

## Collaboration Tripartite Elements Accident Reporting and Potential Hazards Management Coal Mining, Indonesia: Systematic Review

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### Abstract:

**Objective:** Occupational accidents and diseases in Indonesia are still a scourge because they not only cause minor and serious accidents, but often result in fatalities. The same occupational accidents and diseases' would seem to be happening in the coal mining business sector. According to the Badan Penyelenggara Jaminan Sosial Indonesia, 234,370 cases of work accidents and work-related illnesses occurred in 2021, of which the mining sector contributed 6,565 cases. Collaboration between companies, workers and local governments in the management of work accident reporting needs special attention so that similar incidents do not occur in the future.

**Material and Methods:** This literature review supports the researchers hypothesis or belief in disclosing that there is an increasingly open space for collaboration between companies, workers and local governments in accident reporting management to reduce accidents. The literature review search term used is work accident reporting sourced from Google Scholar, National Library of Indonesia, PubMed, and other sources in the 2017–2022 period.

**Results:** This literature review found a number of facts that companies have an obligation as stipulated in the Regulation of the Minister of Manpower of the Republic of Indonesia No. 03 of 1998 concerning Accident Reporting and Investigation Procedures to report every work accident and work-related illness that occurs both periodically and specifically to the competent authority. Likewise, workers have the responsibility to report any accidents and potential hazards found in the workplace to the occupational safety and health officer. The Regional Government is no exception, which is a regulator and at the same time supervises companies in carrying out their business activities.

**Conclusion:** To reduce workplace accidents requires diligent and constructive cooperation between the business managers, the workers, and the government regulators to support a zero-accident work environment.

**Keywords:** accident reporting, collaboration, potential hazards, tripartite elements, zero accidents

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## Introduction

Occupational accidents and occupational diseases are a long-standing phenomenon in the Indonesian industry because remain a serious problem they have been proven to survive today. Various efforts have been and are being developed by various parties, especially companies to identify problems leading to accidents and reduce work accidents and occupational diseases. However, their incidences are still increasing every year.

The Badan Penyelenggara Jaminan Sosial Indonesia for Employment noted that the number of work accidents and occupational diseases during the 2019–2021 period continued to increase. In 2021 there were 234,370 cases recorded, in 2020 there were 221,740 cases, and in 2019 there were 210,789 cases. The mining sector contributed 6,565 cases in 2021. This figure has even doubled compared to 2020, at which time it was only 3,131 cases.

Coal mining is one of the sectors, a high risk of causing occupational accidents and work-related occupational. The problems of work accidents and occupational diseases will continue to occur if there are no breakthrough efforts that can be implemented seriously in dealing with these problems.

One of the efforts that can be pursued is the availability of a system in the management of work accident reporting and occupational diseases including potential hazards that are integrated into the management of the company in general. Reporting of work accidents and occupational diseases and potential hazards aims to protect the occupational health and safety of workers, make available data on accidents and occupational diseases, facilitate identification of factors that cause work accidents and occupational diseases, prevent accidents and occupational diseases from recurring, and control losses due to work accidents and occupational diseases<sup>1</sup>.

The cause of work accidents and occupational diseases in mining is due to the lack of an occupational health and safety (OHS) culture for both individual workers and company management. Occupational accidents and occupational diseases can be prevented by making efforts to increase understanding and changed the OHS culture<sup>2</sup>. The OHS culture including work accident and occupational diseases reporting management is not only the responsibility of the company, but also of the workers and with the support of the local government.

The government plays an important role, especially preparation regulations in the field of manpower, including the establishment of the Ministry of Manpower<sup>3</sup>. Various regulations have been successfully made by the Government of Indonesia regarding reporting of work accidents, such as Regulation of the Minister of Manpower of the Republic of Indonesia No. 03 of 1998 concerning Procedures for Reporting and Investigating Accidents, also RI Minister of Manpower and Transmigration No. 01 of 1981 concerning the Obligation to Report Occupational Diseases.

Coal mining companies in Indonesia have an obligation to report every work accident and occupational disease as mandated in laws and regulations. In addition to the company, workers are also obliged to report work accidents and occupational diseases as well as potential hazards according to the Decree of the Minister of Mines and Energy Number: 555.K/26/M.PE/1995 concerning OHS in General Mining.

The problem of reporting work accidents and occupational diseases has been supported by a number of regulations, but the implementation of an accident reporting management system has not run optimally in coal mining due to various factors. Therefore, collaboration between companies, workers and the government needed in the management of work accident reporting to create a zero-accident work environment.

## Material and Methods

Researcher did a lit review to gather information about accidents and potential hazard reporting management in coal mining. The researcher gather the relevant papers through the search, and then decides which papers are useful and which are not, obtained from various sources such as Google Scholar, the National Library of Indonesia, PubMed, and other sources<sup>4</sup>. Researcher carried out analysis, synthesis, summaries, compared research results, and did a literature review on the themes studied. The literature review was conducted in order to gather information on accident reporting systems in coal mining and the results were intended to create and/or encourage the creation of a space for active participation for each tripartite element (companies, workers and government) in the accident reporting system in coal mining. The literature review was carried out in January 2023. The data and information obtained were then analyzed by the researchers and presented in a narrative manner. This research obtained permission from the Faculty of Economics and Business, Mulawarman University Number: 012/UN17.1.36.1/DT/2023.

