Journal of Social Research

P-ISSN: 2827-9832
E-ISSN: 2828-335x
Vol. 4, No. 11, November 2025
http://ijsr.internationaljournallabs.com/index.php/ijsr

Improving Performance, Value, and Quality of Environmental and Improvement Aspects by 10% through the Gemilang Program

Aifah Aifah *, Reggina Shafira Luthi, Trio Aris C., Wahyu Saputra, M. Osaegi A.
PT Putra Perkasa Abadi, Jobsite PT Borneo Indobara, Indonesia
Email: aifah_11@ppa.co.id*, rshafiraluthi@gmail.com, trioaris@ppa.co.id, wahyusaputrappa@gmail.com, muhammad.osaegi@ppa.co.id

ABSTRACT

The mining industry globally faces increasing pressure to enhance environmental performance and foster continuous improvement. According to the World Bank (2023), sustainable mining practices are critical for long-term operational viability, while McKinsey (2023) reports highlight that companies with robust environmental management systems achieve 15–20% better stakeholder confidence and regulatory compliance. The *Gemilang Program* is a continuous improvement initiative implemented at PT Putra Perkasa Abadi (PPA) Site BIB, aimed at enhancing the performance, value, and quality of the *Environmental (LH)* and *Improvement* aspects in the evaluation of Subcontractor Operational Responsible Persons (PJO). Based on the evaluation results of the second semester of 2024, the Environmental and Improvement aspect scores were 62.3 and 43.43, respectively (categorized as red–blue). These low scores pose significant implications for the sustainability rating and environmental reputation of national mining companies operating under stringent regulatory frameworks. Through the implementation of the *Gemilang Program*, various measures—such as intensive mentoring, training, provision of standardized evaluation formats, and a reward-and-punishment system—successfully improved the scores in the first semester of 2025 to 69.38 for the Environmental aspect and 61.09 for the Improvement aspect. These results represent significant increases of 11.36% and 40.66%, demonstrating the program's effectiveness in fostering a work culture focused on continuous improvement.

Keywords: *Gemilang Program, PJO Evaluation, Environment, Improvement, Subcontractor*

INTRODUCTION

Global mining operations are increasingly scrutinized for their environmental impact and capacity for innovation (Baloyi et al., 2023; Eniowo et al., 2026; Glover, 2026; Meyersfeld, 2017; Sidorenko & Sidorenko, 2026; Wang et al., 2026). The United Nations Environment Programme (UNEP, 2023) emphasizes that mining contractors must integrate sustainability metrics into their operational frameworks to meet international standards. Furthermore, research by Aboelmaged (2018) in the International Journal of Productivity and Performance Management demonstrates that continuous improvement programs significantly enhance organizational performance, particularly in resource-intensive industries. Singh and Singh (2020) in the TQM Journal further validate that Plan-Do-Check-Act (PDCA) methodologies within the mining sector can increase operational productivity by up to 30%, while Nugroho et al. (2022) in the Journal of Mineral Technology highlight the critical role of Mining Safety Management System (SMKP) evaluations in Indonesian mining contexts.

PT Putra Perkasa Abadi (PPA) is a national mining contractor operating under the coordination of PT Borneo Indobara (BIB). To support its mining operations, PPA collaborates with 36 subcontractor companies, consisting of 7 core companies and 29 non-core companies.

This classification refers to SOP PPA-BIB-SOP-SHE-35 concerning the Mining Services Company Management System, which defines:

- Core mining service companies as those directly involved in main mining activities such as blasting, mining, coal hauling, and mining safety and environmental operations.
- Non-core mining service companies as those supporting operational activities without being directly involved in the mining process, such as labor supply, employee transportation, catering, supporting construction, and equipment maintenance services.

Among the 36 companies, their fields of work include blasting services, mining support, fuel transportation, fabrication, autolube, tire repair, mechanical and fabrication helpers, employee transportation, equipment rental and mining services, catering, construction, repair services, labor supply, AC supply and service, equipment certification, dewatering, and electrical services. This diversity demands a comprehensive and objective evaluation system to ensure that each subcontractor meets the safety, environmental, and quality standards set by PPA and BIB.

