



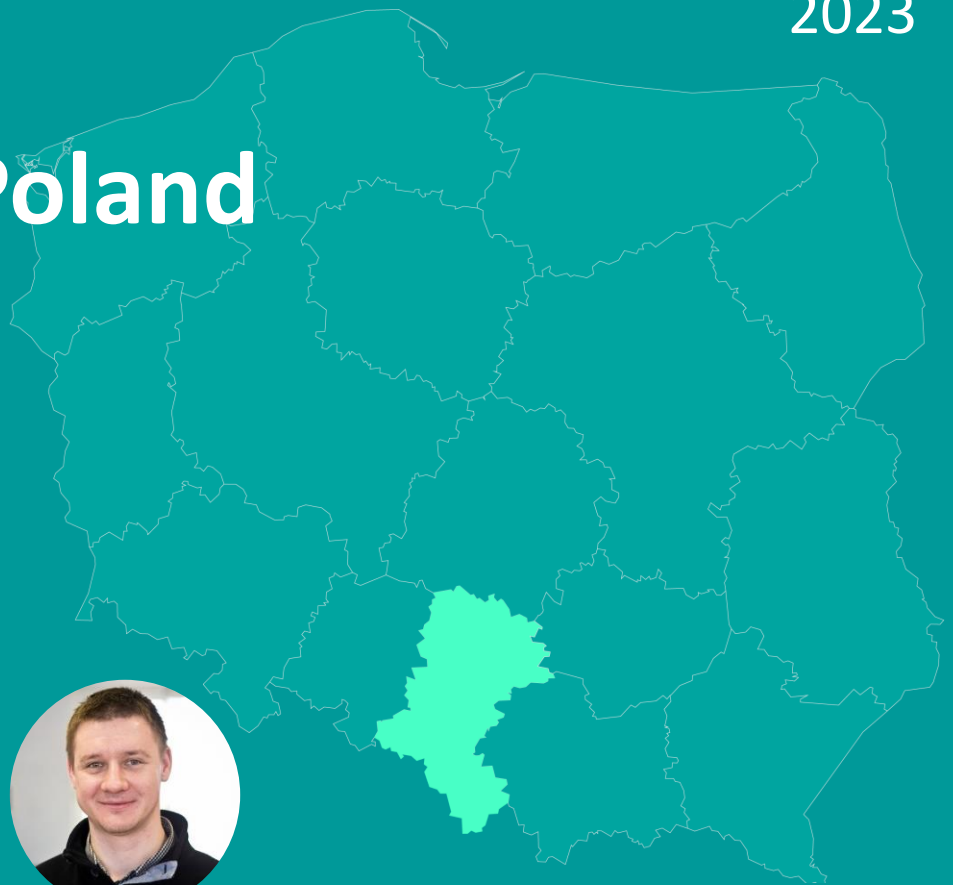
ENTRANCES

ENergy TRANsitions from Coal and carbon: Effects on Societies

POLICY BRIEF

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ENTRANCES PROJECT

ENTRANCES (ENergy TRANSitions from Coal and Carbon: Effects on Societies) is a three-year project funded by the European Union's Horizon 2020 research and innovation program. The project addresses the Social Sciences and Humanities (SSH) aspects of the Clean Energy Transition (CET) through the development of a theoretically based and empirically grounded understanding of cross-cutting issues related to social aspects of the transition in European coal and carbon-intensive regions and the formulation of a set of recommendations able to tackle these issues. To that end, 13 coal and carbon-intensive transition regions in Europe were studied using the same Multidimensional Analytical Framework (MAF), resulting in 13 case studies and an equal set of recommendations that reveal the complexity of the transition process and the impact in the daily life of local communities in its various dimensions.

EXECUTIVE SUMMARY

This policy brief was developed under the Entrances Project and focuses on the coal mining region in Poland – Silesia. It is the largest hard coal mining area in the European Union. Currently 19 out of 20 coal mines operating in Poland are located in this coal territory, which accounts for approximately 85% of the domestic hard coal production, including 100% coking coal. The Silesia province has been the largest consumer of hard coal in Poland in recent years. There are 4 large coal-fired power plants and 3 large coal-fired CHP plants operating in the region. In addition to coal mining, the metallurgical industry is widely developed there in connection with the steel and aluminum industries. The use of hard coal has a negative impact on the air quality in the region.

