

DIRECTIONS FOR IMPROVING REPORTS ON ENVIRONMENTAL COSTS BY MINING COMPANIES

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Purpose: Recent years have brought a very dynamic increase in the importance of the environmental aspects of the activities conducted by enterprises in the mining industry. This is mainly due to the currently binding legal requirements in the field of environmental protection, which impose a number of obligations on business entities, aimed at limiting the impact of activities on the natural environment, removing effects, as well as rehabilitating areas affected by this activity. In order to be able to fully manage the environmental costs incurred by companies in connection with pro-ecological activities, it is necessary to provide appropriate tools and enable people dealing with the above-mentioned issues to raise their qualifications. In the article, in addition to the literature review, an attempt was made to present the issues related to the reporting of environmental costs in the mining sector, both in terms of creating reports, classification of costs and the knowledge of employees dealing with the above mentioned issue and identification of areas requiring improvement. For this purpose, a specially created questionnaire was used, the results of which were also presented in the article.

Design/methodology/approach: The article presents the results of a survey on the awareness of environmental costs in people who deal with the above-mentioned costs. The test results are presented by means of graphs.

Findings: The most important problems related to environmental cost reporting by mining companies include: reporting only those costs that are required by law, insufficient knowledge of environmental costs among employees preparing reports, lack of a detailed classification of environmental costs dedicated to the mining sector. As part of the survey, problems related to reporting of environmental costs by mining plants were identified. They were mainly related to the knowledge of the concept of environmental costs by those responsible for reporting them and adequate training in the field of these costs. Additionally, the level of employee interest in participation in conferences and courses related to environmental costs was examined.

Originality/value: This article is dedicated to employees of the mining sector and students of mining faculties. The article presents a change in the perception of environmental costs incurred by hard coal mines as only negative, and the extension of environmental reports to include costs incurred, inter alia, for preventive measures and the use of questionnaire surveys as a method of measuring employees' awareness of environmental costs was proposed.

Keywords: environmental costs, management, mining, survey, environmental reports.

1. Introduction

Over the last several years, there has been a dynamic increase in the significance of environmental aspects observed in the activities of mining companies. This is mainly due to the currently binding legal requirements related to environmental protection, which impose on economic entities a number of obligations aimed at limiting the impact of their activities on the environment, removing consequences, and reclaiming areas affected by such activities. Due to the fact that mining companies are characterized by activities that strongly interfere with the natural environment, they are required to present data on costs incurred for the environment in the form of the so-called environmental reports.

Another significant aspect is the dependence of companies' value on their actions in favor of the environment. It should be noted that with the development of pro environmental awareness of companies, it has become a tool determining their value both on the domestic and global market, and thus companies are required not only to meet the economic objectives of their activities, but also to respect the laws of nature. Therefore, it is necessary to reliably present all environmental protection activities undertaken by companies. The implementation of the concept of sustainable development in a company requires, among other things, the creation of a financial information system on the environment, which will meet the needs of rational management of a company and the environment (Kryk, 2008).

Due to the fact that mining companies are, to a large extent, associated with activities that strongly interfere with the natural environment, in many cases, there are concerns about disclosing the actual amount of environmental costs for fear that these activities will be negatively perceived by society or even used in a manner unfavorable to the property of a given institution. At present, environmental reports prepared by mining companies contain required information pursuant to valid legal regulations. They are dominated by descriptions of undertaken pro ecological actions as well as charges paid for using the environment. Oftentimes, however, many facts tend to be omitted, such as those related to prevention activities within the conducted activity and ensuring safety to employees. In some cases, this is also due to the lack of legally structured system of classifying environmental costs, and the divisions used are based only on literature (Ferens, 2016; Szadziewska, 2006; Małecki, Urbaniec, 2014; Hansen, Mowen, Guang, 2007). A significant group of authors in their scientific publications, including: Piontek (1999); Miłaszewski (2009); Kamieniecka, Nóżka (2016); Famielec, Stępień (2005); Borowiec (2013); Jaruga, Szychta (1997); Kijewska, Bluszcz (2016); Paszkiewicz, Szadziewska (2011), draws attention to the need to prepare reliable and accurate environmental reports

As part of the work, a review of the literature on the environmental costs incurred by hard coal mines in Poland was carried out, which confirmed the need for further development of the concept, the procedure for creating environmental reports was characterized, problems related

to reporting these costs were presented, and the use of questionnaire surveys as a tool for measuring knowledge and employee awareness of the environmental costs they deal with.

2. Materials and methods

2.1. General characteristics of problems related to environmental costs in the mining sector – the concept of environmental costs

Both national and international literature provides many explanations of this concept. The definitions of environmental costs formulated by different authors can be divided into four groups (Dimitroff-Regatschnig, Schnitzer, Jasch, 2002; Ferens, 2016):

- definitions that restrict their scope to the environmental costs incurred by an entity in an operating activity,
- definitions including all environmental costs incurred by an entity as a result of its business activity and extraordinary events,
- definitions broadening their scope by considering the costs incurred during a product's life cycle,
- definitions based on the assumption that environmental costs should be interpreted as economic costs (explicit, hidden).

This means that, as of the date of this article, there is no concept that would strictly define which costs incurred by mining companies are environmental costs and which are not. Therefore, a necessity arises to create a reporting system that would capture, to the largest extent possible, all costs incurred by mining companies within the framework of a broadly defined pro-environmental activity. In addition, it is worth pointing out to the fact that many of these costs may be overlooked due to wrong interpretation of the term, which in turn emphasizes the need to raise awareness in this area among all employees.

