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## Community empowerment based on a full bottom-up approach in the environmental management of coal mining in Lahat Regency

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### ABSTRACT

Coal mining activities have the potential to exert significant pressure on the environment and the social lives of surrounding communities, necessitating the implementation of corporate social responsibility (CSR) programs that go beyond mere administrative compliance and prioritize environmental sustainability. This study aims to analyze the implementation of the Full Bottom-Up approach in community empowerment programs conducted by coal mining companies in Lahat Regency and its implications for environmental management and community welfare. Employing a qualitative descriptive method, data were collected through in-depth interviews, participatory observation, and document analysis across eight CSR program areas implemented in 2024. The findings indicate that active community involvement in both the planning and implementation stages significantly enhances CSR effectiveness, particularly in fostering community participation in environmental management activities and strengthening economic self-reliance. Community-based environmental management programs have contributed to increased environmental awareness and measurable behavioral changes among residents regarding cleanliness and conservation in areas adjacent to mining sites. Furthermore, this study confirms that the Full Bottom-Up approach can be conceptualized as a community-participation-based environmental management model that is highly relevant to supporting the long-term sustainability of coal mining operations. These findings offer practical implications for mining companies, policymakers, and local communities in designing more inclusive and impactful CSR frameworks.

### INTRODUCTION

PT Golden Great Borneo (GGB) is a coal mining company operating in Lahat Regency that is committed to practicing good mining governance and preserving the environment. This commitment aligns with Indonesian government policy, specifically Ministry of Energy and Mineral Resources Decision No. 1824K/30/MEM/2018, which requires mining companies to implement community development and empowerment programs as part of their corporate social responsibility (CSR). This regulation emphasizes that mining activities are not solely aimed at achieving economic profits but must also prioritize environmental sustainability and the well-being of communities surrounding mining operations (Erwin

et al., 2022; Mina et al., 2026; Pelengkahu, 2026). However, in practice, the implementation of community empowerment programs by mining companies has not always reflected a balance between economic growth, environmental protection, and the social interests of local communities (Mayasari et al., 2026).

Natural resources, including coal, play a strategic role in Indonesia's economic development and have made a significant contribution to national economic growth since the New Order era. However, coal mining activities also give rise to various environmental and social problems at the local level. Environmental impacts such as land degradation, water pollution, and soil quality decline are frequently experienced by communities

living near mining areas. In many cases, companies' focus on short-term economic gains has led to insufficient attention being paid to environmental protection and social sustainability. This situation underscores the importance of a community empowerment approach that is not merely compensatory but also fosters community engagement in sustainable environmental management.

One approach considered relevant to addressing these issues is the Full Bottom-Up approach to community empowerment (Longpre et al., 2023). This approach positions local communities as the primary actors in program planning and implementation, so that communities serve not only as beneficiaries but also as decision-makers. Active community participation is a crucial element because local communities have firsthand knowledge of environmental conditions, natural resources, and the ecological challenges they face daily. Consequently, the Full Bottom-Up approach has the potential to enhance the effectiveness of empowerment programs while strengthening environmental management in mining areas.

In the context of community empowerment, the Full Bottom-Up approach emphasizes the importance of community participation at every stage of a program, from planning and implementation to evaluation. This participation not only contributes to improving the community's quality of life but also plays a role in building collective awareness and responsibility for environmental conservation. The implementation of this approach is expected to reduce social inequality, improve relations between companies and communities, and create more adaptive and sustainable environmental management practices (Nurqutni et al., 2026).

Furthermore, community empowerment through a fully bottom-up approach also has the potential to minimize social conflicts that often arise in mining areas. Conflicts between mining companies and local communities are often triggered by the perception that mining activities cause more negative impacts than benefits, particularly on the environment (Erkan et al., 2025; Upe et al, 2020). Community involvement from the early stages of planning empowerment programs fosters a sense of ownership regarding those programs. This encourages communities to actively

participate in maintaining environmental sustainability while supporting the company's operational continuity.