Over the last three decades, successive restructurings of unprofitable mining companies and the closure of subsequent mines have also had an impact on the socio-cultural dimension of the functioning of the territory. Two years ago, in May 2021, an agreement was signed according to which the last coal mine in Poland will be closed by 2049. As a result of disinvestment in the mining sector and related industries, the status of mining professions has been significantly devalued, which intensifies process of depopulation (emigration) and creates a number of tensions and generates numerous social, cultural and economic problems among communities traditionally associated with mining for generations.

Profound changes are affecting the cultural and identity aspect of inhabitants of the coal region. Work in mines has been a very important part of local identity for decades, shaping both the work ethos and other elements of culture, as well as determining the structure of the Silesian family and the social roles assigned to men and women.

Research has revealed, among others, that the inhabitants of Silesia experience strong stress due to the consequences of decarbonization as well as increased nostalgia for times gone by. Moreover, the most strongly presented coping strategy was related to the change of place of living.



INTRODUCTION TO THE CASE STUDY

The coal phase-out process and global economic processes resulting in the closure of subsequent mines and industrial plants linked to the mining industry are profoundly transforming the Silesian region, which thanks to its mining and industrial heritage not only owes the position of one of the economically strongest and most industrialized regions, but also constitutes a very important component of its local identity and culture. As a result of successive waves of restructuring, disinvestment and closing mines, negative social and - cultural phenomena are intensifying, such as increased emigration, negative birth rate and weakening attachment to the territory. New sectors of the economy are unable to absorb the workforce that once supplied industry and mining. This is partly due to the lack of skills matching, but also to a large extent due to the lack of motivation of the mining sector workers themselves to retrain.

With this case study ENTRANCES explores the challenges faced by coal region in transition, focusing on various socio-economic, socio-technical, socio-ecological, socio-cultural, socio-political, socio-psychological, and gender-related factors. It also examines the coping strategies that have emerged in recent years to address these challenges and explores the variables that have influenced the emergence of deterritorialization and the strategies that may drive reterritorialization using multidimensional analytical framework (MAF).

This policy brief aims to identify policies or policy combinations that would effectively restore territorial and community ties while promoting their transition to clean energy.

Key questions

Key Question1. What are the challenges faced by coal and carbon transition regions in different dimensions of change?

Key Question2. What are the emerging coping strategies and what policies could be more effective to address the identified challenges?



METHODOLOGY:

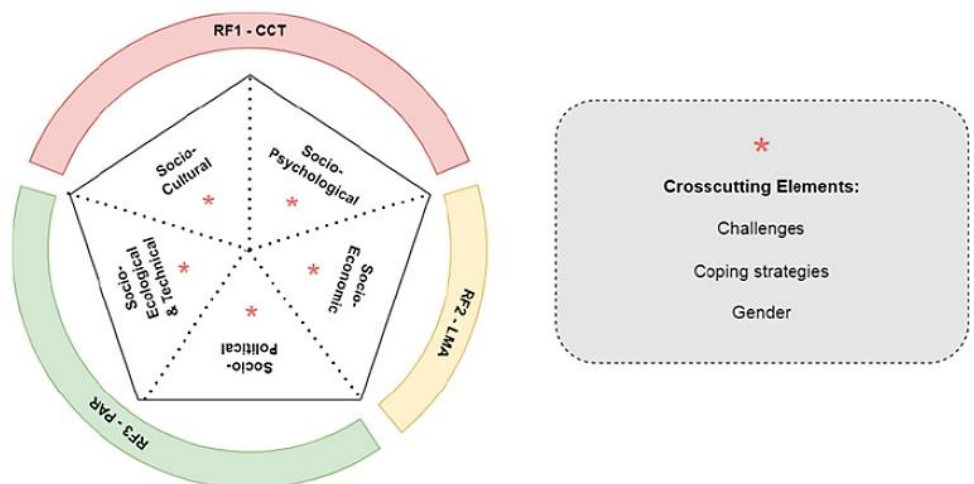


The ENTRANCES case studies were structured into multiple foci (Territorial Change, Structural Change and Clean Energy Transition) and respective units of analysis (Coal and Carbon Territory, Labour-Market Area and Political Administrative Region) to better address the scope of research. Additionally, a comprehensive Multidimensional Analytical Framework (MAF) consisting of five components: socio-cultural, socio-psychological, socio-economic, socio-ecological, and technical component, was adopted to study the complex and multidimensional dynamics in place.