To ensure subcontractor performance, compliance, and quality improvement, an evaluation of the Operational Responsible Person (PJO) is conducted using official instruments—Form Evaluasi Kinerja PJP_R03 and the PJP Evaluation Assessment Guidelines. This evaluation covers seven main aspects:

1. Technical Operational Aspect
   Evaluates the company's ability to carry out operations in accordance with technical standards, including work efficiency, appropriate equipment use, project licensing compliance, and accurate operational reporting.
2. Mining Safety Aspect
   Assesses the implementation of safety systems in the field, such as compliance with safe work procedures, use of personal protective equipment (PPE), incident reporting and handling, and worker safety training.
3. Mining Safety Management System (SMKP) Aspect
   Applicable only to core companies, this aspect evaluates the completeness of SMKP implementation based on Ministry of Energy and Mineral Resources (ESDM) guidelines, including management commitment, mining OHS organizational structure, internal SMKP audits, and follow-up programs on audit findings.
4. Environmental Management Aspect
   Focuses on compliance with environmental regulations and the execution of environmental management activities such as waste control, acid mine drainage management, emission monitoring, reclamation of work areas, and environmental reporting documentation.
5. Conservation Aspect
   Although not evaluated for all companies, conservation principles serve as additional indicators to ensure operational activities support resource efficiency and prevent significant environmental damage.
6. Mining Service Standardization Aspect
   Assesses company compliance with operational standards established by PPA–BIB, including business legality and documentation, equipment certification, workforce competency, and service quality standards.

7. Improvement (Innovation and Continuous Improvement) Aspect
   Evaluates ongoing improvement initiatives carried out by the company, such as process innovation, energy efficiency, productivity enhancement, and contributions to safety and environmental culture in the workplace.

Each aspect is assessed quantitatively on a 1–4 point scale, reflecting the level of compliance with the established standards:

- Score 1: Does not meet criteria or shows major nonconformities.
- Score 2: Partially meets criteria but requires significant improvement.
- Score 3: Meets most criteria with minor notes for improvement.
- Score 4: Fully meets criteria and demonstrates best practices.

The results from all aspects are compiled into a total score determining the subcontractor's performance rating:

- Black (≤ 50)
- Red ($50 < \text{Score} < 65$)
- Blue ($65 \leq \text{Score} \leq 80$)
- Green ($80 < \text{Score} \leq 90$)
- Gold (>90)

This evaluation not only functions as a monitoring mechanism but also serves as a coaching and development tool to foster a work culture aligned with Occupational Safety, Health, and Environmental (K3LH) principles and continuous improvement in PT Borneo Indobara's mining operations.

Based on the 2024 evaluation results, 65.71% of subcontractors received a red rating and 34.29% a blue rating. Among the six evaluated aspects, the lowest scores were found in Environmental Management (62.30) and Improvement (43.43). According to Ali et al. (2021) in Resources Policy, such performance gaps in sustainability indicators are common barriers in emerging mining economies, often attributed to inadequate training, unclear documentation standards, and limited continuous improvement culture. This decline in scores has implications for the sustainability rating and environmental reputation of national mining companies, potentially affecting stakeholder confidence and regulatory standing. These results indicate the need for a strategic effort to achieve a 10% increase in performance, value, and quality in the Environmental and Improvement aspects through the Gemilang Program.

METHOD

This study employed applied research with a quantitative descriptive and evaluative approach utilizing the Quality Control Circle (QCC) method. The program adopted the Quality Control Circle (QCC) approach, which consists of eight key steps: (1) Problem Identification and Stratification; (2) Root Cause Analysis; (3) Solution Determination; (4) Improvement Planning; (5) Implementation; (6) Evaluation; (7) Standardization; and (8) Setting the Next Theme. Data were collected through partner performance evaluations, internal audits, interviews, and field observations. This approach enables objective measurement and progress monitoring of performance improvement across the two main aspects.

RESULTS AND DISCUSSION

The Gemilang Program was implemented from February to August 2025 using the Quality Control Circle (QCC) framework with the Plan–Do–Check–Action (PDCA) cycle. Its

implementation comprised six main programs designed based on the results of root cause analysis and a solution prioritization matrix.