When analyzing expenses that mining companies incur during their operations, it is possible to distinguish the following groups of environmental costs (Ferens, 2016):

- a. For environmental use:
 - water consumption and electricity,
 - disposal of waste and gangue,
 - operation and concession,
 - consumption of environmental resources,
 - transport of fuels and environmental raw materials,
 - groundwater discharge.

- b. For prevention:
 - consumption of fixed assets used for the prevention of environmental pollution,
 - monitoring of pollution levels,
 - training in efficient resource management,
 - operation of emission measurement equipment,
 - measurement of noise level concentrations in facilities,
 - introduction of acoustic protection system,
 - measurement of pollution from gangue dumps.
- c. For pollution reduction:
 - pollutant exports,
 - investments related to minimization of CO₂ emissions, etc.,
 - management of post-mining waste,
 - disposal and utilization of other waste,
 - methane accumulation,
 - damage caused by mining activities.
- d. For restitution:
 - emission of gases and dust into the air,
 - charges to an external entity for coal recovery,
 - subsidies for pro-environmental activities.
- e. For environmental management:
 - ISO training,
 - ISO development,
 - improvement of monitoring methods.

The environmental costs listed above are the most frequent charges incurred by companies in the mining sector as part of their environmental activities. In the case of mining companies, the most extensive group of environmental costs are those related to environmental use and prevention. Despite the relatively high level of specificity, it should be noted that the presented breakdown does not include all types of charges.

Among the environmental costs that are not included in the cited breakdown, it is also worth considering expenses for:

- improving employees' qualifications in environmental awareness,
- employees' participation in conferences, seminars, etc. on environmental issues,
- constructing installations for the economic use of methane,
- industrial use of coke-oven gas,
- investments in environmentally friendly materials,
- projects concerning the possibility of using mine workings to store waste,
- monitoring inactive workings,

- striving for maximum energy independence of mining plants and using alternative energy sources,
- reusing underground water,
- locating smoke dust in underground workings,
- reclaiming waste dumps and areas degraded by the activity of mining plants,
- participating in pro-environmental projects.

2.2. Legal conditions concerning the preparation of environmental reports

Pursuant to the Environmental Protection Act (Poniewski, 2018), an author of such a report (in the case of a team, the requirements apply to a team leader) is required to have graduated from at least first-degree (a bachelor's degree) or second-degree (a master's degree) studies, or from uniform master's studies, in the following fields of education:

- exact sciences like chemical sciences,
- natural sciences like biological sciences and earth sciences,
- technical sciences from the following disciplines: biotechnology, mining and engineering geology, environmental engineering,
- agricultural, forestry and veterinary sciences.

Another very important aspect concerning environmental reports is the specificity of the documentation in question. According to the Environmental Act, a correctly prepared report should, in particular (Poniewski, 2018):

- describe the planned project,
- characterize natural components of the environment within the range of the predicted impact of the planned project on the environment,
- describe monuments protected under the provisions on the Protection and Care of Monuments,
- describe predicted effects on the environment in the case of project's inaction,
- describe variants, taking into account the specific characteristics of the project or its impact,
- determine the predicted impact of analyzed variants on the environment, including the case of a serious industrial breakdown, as well as a possible cross-border impact on the environment,
- justify the variant proposed by an applicant, with the indication of its impact on the environment,
- describe forecasting methods applied by an applicant and the predicted significant environmental impact of the planned project together with possible time variants,
- describe predicted actions aimed at prevention, limitation or natural compensation of negative environmental impact, etc.

When making an environmental report, considering all the above elements is the first step to predict the initial magnitude of environmental costs.

2.3. Benefits of a robust environmental reporting system

Due to the lack of guidelines on how to report, the information contained in the first environmental reports was mainly qualitative and covered a limited range, resulting, for the most part, from the existing solutions of information systems of business entities (Paszkiwicz, Szadziwska, 2011). Among the factors that have an impact on the development of environmental reporting system, the following can be distinguished:

- increasing degradation of the natural environment,
- limited natural resources and the lack of possibilities for their renewal,
- assumptions of sustainable development policy as a possibility of further economic development,
- continuous development of international regulations and standards related to environmental protection and their strict enforcement,
- environmental activity as a new measure of company value,
- increasing environmental awareness of the public, and social demands placed on businesses regarding their impact on the local environment,
- development of reporting guidelines for many organizations,
- development of management systems that incorporate the pursuit of both the long- and short-term environmental objectives in the strategy of entities.

Despite the change in attitude towards the notion of environmental costs, it is still possible to observe a reluctance to share the discussed type of information. The factors responsible for this state of affairs may be as follows:

- lack of unification of legal acts normalizing aspects of environmental reporting,
- misconception of low interest in a given type of information among external stakeholders,
- management's assessment of activities related to the preparation of this information as a costly process that requires great effort and commitment from employees,
- conviction of the management about the lack of benefits and impact on the demand for services provided by a given company,
- deficiencies in systems supporting the reporting system,
- fear of this information being used to tarnish the reputation of an institution, particularly by competitors, and of potential litigation,
- fear of customers and other stakeholders turning away from a company,
- belief that a company has taken sufficient action and that it has a positive image in the profession,
- dependence of actions taken by owners on the actions of competitors.

2.4. Surveying as a tool to improve the environmental cost reporting system in mining plants

It should be remembered that apart from using the most extensive reporting systems, equipping employees with modern tools and computer programs, and even continuous updating of legal regulations governing environmental aspects by competent authorities, the most important factor is the man himself, on whose shoulders rests the preparation of such documentation. On the other hand, an entrepreneur, and therefore an employer, is required to provide employees with all necessary means to work with environmental issues and the possibility of continuous extension of knowledge in this field.