Each component of analysis is supported by specific concepts and methodologies, as well as three cross-cutting elements: challenges, coping strategies, and gender dimension. The resulting challenges, as well as the gender dimension analysis, provide a very clear picture of the real situation in the region of analysis, accurately highlighting the problems related to the demographic, economic, social, cultural and political configuration. The initial results obtained from the different coping strategies generate new avenues for the discussion and recommendations presented in this policy brief.



Overview of the Multidimensional Analysis Framework: Research foci, components and crosscutting elements





CHALLENGES AND COPING STRATEGIES

CHALLENGE 1



Mining supporting companies

1

The process of mines closing means that companies cooperating with mining industry lose their sales market and may go bankrupt.

2

The companies cooperating with mining are not supported in transformation processes like hard coal mines.

3

Employees are in fear of liquidation of their workplaces, so they quit the company. The companies are at risk of losing employees in short time

RECOMMENDATIONS

Support for companies cooperating with the mining industry should concern:

- Changing the target industry of companies previously involved in the product and service development for the mining industry
- Assistance in opening up to new markets.
- Assistance in obtaining new qualifications for employees who will change their place of work.

Development of human capital and competences for the future in the region by:

- Developing appropriate mechanisms for reaching out to people who can retrain.
- Retraining employees at the stage of their employment in the mining industry to enable a smooth transition to another sector
- Assessment of potential and directions of infrastructure use after mines/power plants and preparation of post-mining post-industrial areas for new economic and social functions.

DISCUSSION

Many companies have been established and developed in Silesia, whose goal and source of income is cooperation with mines: commercial, service and consulting. While the government supports decommissioned mines, such companies are left to fend for themselves. Abandonment of coal mining in the country will, among other things, deteriorate the functioning of the cooperating companies by reducing their revenues. This, in turn, will force entrepreneurs to restructure, including reducing employment, searching for other markets for their products, and changing the structure of production and the profile of services provided. This situation will also affect the public payments that these companies make to the state treasury. It is possible that some of them will move their activities outside the country. Uncertainty of employees about their employment prospects is a serious stress for them.



CHALLENGES AND COPING STRATEGIES

CHALLENGE 2



Energy crisis – dependency on fossil fuels: hard coal and natural gas

The Polish energy system is still largely based on fossil fuels. In the clean energy transition, many households have already changed their heating system from hard coal to natural gas. At the same time, the processes of restructuring unprofitable mines are underway, which result in their gradual liquidation. The processes are not sufficiently coordinated, which means that in the winter a significant amount of coal, both for power plants and for heating houses, was imported from Russia. Natural gas has also traditionally been imported from Russia. After the Russian invasion of Ukraine, the Polish government decided to end the import of hard coal and natural gas from Russia. The effect of these decisions is the occurrence of a number of disruptions in the fuels market:

1

Shortages and difficulties in fuel supplies and their very high prices

2

The necessity of intervention hard coal import from unverified directions

3

Slowing down the transition to clean energy due to the temporary delay in the mine closure processes

4

The need to develop Poland's energy policy, omitting the transitional period involving the use of natural gas on the path to achieving a zero-emission economy

RECOMMENDATIONS

- Accelerate actions aimed at increasing the share of RES in the country's fuel mix and start work on the implementing nuclear energy in Poland.
- Establish lasting commercial relations with various suppliers of natural gas (including LNG gas) from various directions.
- Temporarily slow down the process of reducing the volume of coal production in the country and/or compensate for coal shortages on the domestic market with reliable import contracts.
- Increasing the energy efficiency of all sectors of the economy with a special focus on the energy needs of households (thermal modernization, energy recover).

DISCUSSION

The crisis in coal and gas supplies creates unrest in the region (as well as in the whole country) and uncertainty regarding further decisions regarding the closure of mines. Moreover, the unstable price of energy carriers and electricity hinders the investment processes of energy suppliers and consumers.



CHALLENGES AND COPING STRATEGIES

CHALLENGE 3



Demographic problems of the region (Aging and migration balance)

1

Cities in the Silesian Province are becoming depopulated

Many inhabitants are moving to other cities. Most young people are leaving Silesia and are not coming back because of gaining employment in the cities where they were studying.