In addition to social aspects, community involvement in empowerment programs also plays a strategic role in mitigating the environmental impacts of coal mining activities. Mining operations often cause ecosystem damage, water pollution, and soil degradation (Hidayat et al., 2018). By involving the community in environmental management, companies can promote more environmentally friendly mining practices. Programs such as waste management, post-mining land rehabilitation, and water resource protection can be an integral part of community empowerment strategies oriented toward environmental sustainability (Aliamutu & Mkhize, 2024; Mustari et al., 2026; Singh, 2015).

A number of studies indicate that companies that adopt a social responsibility approach by actively engaging the community tend to receive greater support from local communities and the government (Lehavy et al., 2011; Zabala, 2026). This support contributes to the long-term sustainability of the company's operations. Conversely, companies that neglect community empowerment and environmental aspects often face social rejection and a decline in reputation (Campbell, 2012; Kasimba & Lujala, 2022; Simbai et al., 2024). Therefore, strengthening the role of the community in CSR programs is a key factor in building harmonious relationships between companies, communities, and the environment.

The management of natural resources, particularly coal mining, requires attention to three key aspects: social, economic, and environmental, which are interrelated and inseparable within the framework of sustainable development (Ofosu et al. 2020; Saha & Saha, 2023). In this context, mining companies have a responsibility to ensure that their mining operations not only provide economic benefits but also contribute positively to environmental conservation and community well-being. Community empowerment programs based on a Full Bottom-Up approach can serve as a key strategy to bridge these interests.

Furthermore, the implementation of Ministry of Energy and Mineral Resources Decision No. 1824K/30/MEM/2018 emphasizes the importance of transparency and accountability in the implementation of community development and

empowerment programs (Caretta, 2026; Marpi, 2021; Zaataamani et al., 2024). The main challenge faced by mining companies is ensuring that empowerment programs are not merely administrative in nature, but truly address community needs and support sustainable environmental management. Direct community involvement enables the creation of programs that are more transparent, accountable, and have a tangible impact on environmental conditions around mining areas.

The conceptual framework illustrates environmental management in mining activities using a full bottom-up approach, which places community well-being as one of the key aspects of environmental management. Mining operations, including the use of technology, management practices, and investment models, represent the main factors influencing environmental and social conditions within surrounding communities. These mining activities have the potential to generate environmental impacts, particularly in the form of effluents, mining waste, and gas emissions, which may subsequently affect the quality of ecosystem services, including water, soil, air, and biodiversity.

Changes or disturbances in ecosystem services are closely related to community well-being, which encompasses shared social values, economic values, and health values. At the same time, social interaction and community feedback constitute important components in shaping the relationship between mining activities and community well-being. This relationship is further strengthened through Corporate Social Responsibility (CSR) initiatives and economic empowerment programs, which are directed toward improving the social, economic, and health conditions of communities living around mining areas.

Thus, the framework demonstrates a reciprocal relationship among mining operations, environmental impacts, ecosystem services, and community well-being. The full bottom-up approach emphasizes that communities are not merely recipients of the impacts of mining activities but also active stakeholders who provide feedback, identify local needs, and contribute to environmental management and economic empowerment. Ultimately, the integration of responsible mining operations, ecosystem service protection, CSR, economic empowerment, and

community participation is expected to support sustainable community well-being while promoting more responsive and sustainable environmental management in mining areas.

## **MATERIALS AND METHODS**

This study employs a descriptive qualitative approach to analyze the implementation of corporate social responsibility (CSR) programs based on a full bottom-up approach, as well as their implications for environmental management and community empowerment in areas surrounding coal mining sites. A qualitative approach was chosen because it allows researchers to gain a deep understanding of the experiences, perceptions, and forms of participation of stakeholders in responding to CSR programs, particularly those related to environmental management practices. This method is relevant for examining the relationship between mining operations, community engagement, and environmental sustainability as depicted in the research conceptual framework.

The study focused on communities living near a coal mining area that has been in operation since 2015. This focus aligns with the research by Upe et al. (2019) and Rosyida et al. (2018), which emphasizes the importance of researchers' direct involvement in understanding the impacts of mining activities on local communities. The units of analysis in this study include: (1) the implementation of corporate CSR programs, (2) community participation in environmental management, and (3) the implications of CSR programs for community well-being and environmental sustainability.

