation will create new ones for them and better development opportunities. As one of the experts emphasizes, I would consider the partnership of both entities to be the most important in social dialogue. After all, every interested party should have the opportunity to comment and comment, whose voice would be important in making strategic decisions.

In your opinion, are mining communes and districts in Poland prepared to move to a new model of economic development not based on mining? What factors may influence the process of economic transformation of mining communes and poviats? Are changes as a result of the process of economic transformation of mining communes and counties inevitable? These are more questions asked by experts. In their answers, the experts concluded that the communes are not prepared for this process. According to most experts, this is due to the limited activity of mining communes and districts in the area of transformation and the lack of alternative sources of raw materials. An important element of preparation for a new model of economic development not based on mining is financial support – governmental and EU.

The next question referred to the factors that may affect the process of economic transformation of mining communes and poviats. Experts clearly emphasized that the pace of changes and the involvement of the state will be of key importance. Equally important factors include:

- providing transport infrastructure - road and railway - of the transformed region,
- good planning and consistency in action,
- changing the professional mentality among employees of the mining industry and their families,
- friendly approach to investors - support, tax reduction, legal regulations,
- creating long-term urbanization and infrastructural plans.

The last question addressed to experts in the study addressed the issue of the inevitability of changing the model of economic development of mining communes and poviats as a result of the transformation process. Experts have unequivocally settled this issue, stating that change is inevitable. They justified their assessments as follows. Change is inevitable, municipalities must follow the times and develop, and so they will remain stagnant. Changes are inevitable, if only because of depleting coal deposits and increasing costs of its extraction. A change in the model of economic development of mining communes and counties is inevitable due to the possibility of developing post-mining areas, the emergence of new companies, new industries and thus the departure from the mining monoculture.

## 4. Conclusions

Due to research results described above, it seems that all the expert assessments and opinions expressed confirm the thesis that if the changes related to the just transition process cannot be stopped, then one must learn to take advantage of it. The view expressed above regarding the process of just transformation, which implies both economic and social challenges that are important for mining communes, among which the following deserve special attention:

- increasing the importance of the participation of mining communes in making government decisions,
- more friendly conditions shaping cooperation,
- the need for mining communes to implement projects based on local mobility, adaptability and social sensitivity,
- the need to increase social awareness related to mining in mining communes with responsibility for the just transition process,
- disappearance of state policies in the implementation of social functions in the phase of ongoing changes and taking them over by the local society.

In addition, based on the assessments and opinions of experts, it seems that in the perspective of the inevitable occurrence of the transformation process, it may be important for local governments, and in particular mining communes, to promote actions for an evolutionary, not short-term shift from coal-based energy to low-emission sources - striving to make it a multi-stage and long-term process. Equally important may be the pursuit of solutions according to which the principle of introducing funds directly to individual communes for the implementation of the just transformation process will be adopted. Consideration should be given to the need for local governments, including mining communes, to obtain state intervention appropriate to the scale of the challenges, while equipping them with reliable and comprehensively planned proposals for transformational activities limiting their spontaneity.

Assumptions and actions related to the process of just transformation should become the basis and the essence protecting mining communes in this process against the occurrence of a short-term socio-economic shock. It should be a long-term process, characterized in the first phase of implementation by a very extensive social information campaign raising awareness of the community living in mining communes - how their future is shaped in this process - what awaits them? Expert assessments clearly show that the achievement of such goals as: conscious acceptance of the need for change, acceptance of the future new socio-economic order in mining communes, acceptance of the goals of just transformation will probably reduce or even significantly limit the effects of the economic and social collapse that may occur in mining areas.

Experiences related to the restructuring of the mining industry evoke unpleasant experiences resulting from unprepared actions, carried out in a proverbial hurry, liquidation of mines without planning the future of the areas where they conducted business activity (Lipiński, 2017). According to experts, these are among the most serious concerns related to the just transition process. As one of the experts notes, one should be aware of the long-term nature of the change process.

If the socio-economic shock scenario materializes, it should be stated that its source will be unprepared in accordance with the program and key assumptions, proceeding in a spontaneous and uncontrolled way, transformation. Counteracting these shocks should primarily be achieved by maximally strengthening the alternative sectors of the economy, so that they are ready to absorb the employees of the coal sector. As experts note, the justice of the transformation process - clearly and precisely defined goals, challenges and needs - is to serve the following purposes:

- protection of transformed areas against possible tremors,
- the evolutionary transition from a high-carbon to a low-carbon economy,
- a smooth and controlled departure from employment in the mining industry to shifting qualified personnel to sectors such as: information technology, modern business services, logistics, etc.,
- optimizing the re-adaptation of post-mining areas.

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