2

The average age of the inhabitants of Silesia is getting higher and higher

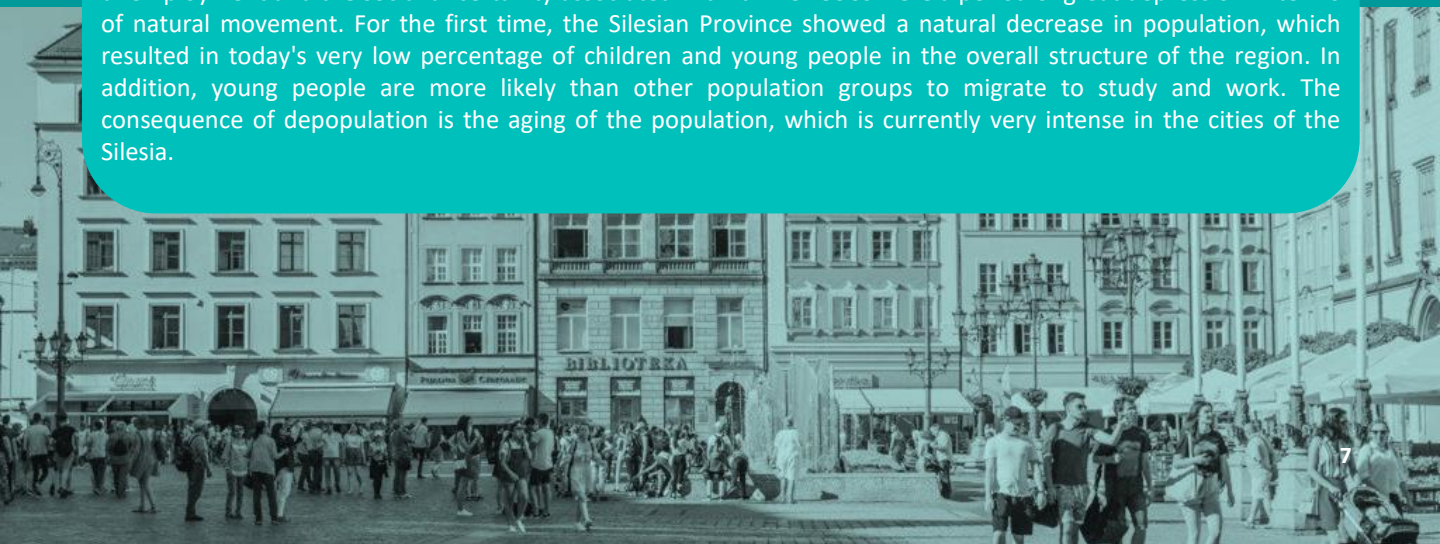
The ageing of population in the Silesian Province is one of the most advanced in the country. Many elderly residents find it difficult to cope with self-care problems on their own. It is not possible to stop the ageing of the population entirely. However, there is a need to increase the number of young immigrants in the region.

RECOMMENDATIONS

- Supporting the development of cities in the Silesian Province, which will limit emigration of young people.
- Supporting the elderly, inter alia, by building and maintenance of special urban housing facilities for the elderly with guaranteed help and care.
- Creating new jobs so that residents and immigrants can take up employment in the cities of the region.
- Supporting labour market participation of people of retirement age.
- Urban regeneration, e.g. by unlocking the resources of the National Recovery Plan.
- Preparing the welfare system for waves of migration (including foreign migration).

DISCUSSION

The Silesian Province is one of the most rapidly depopulating in Poland and the ageing of its population is one of the most advanced in the country. In 1988, the population of the province was close to 5 million; in 2035 it is forecasted to be only 4 million. This situation is the result of many components. Firstly, there are 'civilization factors': the trend towards lower birth rates, delaying the age of marriage, delaying the age of giving birth to the first child and having only one child. The 1990s also marked the beginning of economic transformation – unemployment and the social uncertainty associated with it. The 1990s were a period of great depression in terms of natural movement. For the first time, the Silesian Province showed a natural decrease in population, which resulted in today's very low percentage of children and young people in the overall structure of the region. In addition, young people are more likely than other population groups to migrate to study and work. The consequence of depopulation is the aging of the population, which is currently very intense in the cities of the Silesia.





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