Currently, for mining companies, one of the biggest challenges turns out to be the cooperation between employers and employees. This is due to the following reasons, e.g.:

- employers focus solely on profit from the employee's actions,
- employees are afraid of employers,
- employers believe that they have done enough in providing adequate facilities for their employees,
- employees are reluctant to share their opinions on a given topic due to fear of unnecessary employer-employee conflict,
- lack of employer's involvement in employees' activities and subsequent criticism of their actions (employers often leave the freedom of action to their teams, while requiring the implementation of tasks according to their ideas),
- work under constant time pressure both for employees and employers,
- employees are reluctant to perform the tasks entrusted to them,
- employees are assigned tasks while being imposed an impossible deadline for completion,
- prejudices between employees and employers,
- lack of mutual respect.

The reasons for difficulties in the relationship between these two positions, outlined above, also affect the quality of a company's environmental documentation. Surveys can be a helpful tool for investigating (and identifying) reporting issues. The use of questionnaire methods or surveys successfully fulfills its task in companies, for example, in the case of analyzing the issue of employer-employee relations, because their main advantage is anonymity. With regard to relationship issues, material from such studies relates to many aspects of an organization. Also, it provides data on the relationship between an employee and an employer. Questions about management include information flow, delegation of tasks, training opportunities, clarity of criteria for rewards and reprimands. Employees are asked about managers' competencies and skills. Such questionnaires also include items that deal directly with communication and team relations as well as trust that employees have in their supervisors.

Based on the experience of companies that have introduced questionnaires, for example, for the purpose of controlling relations among employees, it is proposed to create a questionnaire system related to the widely understood issue of environmental reporting. The task of such questionnaires would be to control the following issues:

- opportunities and willingness to participate in additional trainings, courses, etc., in order to broaden skills in environmental aspects,
- possibilities and willingness to participate in conferences, seminars, symposia in order to share developed methods and broaden knowledge,
- previous qualifications and internship in the environmental field,
- tools facilitating work with environmental costs and environmental reports,
- knowledge of people responsible for preparing reports at a given site,
- help received while preparing reports,
- computer programs used,
- cooperation with a person responsible for collecting information on the report in a given department,
- completed reports.

In order to conduct research aimed at examining the knowledge of the environmental costs of employees of hard coal mines, a questionnaire was used, which was anonymous for all respondents. Tables 1, 2, and 3 present in detail questions and a response scale selected for them. The questionnaire was divided into 2 parts. Part I relates to opportunities to participate in trainings, conferences and qualifications or education part II relates to work with environmental issues. People employed in hard coal mines in Poland, who occupy various positions and have various years of service, participated in the survey. Due to the anonymity of the aforementioned survey, the percentage of respondents was not analyzed, taking into account the workplace where the employee is employed. In total, 250 people took part in the study, each of whom received one copy of the questionnaire. The research was conducted either by live contact with employees or by e-mail between January and March 2022.

Table 1.

Data of a surveyed person

Metrics	
1. Education	<input type="checkbox"/> basic vocational (basic vocational school) <input type="checkbox"/> sectorial vocational (sectorial vocational school) <input type="checkbox"/> secondary sectorial vocational (secondary technical school) <input type="checkbox"/> secondary <input type="checkbox"/> higher technical <input type="checkbox"/> higher non-technical
2. Position held	<input type="checkbox"/> manual work underground <input type="checkbox"/> manual work on the ground <input type="checkbox"/> non-manual work underground <input type="checkbox"/> non-manual work on the ground

Cont. table 1.

3. Department <input type="checkbox"/> administration <input type="checkbox"/> OHS and training <input type="checkbox"/> surveying and geology <input type="checkbox"/> production preparation <input type="checkbox"/> environmental protection <input type="checkbox"/> economy and finance <input type="checkbox"/> mining		<input type="checkbox"/> blasting technology <input type="checkbox"/> rockburst and casing <input type="checkbox"/> Ventilation <input type="checkbox"/> Energomechanics <input type="checkbox"/> mechanical processing <input type="checkbox"/> materials management and procurement	
4. Total work experience (if applicable - not just at a mine) Please specify in years.....			
5. How many years of experience do you have working with environmental costs? <input type="checkbox"/> 1 – 3 years <input type="checkbox"/> 3 – 5 years <input type="checkbox"/> over 5 years			
6. Do you have documented qualifications (certificates, diplomas, etc.) in the field of environmental engineering? <input type="checkbox"/> Yes <input type="checkbox"/> No			

Table 2.

Information regarding the employee's environmental courses/training and attendance at conferences

Questions about participation in environmental courses/conferences	
1. Would you be interested in taking environmental courses/training? <input type="checkbox"/> Very much <input type="checkbox"/> Quite <input type="checkbox"/> Not at all	
2. How often do you receive proposals from your supervisors to attend environmental courses/training? <input type="checkbox"/> Often <input type="checkbox"/> Rarely <input type="checkbox"/> Never	
3. How often does the management agree to your participation in environmental trainings/courses? <input type="checkbox"/> Often <input type="checkbox"/> Rarely <input type="checkbox"/> Never	
4. How interested would you be in attending environmental conferences/seminars? <input type="checkbox"/> Very much <input type="checkbox"/> Quite <input type="checkbox"/> Not at all	
5. How often do you receive proposals from your supervisors to attend environmental conferences/seminars? <input type="checkbox"/> Often <input type="checkbox"/> Rarely <input type="checkbox"/> Never	
6. How often does the management agree to your participation in environmental conferences/seminars? <input type="checkbox"/> Often <input type="checkbox"/> Rarely <input type="checkbox"/> Never	