The data used in this study consist of primary and secondary data. Primary data were collected through in-depth interviews and participatory observation, while secondary data were obtained from CSR reports and company annual reports, government policy documents, and scientific articles relevant to mining regulations and CSR programs. Simbai et al. (2025) emphasize the importance of collaboration between companies, the government, and the community in ensuring the successful implementation of CSR in the mining sector. Therefore, the use of secondary data in this study serves to strengthen the analysis and provide a policy context for the field findings.

### **Data collection procedure**

The data collection procedure follows the stages outlined by Ningi (2022), which emphasize the importance of integrating interviews, observations, and documentation in qualitative research. The first stage consists of in-depth interviews with 20 key informants selected through purposive sampling, that is, based on their direct involvement, knowledge, and strategic roles in the implementation of CSR programs and environmental management in the areas surrounding the mining sites.

The selection of 20 key informants was based on the principle of information saturation, whereby data collection is halted when additional interviews no longer yield significant new information relevant to the research focus. Key informants consisted of community leaders, village officials, company representatives, mine workers, and local government representatives who were directly involved in or affected by the CSR program. This composition was chosen to ensure the representation of perspectives from various stakeholders involved in the relationship between the company, the community, and environmental management.

The interviews focused on the implementation of CSR programs, forms of community participation in environmental management, and the informants' perceptions of the social and environmental impacts of coal mining activities. This approach allowed the researchers to capture the dynamics of the company-community relationship as well as changes in environmental behavior that emerged following the implementation of CSR programs.

The second stage is participatory observation, in which researchers are directly involved in the community's social activities, particularly those related to environmental management, such as waste management, community-led environmental cleanup efforts, and the use of environmental facilities provided by the company. Participatory observation provides important insights into changes in community behavior in response to the company's social interventions.

The third stage is documentation, which is used to assess the alignment between the planning and implementation of CSR programs, as well as their impact on the community and the

environment. The documents analyzed include the company's CSR reports, the master plan for community empowerment programs, and related policy documents. To enhance the validity and reliability of the findings, this study employs data triangulation by comparing the results of interviews, observations, and documentation.

### **Data analysis techniques**

Data analysis was conducted using qualitative descriptive techniques. The data were analyzed to describe and interpret the social, economic, and environmental changes that occurred before and after the implementation of the CSR program. The analysis focused on how the Full Bottom-Up approach-based CSR program influenced community participation in environmental management and its implications for environmental sustainability in the areas surrounding the mining sites.

The analysis was conducted by grouping key themes in line with the study's conceptual framework, namely: (1) mining operations and their environmental impacts, (2) CSR implementation and community empowerment, and (3) the relationship between community participation, environmental management, and community well-being. Arvidsson & Dumay (2022) emphasize the importance of in-depth description in understanding the social changes caused by corporate interventions, so the analysis focuses on the processes and mechanisms of these changes.

In addition, the analytical framework draws on the model proposed by Leavy et al. (2011) and Chisanga et al. (2026), which emphasizes the role of stakeholder engagement in shaping perceptions and the success of CSR programs. Through this approach, the study identifies various obstacles to CSR implementation, such as differences in perception between companies and the public, as well as communication barriers, which have the potential to affect the effectiveness of environmental management.

To ensure consistency between field data and the focus of the research analysis, in-depth interviews conducted with key informants were organized and analyzed using a qualitative interview transcript matrix. This matrix serves as an analytical tool to link research variables, dimensions, analytical indicators, and key questions used in the interview process. Table 1 presents the

interview analysis structure used to assess CSR environmental management practices, and implementation, levels of community participation, company–community relations.