1. Program 1 – Comprehensive Mentoring and Monitoring (Safety Friendly)
   This activity served as direct coaching for all partners, particularly to help them understand and complete documentation for each evaluation aspect. Mentoring was conducted periodically by the SHE team and custodians using the *"Safety Friendly"* approach—a communicative, coaching-based guidance method.
   Result: Companies began compiling evaluation evidence gradually from the beginning of the semester rather than just before verification. This led to more consistent data and more complete evaluation evidence.

Figure 1. Safety Friendly All Partners
Source: PT Putra Perkasa Abadi (2025)

2. Program 2 – Knowledge Enhancement Program (Safety Knowledge)
   This program aimed to strengthen partners' understanding of evaluation indicators, particularly for Environmental and Improvement aspects. Activities included workshops,

coaching clinics, and joint verifications conducted by the SHE Department and custodians before the Final PJP Evaluation. Findings from the verification stage were given a two-week correction period to maximize document compliance and results.
Result: Partners gained a better understanding of evaluation parameters, reduced documentation errors, and improved the quality of assessed evidence.

Figure 2. Workshop, Training, and Document Verification Activities
Source: PT Putra Perkasa Abadi (2025)

3. Program 3 – Standardization of PJP Evaluation Document Format
   Before program implementation, document formats varied among companies, making verification difficult and confusing for partners. Standardization was achieved by introducing the official form BIB-HSE-PPO-F-170-01 R03 issued by PT Borneo Indobara (as the owner of PT Putra Perkasa Abadi) along with its evaluation guidelines. This provided transparency in the scoring process so that all partners could understand their score levels from 1 to 4.
   Result: Evaluation documents became uniform across companies, easier to verify, and increased objectivity in scoring across aspects.

Figure 3. Provision of Standard Forms and Socialization for Each Partner with Custodian

Source: PT Putra Perkasa Abadi (2025)

4. Program 4 – Timeline and Digital Reminder System
   Delays in report submissions and weak progress monitoring led to the creation of a digital reminder system through a protected spreadsheet. This system tracked document progress for each aspect and issued automatic alerts.
   Result: Reporting timeliness improved significantly, with document submission delays reduced by up to 80% compared to the previous semester.
5. Program 5 – Reward & Punishment Policy
   To boost motivation, a reward policy was applied for companies showing the best improvement, while further coaching was provided for those with lower scores. Result: A positive competition emerged among subcontractors; active participation in evaluation activities increased, especially among companies that previously held a Red rating.
6. Program 6 – Appointment of Evaluation PIC (Person in Charge)
   Each company was required to appoint a specific person responsible for collecting and maintaining evaluation data. The appointed document control personnel were given clear

job descriptions and guided through the *Safety Friendly* mentoring approach. Result: The reporting process became faster and more structured, facilitating smoother coordination between companies, custodians, and the SHE team.

Quantitative Results and Program Impact

Aspect	Score in Semester 2 of 2024	Score in Semester 1 of 2025	% Increase/Decrease
Environmental Aspect	62.3	69.38	11.36%
Improvement Aspect	43.43	61.09	40.66%