Table 3.*Questions about the environmental cost issue in the employee's department*

Questions about working with environmental costs
<p>1. Do you have tools to facilitate environmental cost reporting (software, legislation, etc.)? And do you use them when preparing necessary documentation.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, and I use them often <input type="checkbox"/> Yes, but I do not use them <input type="checkbox"/> I do not have this type of tool
<p>2. Have you been trained to prepare documentation for environmental costs and how often do you receive such training?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, trainings take place regularly <input type="checkbox"/> Yes, but trainings take place infrequently <input type="checkbox"/> I have not been trained; trainings do not take place
<p>3. What do you think about computer programs used to prepare environmental cost reports?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The computer program(s) is/are very easy/easy to use <input type="checkbox"/> The computer program(s) is/are average in use <input type="checkbox"/> The computer program(s) is/are difficult to use, or the department does not have this type of computer program
<p>4. What do you think about the flow of information regarding environmental costs among the staff responsible for reports?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The flow of information re environmental costs between employees is very good and information is collected on time <input type="checkbox"/> The flow of information re environmental costs among employees is average and information is partly collected on time <input type="checkbox"/> The flow of information re environmental costs among employees is very bad and information is rarely collected on time
<p>5. Is there a person in your department responsible for departmental cost accounting (coordinator)?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, there is such a person <input type="checkbox"/> No, there is no such person <input type="checkbox"/> I do not know anything about such a person

3. Discussion of results

The questionnaire was open to all willing mine employees working for two leading mining companies in Silesia – PGG S.A. and JSW S.A. It was completely anonymous and in no way identified employees with their company. The results are presented in Figures 1 to 14.

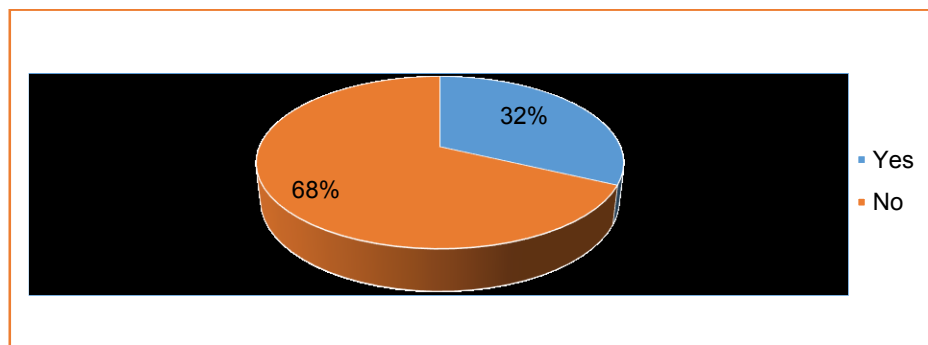


Figure 1. Documented qualifications in the field of environmental engineering.

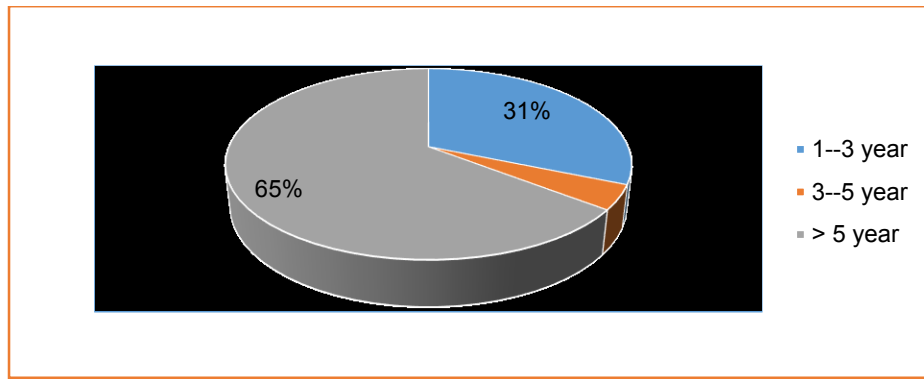


Figure 2. Experience in working with environmental costs in years.

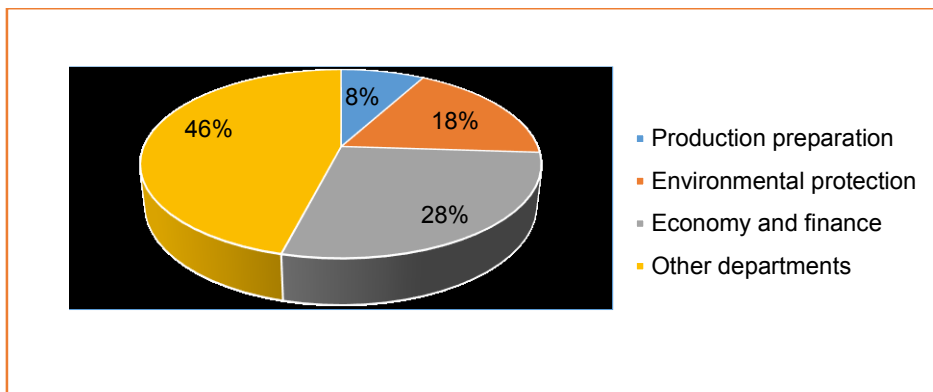


Figure 3. Percentage of people participating in participation in selected events.