Table 1. Qualitative Interview Transcript Matrix

| No | Variable                      | Dimension               | Analysis Indicators                                             | Key Questions                                                                   | Data Source               | Analysis Techniques  |
|----|-------------------------------|-------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|----------------------|
| 1  | CSR Implementation            | Program Planning        | Community involvement in environmental program planning         | Is the community involved in the planning of environmental CSR programs?        | Interview                 | Thematic Coding      |
| 2  | CSR Implementation            | Program Implementation  | Types of CSR activities related to environmental management ( ) | What environmental programs does the company implement?                         | Interviews, CSR Documents | Thematic coding      |
| 3  | Community Participation       | Direct Engagement       | Level of community participation in environmental activities    | How is the community involved in waste management and environmental protection? | Interviews, Observations  | Descriptive analysis |
| 4  | Environmental Management      | Environmental Practices | Changes in community environmental behavior                     | Did environmental behavior change occur after the CSR program?                  | Interviews, Observations  | Narrative analysis   |
| 5  | Community Well-being          | Social & Health         | Environmental impact on community quality of life               | Do environmental conditions affect community health and well-being?             | Interview                 | Interpretive         |
| 6  | Corporate–Community Relations | Social Feedback         | Public perception of the company following CSR                  | What is the community’s attitude toward the company after the CSR program?      | Interview                 | Thematic analysis    |

Source: Research Findings

The interview matrix in Table 1 shows that data analysis was conducted systematically using thematic coding, descriptive analysis, and narrative analysis in accordance with the characteristics of each variable. This approach allows researchers to identify the main patterns emerging from the interview and observation data, while comprehensively interpreting the relationship between CSR implementation, community

participation, and changes in environmental behavior.

#### **Variables**

The research variables in this study are the eight areas of CSR programs implemented by the company during 2024, namely education, health, real income from employment, economic independence, social and cultural affairs, community participation in sustainable environmental management, community institution

building, and community empowerment in the area of infrastructure. In addition, this study also considers the impact of CSR on the company's operational performance as a supporting variable.

The assessment indicators focus on the implementation of CSR programs and their

contribution to community participation and environmental management in the areas surrounding the mining sites. Details of the variables, dimensions, and performance indicators for CSR implementation are presented in Table 2.

Table 2. Research Variables for CSR Implementation Performance at PT Golden Great Borneo

| No | Variable (Field)         | Dimension                 | Implementation Indicators                                   | Environmental Focus                         |
|----|--------------------------|---------------------------|-------------------------------------------------------------|---------------------------------------------|
| 1  | Education                | Environmental Education   | Educational assistance, school facilities, trash cans       | Environmental education                     |
| 2  | Health                   | Environmental Health      | Posyandu, waste management, outreach                        | Sanitation & environmental health           |
| 3  | Real Income              | Skills & Entrepreneurship | Agricultural, livestock, and fisheries training             | Sustainable resource utilization            |
| 4  | Economic Self-Reliance   | SMEs                      | Processing of agricultural products, infrastructure support | Local green economy                         |
| 5  | Social & Cultural        | Social Cohesion           | Social and cultural activities                              | Social stability in mining areas            |
| 6  | Environmental Management | Environment               | Waste banks, community cooperation, plant seedlings         | Ecosystem protection                        |
| 7  | Community Institutions   | Social Organizations      | SMEs, Youth Organizations, CSR Forums                       | Community environmental governance          |
| 8  | Infrastructure           | Basic Infrastructure      | Roads, bridges, boreholes                                   | Access to adequate environmental facilities |
| 9  | Operational Performance  | Social Perception         | Public satisfaction with CSR                                | Operational Social Support                  |

In addition to analyzing the impact of CSR on society and the environment, this study also examines the effect of CSR implementation on a company's operational performance. The analysis is based on the perceptions of the beneficiary communities regarding the alignment of CSR programs with their needs, as well as the communities' attitudes toward the company following the implementation of CSR programs. These community responses serve as key indicators in assessing the sustainability of the relationship between the company and local communities, which ultimately contributes to the stability and operational sustainability of the company in the mining region.