## Results

Coal mining is one of the largest business sectors in Indonesia, especially in East Kalimantan Province. However, behind the positive impacts of the operation such as there is acceptance of labor and increased income of the community around the mine of coal mining there are also various negative impacts. One of the impacts that is very concerning is that workers can experience work accidents and become victims of death.

Various causes have been proposed to explain the high number of mining accidents in coal mining. Worker factors such as lack of skills, lack of experience, misperceptions, and unsafe behavior are still the main causes of accidents and injuries in coal mining<sup>5</sup>. Potential hazards coal mining that trigger workers to behave unsafely

can be found in all types of mining activities, starting from overburden opening and coal expose work or overburden disposal, road maintenance, exploration, culvert making, cut and fill activities, to transporting coal both from the coal mining area to the stockpile as well as from the stockpile to the port.

In addition to the unsafe behavior factor of workers which is one cause of accidents and occupational diseases, there are also various sources or conditions such as physical, chemical, biological, ergonomic and psychosocial hazard factors. These potential hazards will continue to exist in the work environment as long as coal mining activities continue.

The physical hazard factors in coal mining not only cause work accidents but also occupational accidents. For example, For example, the content of radioactive materials in coal potential harm to not only workers but the general public<sup>6</sup>. Coal radiation exposure is associated with silicosis and pneumoconiosis in miners. In fact, health problems such as disorders of the joints are not only experienced by miners but also in communities around coal mines<sup>7</sup>.

Likewise chemical hazard factors that have the potential to increase the risk of carcinogens due to exposure to chemical elements such as Cr, Ni and As which collect in surface water in coal mining areas both through consumption and skin contact<sup>8</sup>. Potential disasters can also occur due to explosions of coal caused by the presence of electric potential in the coal mining process<sup>9</sup>.

In addition to these factors, poor ergonomics is often a problem in coal mining which results in high complaints of back pain among workers<sup>10</sup>. Not only have the potential to cause work accidents and occupational diseases, but also affects work productivity<sup>11</sup>.

The Indonesian government continues to work on preventing accidents and occupational diseases in coal mining through new regulations. According to the Regulation of the Minister of Energy and Mineral Resources of the

Republic of Indonesia Number 26 of 2018 concerning Implementation of Good Mining Principles and Supervision of Mineral and Coal Mining explains that every mining company has an obligation to implement mining safety provisions<sup>12</sup>.

The provisions regarding mining safety have been clearly regulated by the Government of Indonesia<sup>13</sup>. This proves that the Government of Indonesia supports the optimal implementation of the mining safety management system.

If one of the three elements is absent or is present but is not active, then it is certain that the coal mining business in Indonesia will continue to have a high risk of work accidents resulting in fatalities, especially among workers.

## Discussion

The technical implementation of mining safety reporting has been stipulated in the Decree of the Director General of Mineral and Coal No. 185.K/37.04/DJB/2019. It is clearly stated that every mineral and coal mining company is required to submit a written report on all aspects of mining work safety through regular reports (monthly and quarterly) and special reports. The manager of industry must be reported number of accident cases and potential hazards to the Government of the Republic of Indonesia through the Ministry of Manpower and/or the Office of Manpower in every province in Indonesia.

Reporting work accidents and occupational diseases that occur in coal mining has not yet become a culture<sup>14</sup>. This shows that efforts to improve OHS performance in companies are still experiencing obstacles due to a lack of awareness from the various parties involved in mining business activities, especially the companies<sup>15</sup>.

Various factors cause workers to participate less in reporting work accidents such as knowledge, unsafe actions, peer support, superior support, punishment, and

unsafe conditions. Therefore, it is important for companies to carry out various efforts such as socialization activities to increase workers' understanding of the importance of reporting work accidents<sup>16</sup>.

Digital era support cooperation between companies, workers and local governments in optimizing reporting of work accidents and potential hazards in coal mining. Workers too consider to be important reporting accidents and potential hazards in the workplace<sup>17</sup>.

In addition, the Government of Indonesia through the Ministry of Manpower and Regional Governments such as the Manpower Office should carry out continuous supervision of all companies in their working area. Monitoring measures for coal mining are intended so that companies consistently carry out various OHS efforts to prevent coal mining accidents from occurring<sup>18</sup>.

## Conclusion

Coal mining businesses have an obligation to report every work accident and occupational disease and potential hazard on a regular and ongoing basis. Workers are obliged to report any accidents and potential hazards in the workplace. The regional government is also responsible for providing regulations and a monitoring system so that coal companies are always committed to OHS in carrying out their activities. This emphasizes the importance of the collaboration of all elements in optimizing the management of reporting work accidents and potential hazards in coal mining through a digitized accident reporting system. Development research is needed on the implementation of a digitized accident reporting system that is integrated with the company's management as a whole in order to reduce accidents in the workplace.

## Conflict of interest

The authors have no conflicts of interest to report.

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