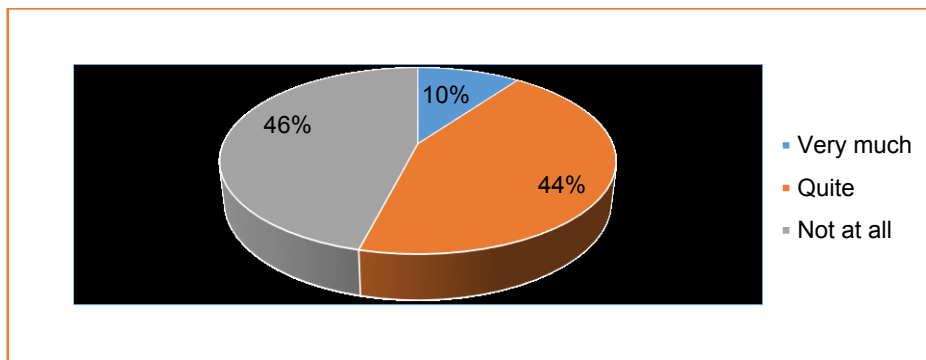


Figure 4. Interest in attending courses on environmental issues.

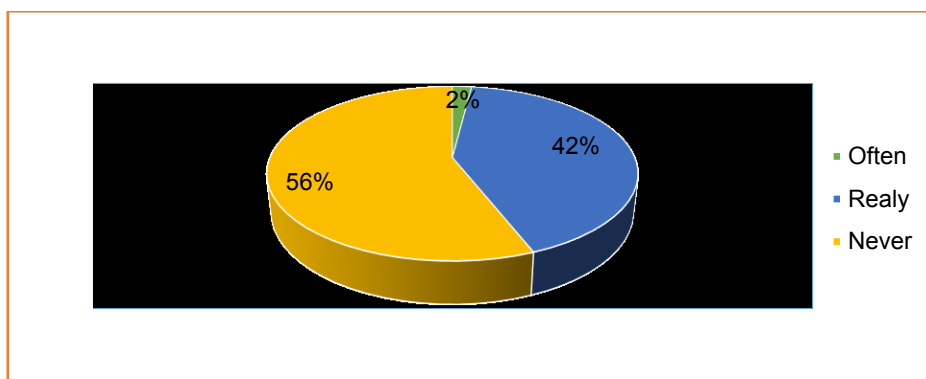


Figure 5. Management approvals for the participation of employees in courses on environmental aspects.

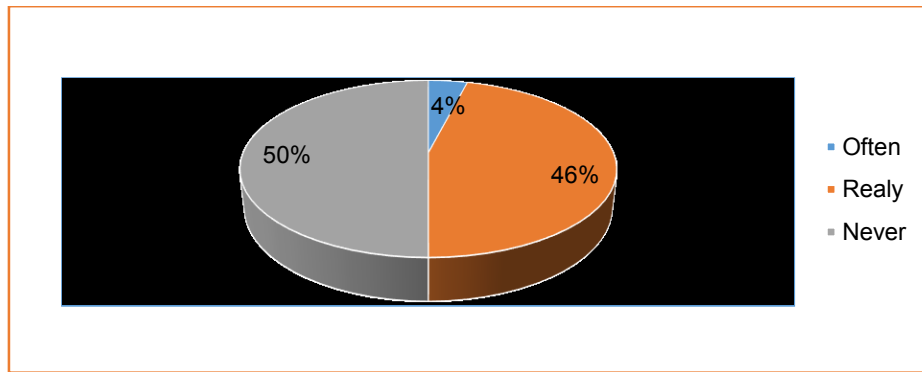


Figure 6. The frequency of proposals for employee participation in environmental protection courses by the management.

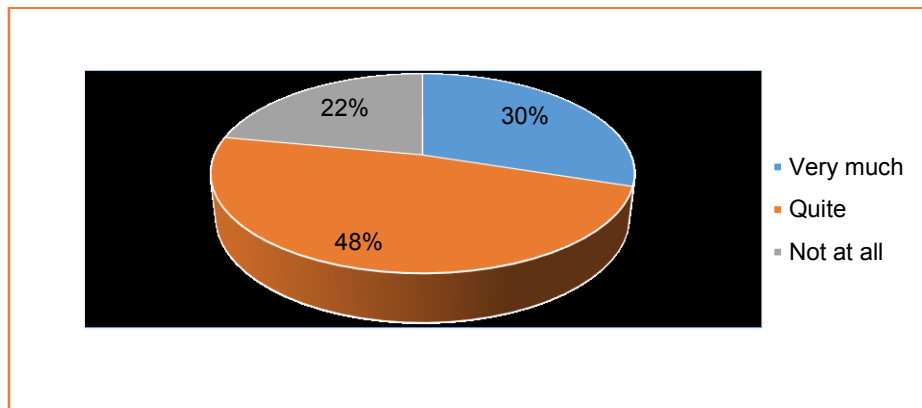


Figure 7. Percentage of employees regarding the willingness to participate in conferences on environmental aspects.

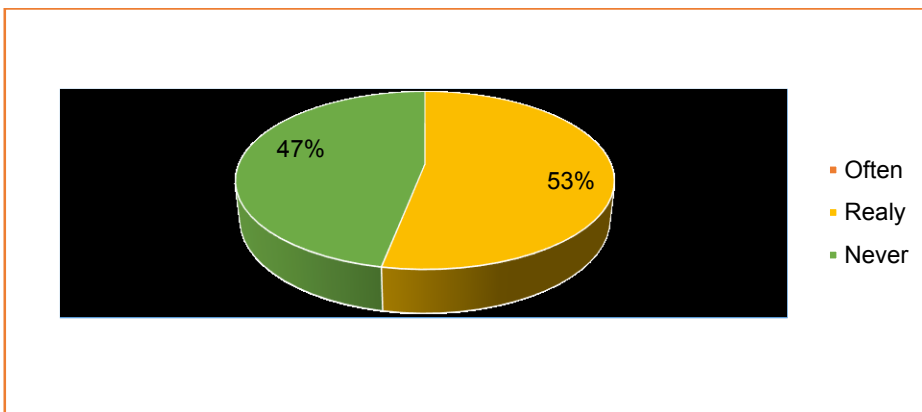


Figure 8. Management approvals for the participation of employees in conferences or seminars in the field of environmental protection.