## RESULTS AND DISCUSSION

### Community empowerment program

The implementation of PT Golden Great Borneo (GGB) Community Empowerment and Corporate Social Responsibility (CSR) Program in 2024 demonstrates that the planning and execution of the program are not only based on the company's

internal policies but also take into account the results of a needs assessment of communities in the vicinity of the mine's operational area. These findings were obtained through data triangulation between in-depth interviews with key informants, participatory observation at the community level, and a review of the company's CSR program documents. This triangulation approach allowed researchers to verify the consistency between the program planning outlined in the CSR documents and the experiences and perceptions of the community as beneficiaries.

Interviews with village heads and community leaders in the company's immediate vicinity indicate that most of the CSR programs implemented are considered relevant to the social and environmental needs of the local community. This finding is reinforced by the results of participatory observation, which demonstrate the community's direct involvement in various CSR activities, particularly in environmental management programs and community-based social initiatives. Thus, PT Golden Great Borneo (GGB)

CSR implementation in 2024 can be understood as an effort to apply a Full Bottom-Up approach, in which the community not only serves as beneficiaries but is also involved in the process of identifying needs and implementing programs.

To provide an empirical overview of the scope and distribution of community empowerment programs implemented by PT Golden Great Borneo

(GGB), the 2024 CSR program documentation data is presented in Table 3. This table is not intended to be the sole research result but rather as a basis for triangulation, which is then analyzed alongside interview findings and field observations to assess the effectiveness of implementing CSR programs based on a Full Bottom-Up approach.

Table 3. PT Golden Great Borneo (GGB) PPM/CSR Programs for 2024

| Annual PPM Program | Annual PPM Activity Plan                                 | Activity Location                                                                                                                                                                                                         | Requirements | Total Implementation | Notes                                                                  |
|--------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------|------------------------------------------------------------------------|
| 1. Education       | Educational Achievement Assistance                       | SDN 1, SDN 2, SDN 7, SDN 10, SDN 11, SDN 12, SDN 13, MTs, MAN, SMAN 1                                                                                                                                                     | 11           | 1                    | Collaboration with schools and the Department of Education and Culture |
|                    | Assistance for temporary education staff                 | Early Childhood Education, Elementary School 11, Elementary School 13, Junior High School                                                                                                                                 | 4            | 12                   | Collaboration with schools and the Department of Education and Culture |
|                    | Computer training and courses for youth and teachers     | Prabu Menang Village, Banjar Sari Village                                                                                                                                                                                 | 5            | 1                    | In collaboration with BLK and Karangtaruna                             |
|                    | Trash Can Donation                                       | SDN 1, SDN 2, SDN 7, SDN 10, SDN 11, SDN 12, SDN 13, MTs, MAN, SMAN 1                                                                                                                                                     | 11           | 1                    | Partnership with Gramedia Group                                        |
|                    | Donation of books to the school library                  | Elementary School 1, Elementary School 2, Elementary School 7, Elementary School 10, Elementary School 11, Elementary School 12, Elementary School 13, Junior High School, Senior High School, State Senior High School 1 | 11           | 1                    | Collaboration with Gramedia and the Library Service                    |
| 2. Health          | Assistance for Posyandu, Toddler, and Elderly Activities | Prabu Menang Village, Banjar Sari Village                                                                                                                                                                                 | 5            | 6                    | Collaboration with community health centers and villages               |