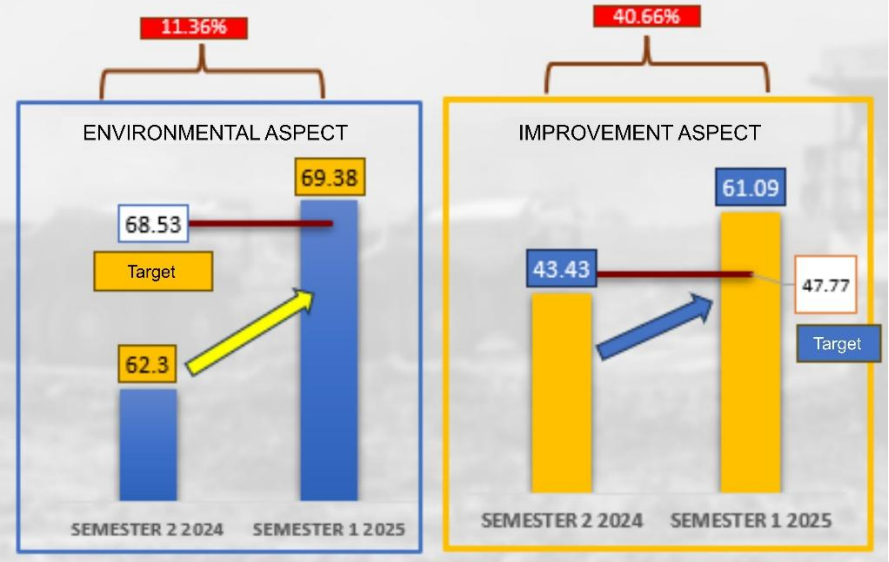

Figure 4. Results of the Gemilang Implementation
Source: PT Putra Perkasa Abadi (2025)

After the implementation of these six programs from February to August 2025, the first semester evaluation of 2025 showed significant improvements:

- Environmental Aspect: increased from 62.3 to 69.38 (+11.36%)
- Improvement Aspect: increased from 43.43 to 61.09 (+40.66%)

Beyond numerical growth, several companies previously rated Red moved to the Blue and even Green categories. Verification–final data graphs indicated better consistency and reporting accuracy across all custodians. Four companies achieved Green ratings in the first semester of 2025, reflecting tangible improvement in managing Environmental and Improvement aspects.

The differential improvement rates between the Environmental aspect (11.36%) and Improvement aspect (40.66%) warrant deeper analysis. According to the Juran Trilogy framework (Planning-Control-Improvement), improvement initiatives require not only technical capacity but also organizational readiness and resource allocation (Juran, 1999). The more substantial gain in the Improvement aspect can be attributed to its nature as a performance-driven domain where behavioral change and innovation culture respond more rapidly to structured mentoring and incentive systems. This finding aligns with Singh and

Singh (2020), who demonstrated that PDCA implementation in the mining sector can increase productivity by up to 30%; the 40.66% improvement in this study exceeds that benchmark, suggesting that the combined effect of mentoring, standardization, and reward mechanisms created a multiplier effect on performance outcomes.

Conversely, environmental performance improvements, while significant, showed more modest gains. This pattern is consistent with Zhou et al. (2021), who found that environmental barriers are more difficult to address due to structural constraints such as limited funding, regulatory complexity, and the need for capital-intensive infrastructure investments. The Deming Cycle (Plan-Do-Check-Act) emphasizes that sustainable improvement requires not just process changes but also systemic capacity building (Deming, 1986). Environmental compliance often necessitates long-term commitments to equipment upgrades, monitoring systems, and regulatory documentation—factors that extend beyond the immediate impact of training and mentoring programs.

The increase in Environmental scores demonstrated the success of companies in implementing more structured documentation and environmental monitoring systems. Meanwhile, the sharp rise in Improvement scores reflected a stronger culture of innovation and commitment to continuous improvement among partners.

In addition to score improvements, the Gemilang Program successfully fostered a collaborative culture among the SHE Department, custodians, and subcontractors. Each company became more open to evaluation, more proactive in innovation, and more aware of the importance of compliance with PT Putra Perkasa Abadi's management systems.

CONCLUSION

The implementation of the Gemilang Program at PT Putra Perkasa Abadi (PPA) effectively enhanced the performance, value, and quality of the Environmental and Improvement aspects by applying a systematic Quality Control Circle (QCC) approach. Six key initiatives—comprehensive mentoring, knowledge enhancement, document standardization, digital reminder systems, reward and punishment policies, and designated evaluation PICs—fostered a collaborative and continuously improving work culture. The recorded improvements of 11.36% in the Environmental aspect and 40.66% in the Improvement aspect highlight the impact of structured, participatory coaching in raising awareness about compliance, efficiency, and innovation to support mining safety, health, and environmental standards. Future research could explore the long-term sustainability of these improvements and the potential adaptation of the Gemilang Program framework in different mining sites or sectors to validate its broader applicability.

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