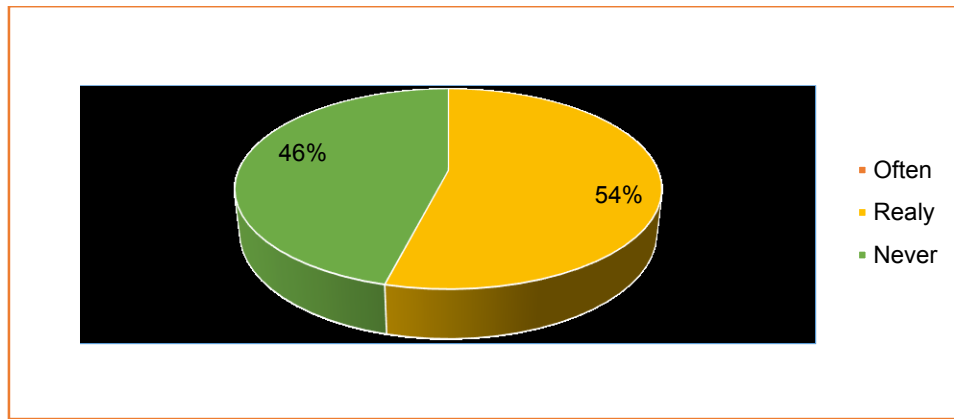


Figure 9. The frequency of proposals for employee participation in conferences or seminars from the management.

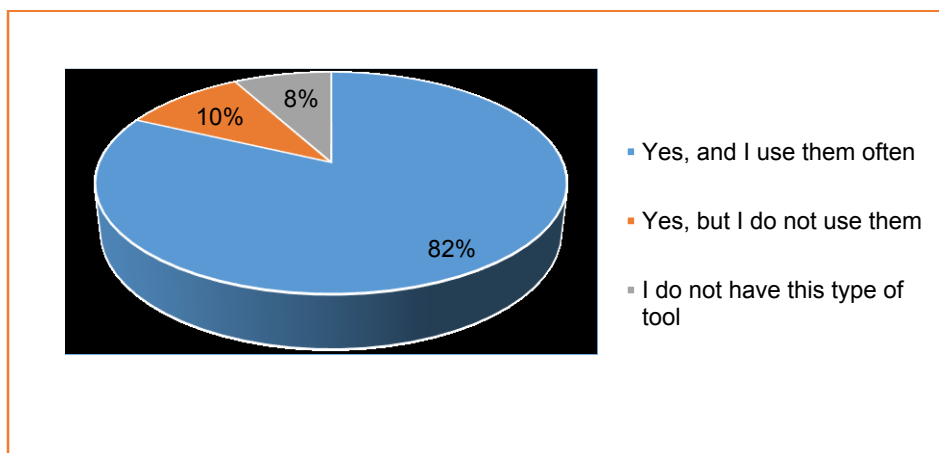


Figure 10. Availability of tools to help you work with environmental costs.

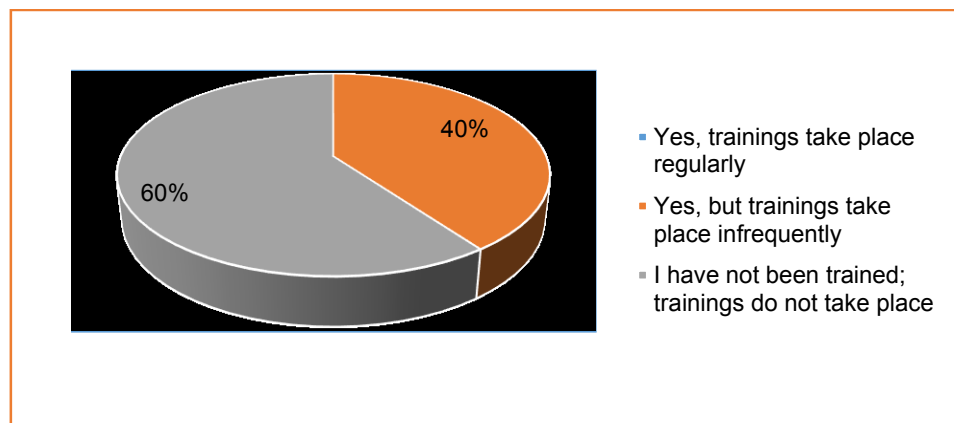


Figure 11. Courses and training to start working with environmental costs.