|                           |                                                                                          |                                           |   |    |                                                                        |
|---------------------------|------------------------------------------------------------------------------------------|-------------------------------------------|---|----|------------------------------------------------------------------------|
|                           | Honorarium assistance for health workers at the GGB Community Health Center              | Prabu Menang Village                      | 1 | 12 | In collaboration with the village and the Health Department            |
|                           | Assistance for Facility Improvements at the UPT GGB Community Health Center Meeting Hall | Prabu Village won                         | 1 | 1  | Collaboration with Community Health Centers                            |
|                           | Health Education on Disease Prevention                                                   | Prabu Menang Village, Banjar Sari Village | 5 | 1  | Collaboration with the Seko Party and the Department of Education      |
|                           | Training in waste management                                                             | Prabu Menang Village, Banjar Sari Village | 5 | 1  | Partnership with Bank Sam pah                                          |
|                           | Laptop and Printer Assistance for the Head of the Community Health Center                | Prabu Menang Village                      | 2 | 1  | Cooperation with the Community Health Center                           |
| 3. Real Income from Work  | Agricultural Entrepreneurship Training, Peter Nakan, and Peri Kanan                      | Prabu Menang Village, Banjar Sari Village | 5 | 1  | Collaboration with Villages and Relevant Agencies                      |
|                           | Basic Training in Mining, Operations, Electronics, and Mechanics                         | Prabu Menang Village, Banjar Sari Village | 5 | 2  | Collaboration with BLK Lahat                                           |
|                           | Professional Skills Training for the general public who are currently employed           | Prabu Menang Village, Banjar Sari Village | 5 | 2  | Collaboration with BLK Lahat                                           |
|                           | Assistance with Goat Farming                                                             | Prabu Menang Village, Banjar Sari Village | 5 | 1  | In collaboration with the Village of , and the Department of Livestock |
| 4. Economic Self-Reliance | General SME Development Assistance                                                       | Prabu Menang Village, Banjar Sari Village | 5 | 1  | Collaboration with Villages and SMEs                                   |

|                                    |                                                                                                          |                                                          |   |    |                                                                   |
|------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---|----|-------------------------------------------------------------------|
|                                    | Training and Development for Culinary-Focused SMEs                                                       | Prabu Menang Village, Banjar Sari Village                | 5 | 1  | Collaboration with Villages and MSMEs                             |
|                                    | Specialized PKK Skills Training in Culinary Arts, Sewing, and Cosmetology                                | Prabu Menang Village, Banjar Sari Village                | 5 | 1  | Collaboration with BLK Lahat                                      |
|                                    | Agricultural Equipment, Seeds, and Fertilizer Assistance for Farmers                                     | Prabu Menang Village, Banjar Sari Village                | 5 | 1  | Collaboration with Villages                                       |
|                                    | Training on Processing Agricultural Products into Various Foods                                          | Prabu Menang Village, Banjar Sari Village                | 5 | 1  | Collaboration with the Village                                    |
|                                    | Food Assistance for Poor Families                                                                        | Prabu Menang Village, Banjar Sari Village                | 5 | 1  | Cooperation with the Village                                      |
| 5. Religious, Social, and Cultural | Financial Assistance for Quran Teachers and Sanitation                                                   | Prabu Menang Village, Banjar Sari Village                | 5 | 12 | Collaboration with the Village                                    |
|                                    | Qurban Animal Donations                                                                                  | Prabu Menang Village, Banjar Sari Village                | 5 | 1  | Collaboration with the Village                                    |
|                                    | Social Assistance and Natural Disasters                                                                  | Prabu Menang Village, Banjar Sari Village                | 5 | 12 | Collaboration with Villages and Local Governments                 |
|                                    | Assistance with Marawis, Qasidah, and Rai Rai Dance Equipment, including Instructors/Trainers            | Prabu Menang Village, Banjar Sari Village                | 5 | 1  | This program is part of our CSR efforts to preserve local culture |
|                                    | Provision of facilities and infrastructure for Quranic study ( , Iqro', reading books, and Quran tables) | Prabu Menang Village, Banjar Sari Village Islamic School | 5 | 1  | Collaboration with the Village                                    |
|                                    | Weaving training                                                                                         | Prabu Menang Village, Banjar Sari Village                | 5 | 1  | Collaboration with Villages and Relevant Agencies                 |