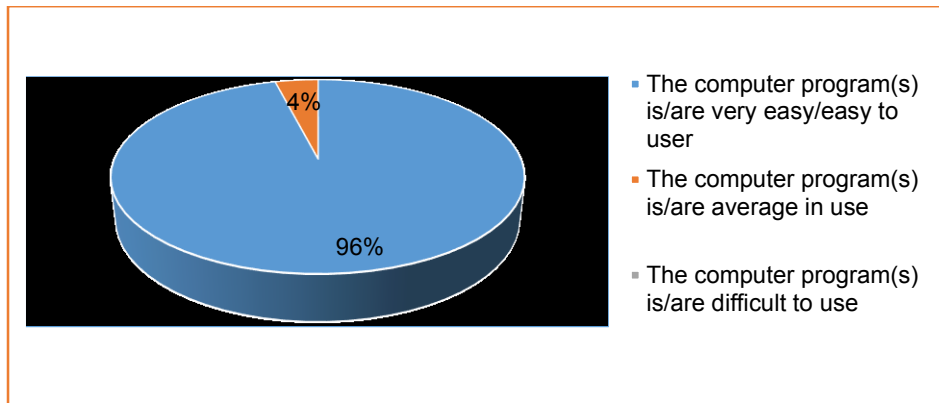


Figure 12. Difficulty using computer software to create environmental cost reports.

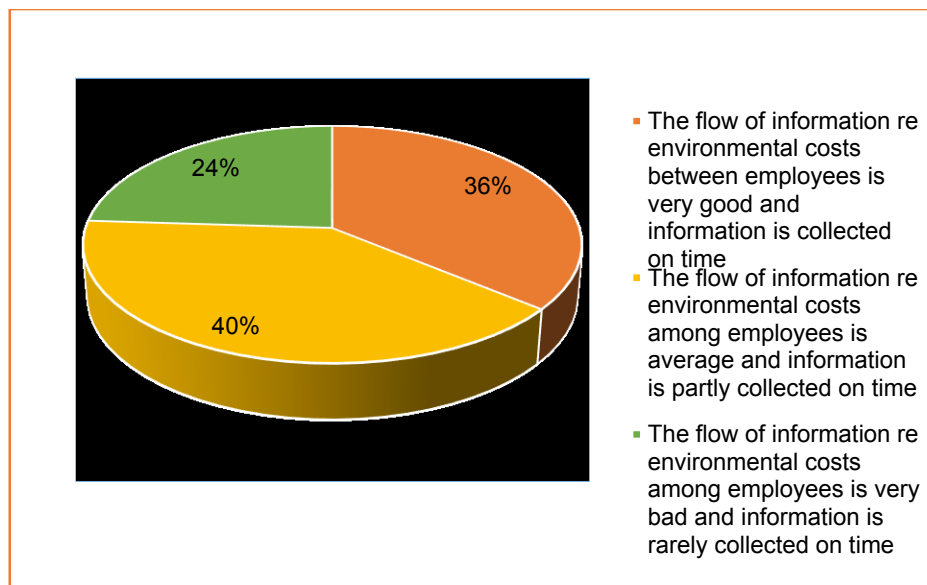


Figure 13. Question about about the flow of information regarding environmental costs among the staff responsible for reports.

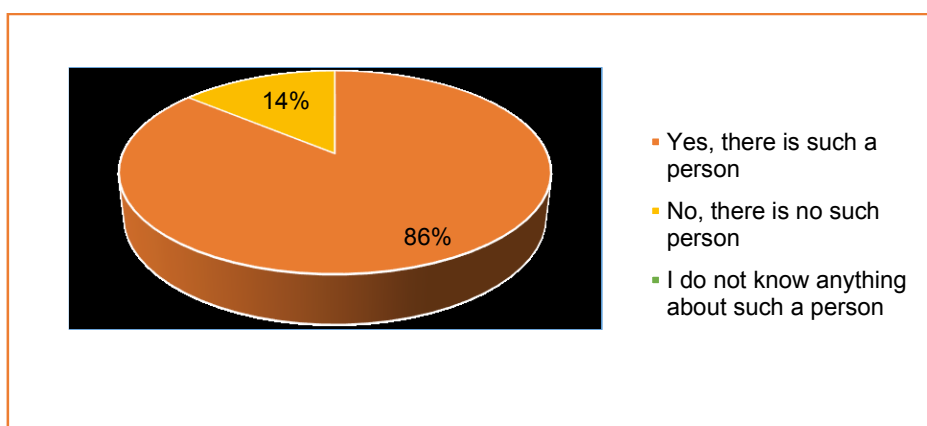


Figure 14. Question about person in department responsible for departmental cost accounting.

When compiling the information gathered during the questionnaire, the first step was to analyze the data contained in part I. The main focus was placed on questions about documented qualifications in environmental protection, experience in work related to environmental costs, as well as information in which department the survey participant was employed. In the case of the question (Fig. 1) concerning documented qualifications in environmental engineering such as diplomas, certificates, etc., it was found that less than 35% of the respondents had such documentation, while more than 60% of the respondents did not have such documentation. It should be remembered that in the case of people who do not deal with environmental reports daily or are only members of a team for environmental reports, they are not obliged to have such documents; however, knowledge gained through obtaining such diplomas can be very helpful, for example, when working with environmental costs or carrying out tasks in the field of environmental protection. With regard to possessed experience in environmental costs (Fig. 2), more than 60% of the respondents indicated at least 5 years of experience in this area, of which 31% were people whose practice was from 1 to 3 years. The last question that was paid special attention to in the first part of the questionnaire was the employment department (Fig. 3). The analysis showed that the highest number of respondents dealing with costs and environmental reports were employed in the following departments: environmental protection and economy and finance. For other departments, there were one or two respondents at most (most frequently, it was the head of the department, or a person appointed by him/her).