|                                                                                                                                                |                                                                                            |                                                      |   |    |                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------|---|----|------------------------------------------------------------------------|
|                                                                                                                                                | Celebration of Major Religious Holidays and Indonesian Independence Day                    | Prabu Menang Village, Banjar Sari Village            | 5 | 5  | Collaboration with Villages and Local Governments                      |
|                                                                                                                                                | Lahat Anniversary Celebration                                                              | Lahat Regency                                        | 1 | 1  | Collaboration with the Lahat Regional Government                       |
| 6. Providing Opportunities for the Community to Participate in the Sustainable Management of the Environment in the Areas Surrounding the Mine | Provision of Bentor Vehicles for Waste Transportation and TPS                              | Prabu Menang Village, Banjar Sari Village            | 5 | 1  | Collaboration with the Village Waste Bank and the Environmental Agency |
|                                                                                                                                                | Fruit Tree Seedling Assistance                                                             | Prabu Menang Village, Banjar Sari Village            | 5 | 1  | Collaboration with the Village and the Department of Agriculture       |
|                                                                                                                                                | Watering the yard or road                                                                  | Prabu Menang Village, Banjar Sari Village            | 5 | 12 | Collaboration with the Village                                         |
|                                                                                                                                                | Waste management training through the Waste Bank                                           | Prabu Menang Village, Banjar Sari Village            | 5 | 1  | Collaboration with the Village and the Environmental Agency            |
|                                                                                                                                                | Implementation of community cleanup activities                                             | Prabu Menang Village, Banjar Sari Village            | 5 | 6  | Cooperation with the Village                                           |
| 7. Establishment of Community Institutions to Support PPM                                                                                      | Assistance for entrepreneurship activities for the Youth Association and the Pramuka Group | Prabu Menang Village, Banjar Sari Village            | 5 | 1  | Collaboration with Karang Taruna and the Scouting Organization         |
|                                                                                                                                                | Formation of MSME Groups for Weaving and Agriculture in                                    | Prabu Menang Village, Banjar Sari Village, West Java | 5 | 1  | Included in the CSR program                                            |

|                                                       |                                                                                                                   |                                                                                    |   |   |                                                                     |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------|
|                                                       | Support for the Lahat Regency CSR-PKBL Forum Activities                                                           | Lahat Regency                                                                      | 1 | 1 | Collaboration with the Lahat Regency CSR-PKBL Forum                 |
| 8. Community Empowerment in the Infrastructure Sector | Assistance for the Construction and Renovation of Bridges                                                         | Prabu Menang Village, Banjar Sari Village                                          | 5 | 1 | Collaboration with the Village                                      |
|                                                       | Construction and Repair of Village Roads                                                                          | Prabu Menang Village, Banjar Sari Village                                          | 5 | 1 | Collaboration with the Village                                      |
|                                                       | Construction of School Facilities and Infrastructure, Boreholes, etc.                                             | SDN 1, SDN 2, SDN 7, SDN 10, SDN 11, SDN 12, SDN 13, MTs, MAN, SMAN 1 Merapi Timur | 5 | 1 | Collaboration with the Village                                      |
|                                                       | Assistance with Facilities and Infrastructure for Volleyball, Badminton, Basketball, etc.                         | Prabu Menang Village, Banjar Sari Village                                          | 5 | 1 | Collaboration with Villages                                         |
|                                                       | Assistance for the construction and renovation of sports venues for the 2023 South Sumatra Provincial Sports Week | Lahat Regency                                                                      | 1 | 1 | In accordance with the proposal and letter from the Regent of Lahat |
|                                                       | Construction of the                                                                                               | Prabu Menang Village, Banjar Sari Village                                          | 1 | 1 | Partnership with the Village and Gramedia Group                     |

Source: Processed research data

The data in Table 3 show that PT Golden Great Borneo (GGB) CSR programs cover eight main areas: education, health, increasing real income from employment, economic self-reliance, social and cultural affairs, community participation in environmental management, community institution building, and infrastructure development. However, the results of interviews and observations indicate that not all programs have the same level of participation and impact. Programs that directly involve the community in planning and implementation, particularly in the areas of environmental management and economic self-reliance, tend to demonstrate higher levels of

participation and sustainability compared to programs that provide direct aid.

#### **Implementation of CSR programs and environmental management**

Although PT Golden Great Borneo (GGB) CSR program covers various sectors of development, the results of the triangulation analysis indicate that the environmental management dimension is one of the strategic aspects of the overall program. The budget allocation of IDR 101,000,000 for environmental management indicates the company's special attention to issues of cleanliness and environmental sustainability in the areas surrounding the mine.

However, the size of the budget is not the sole indicator of the program's effectiveness.