The second part of the questionnaire focused on the participation in environmental courses and conferences. The first three questions concerned courses or trainings in environmental protection. With regard to the interest in participating in such courses or trainings, 10% of the respondents expressed their willingness, 44% of the respondents were moderately interested and 46% did not express interest in such opportunities (Fig. 4). As for proposals for participation in courses or trainings by the management, the following results were obtained: only 2% of the respondents admitted that they often obtained consent for participation in the above-mentioned forms of expanding knowledge of environmental protection, 42% claimed that such consent was granted rarely, and 56% had not obtained such consent back then (Fig. 5). As for the proposal of employees' participation in courses from their superiors, only 4% of the respondents declared that they often received such proposals, 46% rarely received such proposals, and 50% admitted that they had not received such proposals at all (Fig. 6). With regard to the participation in conferences or seminars of employees dealing daily with environmental protection issues and environmental costs, answers were found to be very similar to the previous question. The willingness to participate in conferences or seminars was declared by 30% of the respondents, average interest was shown by 48% of the respondents, and no interest was shown by 22% of the subjects (Fig. 7). When analyzing answers related to the proposals and superiors' consent for employees' participation in the discussed events, 54% of the respondents admitted that they rarely received such proposals, while 46% had not received such a proposal at all (Fig. 9). With regard to the consent, 53% of the respondents

rarely received such a consent, while 47% had not received such a consent at all (Fig. 8). It is worth noting that although burdened with costs, both improving the knowledge of employees through allowing them to participate in such trainings and presenting the achievements of a company at various conferences can bring benefits presented at the beginning of this article.

The last part of the questionnaire was related to working with environmental costs. The questions were designed to capture problems with the reporting system itself. The first question referred to access to tools that can facilitate working with environmental costs and the frequency of their use by employees. In this case, 82% of the respondents admitted that they had access to these tools and used them in their work, 10% indicated that they did not use tools to facilitate the creation of cost reports and 8% did not have this type of facilitation (Fig. 10). The next question concerned trainings in preparing documentation related to environmental costs and their frequency. None of the respondents marked the answer concerning regular trainings, 40% of the respondents admitted that trainings took place rarely and the remaining 60% had not had the opportunity to take part in such trainings (Fig. 11). The third question referred to the ease of use of computer programs, which are utilized by employees when creating such documentation. In this case, 96% of the respondents admitted that the programs were very easy to use, only 4% said that the use of available computer tools was average (Fig. 12). The last two questions dealt with the flow of information related to the mentioned costs and the persons responsible for the departmental cost accounting. In the case of information flow, 36% of the respondents confirmed that the information flow was very good, and the data was collected on time, 40% indicated that the information flow was average, and according to 24%, the information flow was bad, and the information was not collected on time (Fig. 13). As it was mentioned before, the last question concerned persons responsible for departmental cost accounting. Here, 86% of the employees admitted that there was such a person in the department, whereas 14% stated that there was no person responsible for departmental cost accounting (Fig. 14).

To sum up the results, it is worth emphasizing that the aspect of environmental costs and environmental reports will undergo further dynamic development over the next few years. The results of the authors (Ferens, 2016; Piontek, 1999; Paszkiewicz, Szadziewska, 2011) research so far have focused mainly on the description of the issue of environmental costs, their classification and, to a lesser extent, on measures aimed at introducing changes. The article presents a survey as a tool helpful in identifying problems related to reporting at the company level, as evidenced by the results presented. As a result, there is a need for continuous improvement of knowledge and skills of employees responsible for these aspects of a company's operations. Unfortunately, enabling further development of employees through trainings or opportunities to participate in conferences as well as providing appropriate working facilities are often neglected as an important aspect of a company's activity. Even if it entails quite high costs or even difficulties in its functioning, the profit in the form of a highly qualified team significantly outweighs the losses and ensures stability of a company's functioning in the

field of environmental protection, for example, at the moment when additional requirements appear or when the existing requirements become stricter. On the other hand, the low interest of employees may result from the fact that employers constantly reject the possibility of such participation and the lack of benefits resulting from broadening their skills, yet these do not always have to be material benefits.

4. Conclusion

It is commonly known that environmental protection is currently a crucial element of company's activity, which is taken into account in both global and national economy as well as more and more often decides about its value and innovativeness. The more companies are oriented towards pro ecological actions and their activity is designed in such a way as to have the least possible negative impact on the environment, the greater the value of such companies on the European or world market.

As part of the article, attention was drawn to the need to develop a breakdown of environmental costs dedicated to the mining sector and proposed examples of costs that could be classified as these costs, as well as the most important problems related to reporting.

This paper, in addition to reviewing the most important literature information on the analyzed issue, paid special attention to employees, whose task is to create both reports for the environment and the balance of environmental costs. For this purpose, an appropriate questionnaire was created, with two parts focused on working with environmental costs, the possibility of development and sharing of knowledge acquired in the field of environmental protection and environmental costs. It should be noted here that in order to be able to move smoothly between these two concepts, it is necessary to have thorough understanding of them in equal measure. The basic problem that was pointed out in the questionnaire was the low possibility of participation in trainings or conferences in the discussed scope. It is worth emphasizing that employees with sufficient knowledge will not only be able to perform their duties well but additionally will be able to properly use the tools used for e.g., environmental cost reporting. Moreover, enabling employees to take part in conferences dedicated to the discussed issue and sharing the acquired skills is a very good opportunity to broaden the existing knowledge and improve the systems currently functioning in a company.

Strengthening the background connected with the environmental protection and environmental costs in companies from the mining sector through highly specialized personnel, properly developed reporting systems or tools facilitating the work within these issues will certainly not bring huge financial benefits in a very short period of time. Fines imposed on companies in connection with noncompliance with the introduced regulations as well as mistakes resulting from insufficient knowledge of employees in this scope will significantly outweigh the costs connected with the reinforcement of the said facilities.

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