Interviews with key informants indicate that programs such as motorized rickshaw assistance for waste collection, waste management training through waste banks, the provision of plant seedlings, and community-driven environmental cleanup activities encourage active community involvement in maintaining environmental quality. These findings are supported by the results of participatory observations, which show an increase in the frequency of community-driven cleanup activities and community-based waste management following the implementation of CSR programs.

From the perspective of the research conceptual framework, the environmental management program serves as a mechanism linking mining activities and the sustainability of ecosystem services. Community participation in waste management and environmental sanitation activities indicates a shift in environmental behavior, where communities are beginning to view environmental management as a shared responsibility between companies and local communities. These findings align with the views of Singh (2015), which emphasize that the success of community-based environmental management is largely determined by the level of community participation.

#### **Corporate social responsibility, community empowerment, and environmental behavior change**

The research findings indicate that CSR programs in the fields of education and health have an indirect link to environmental management. Based on interviews with village officials and educators, the provision of educational facilities, computer training, and support for sanitation facilities in schools contributes to raising environmental awareness among the younger generation. Meanwhile, health programs that include disease prevention education and waste management training play a role in improving the community's environmental health conditions.

These findings indicate that environmental management does not stand alone as a technical program, but is integrated with social and economic programs. Entrepreneurship training in the agriculture, livestock, and fisheries sectors, for example, encourages communities to utilize natural

resources more productively and sustainably. These results are consistent with the findings of Ofosu et al. (2020), which affirm that community economic empowerment is a critical prerequisite for the sustainability of environmental management in mining areas.

#### **CSR budget priorities and their implications for environmental sustainability**

An analysis of the distribution of the CSR budget reveals variations in funding allocations across programs. Religious, social, and cultural programs received the largest budget allocation, amounting to IDR 207,500,000, while economic empowerment and community institution-building programs received relatively smaller allocations. Nevertheless, interview results indicate that the public's perception of a program's success is not solely determined by the size of the budget, but by the level of their involvement in the program's planning and implementation processes.

The distribution of PT Golden Great Borneo (GGB)'s CSR budget in 2024 reflects the company's priorities in supporting social and environmental development in areas surrounding its mining operations. Although the largest share of the budget was allocated to the social and cultural sectors, the allocation for environmental management also indicates the company's commitment to environmental sustainability. This approach aligns with Campbell (2012), who argues that mining companies integrating social and environmental considerations into their CSR strategies tend to achieve stronger social legitimacy.

#### **Implications of CSR for corporate-community relations**

In addition to impacting the environment and community well-being, the implementation of CSR also influences the relationship between companies and local communities. Interview results indicate that community participation in the planning and implementation of CSR programs increases the level of social acceptance of the company's presence. Communities tend to have a more positive attitude toward companies when they are actively involved in environmental management and regional development.

In the context of mining sustainability, these findings are consistent with the findings of Lehavvy et al. (2011) and Mercer-Mapstone et al. (2018), which emphasize the importance of stakeholder

engagement in shaping public perception and social support for the company. Thus, CSR based on a full bottom-up approach serves not only as a regulatory obligation but also as a strategy for managing social and environmental risks in coal mining areas.

## CONCLUSION

This study concludes that the implementation of community empowerment programs by PT Golden Great Borneo (GGB) in Lahat Regency through a fully bottom-up approach plays a crucial role in strengthening environmental management and improving the well-being of communities living near coal mining areas. Actively involving the community in the planning and implementation of CSR programs enables the creation of programs that are better aligned with local needs and encourages behavioral changes among community members regarding environmental management.

The research findings indicate that integrated economic empowerment, education, health, and environmental management through community-based CSR not only improve the quality of life for communities but also help mitigate the environmental impacts of mining activities. Community involvement in environmental management activities strengthens a sense of ownership of the programs and supports the sustainability of the relationship between the company and local communities.

Overall, the Full Bottom-Up approach to CSR can be understood as a community-participation-based environmental management model in the coal mining sector. This model serves not only to fulfill the company's regulatory obligations but also as a strategy for environmental management and for strengthening the company's social legitimacy in supporting sustainable mining.

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