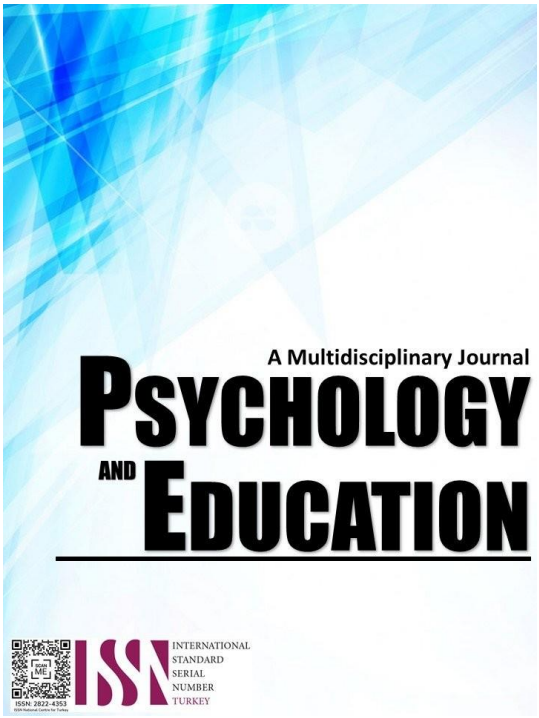
ASSESSMENT OF THE MINING OPERATION IN NARRA, PALAWAN: BASIS FOR PROGRAM AND POLICY IMPLEMENTATION



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Research Article

Assessment of the Mining Operation in Narra, Palawan: Basis for Program and Policy Implementation

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Abstract

This descriptive correlation study aimed to determine the demographic profile of the local people in Narra, Palawan, and their perception on the impact of mining on socioeconomic and political development. Data were gathered from respondents through structured questionnaires, and statistical analyses were conducted to examine the associations between demographic variables and perceptions of mining impacts. The result revealed that the majority of respondents were adults, predominantly males, with varied occupations, primarily farming and fishing. They had been residents of the barangay for an extended period, and most were high school graduates. Respondents perceived significant environmental, social, economic, health, and political impacts of mining activities in their community. The study also found a significant association between demographic profile variables such as age, sex, occupation, and years of residency, educational attainment, and perceptions of mining impacts. Specifically, respondents agreed that mining operation had adverse effects on the environment, social aspects, economic condition, and health outcomes. However, they perceived a high level of transparency and accountability in the governance mining activities. Overall, while there were moderate associations between age, sex, and perceptions of environmental impacts, no significant associations were found between demographic variables and perception of social, health, economic, and political impacts. These findings underscore the complex interplay between demographic characteristics and perceptions of mining impacts, highlighting the need for context-specific policy interventions to address community concerns and promote sustainable development in mining-affected areas.

Keywords: *mining operation, program, policy implementation*

Introduction

Mining is a crucial industry for many countries, it is an essential economic activity that has contributed significantly to the growth and development of many countries, including the Philippines, as it provides economic benefits and generates employment opportunities. However, mining can have adverse environmental and social impacts, particularly in areas where local people communities reside.

Mining has ushered in a blend of opportunities and challenges for local communities on the socio-economic front. While it has catalyzed job creation, spurred economic growth, and bolstered fiscal revenue for local administrations through taxes and royalties, these advantages often come at a price. Mining operations can disrupt traditional livelihoods, degrade the environment, and exacerbate social disparities. The displacement of communities, loss of land and resource access, and environmental degradation are among the socio-economic ramifications documented in areas impacted by mining.

Moreover, the political landscape within these communities has undergone a metamorphosis due to the presence of mining companies and their vested interests. The influx of external actors, comprising government bodies, corporate entities, and civil society organizations, has intricately interwoven local governance structures and decision-making processes. Conflicts over land rights, resource ownership, and development agendas have arisen, fostering discord and factionalism within communities.

Additionally, concerns have been raised regarding the integrity and accountability of governance institutions due to the influence exerted by mining interests on local politics, evidenced through activities such as campaign financing, lobbying, and patronage.

The province of Palawan, located in the Philippines, stands as a microcosm of the intricate interplay between mining activities and the socio-economic and political development of local communities. Palawan's natural wealth, including its mineral resources, lush forests, and pristine coastal areas, has attracted the attention of mining companies seeking to capitalize on its economic potential. However, the pursuit of mineral extraction has not been without controversy, as it has raised concerns about its impact on the livelihoods, cultures, and political dynamics of indigenous and rural communities in the region.

Barangay Bato-Bato, Princess Urduja, and Calategas Narra are among the areas in Palawan that have been directly affected by mining activities. These communities, predominantly inhabited by indigenous peoples and rural settlers, rely heavily on the land and natural resources for their sustenance and way of life. The introduction of mining operations in these areas has introduced significant changes, both positive and negative, to their socio-economic fabric and political landscapes.

Beneath the veneer of mining activities in Narra, Palawan, lies a complex nexus of socio-economic, environmental, and health dynamics that significantly impact local communities. While mining is often hailed as a pivotal economic driver, it also poses a plethora of challenges that necessitate a comprehensive understanding and proactive policy responses.

Primarily, the environmental aspect looms large in the context of mining operations. Mineral extraction frequently precipitates

extensive environmental degradation, encompassing deforestation, soil erosion, and water contamination. Palawan's fragile ecosystems, renowned for their biodiversity and ecological significance, are especially vulnerable to the adverse effects of mining activities. The disruption of natural habitats and the release of pollutants into the environment pose enduring threats to the ecological equilibrium and sustainability of the region.

Simultaneously, the health ramifications of mining activities cannot be understated. Exposure to mining-related pollutants, such as heavy metals and toxic chemicals, can have deleterious effects on the well-being of local residents. Respiratory ailments, dermatological disorders, and waterborne illnesses afflict communities residing in close proximity to mining sites. Furthermore, insufficient healthcare infrastructure and restricted access to medical services compound the health challenges faced by vulnerable populations, accentuating the exigency for targeted interventions to safeguard public health.

In addition to environmental and health concerns, the livelihood aspect is pivotal for communities reliant on natural resources for sustenance. Traditional livelihoods like agriculture, fishing, and forestry are frequently disrupted or displaced by mining operations, precipitating income loss and food insecurity. The socio-economic fabric of local communities is profoundly impacted, with marginalized groups, particularly indigenous populations, bearing the brunt of economic dislocation and social upheaval.

Amidst this complex backdrop, it becomes imperative to comprehensively assess the holistic impact of mining on the socio-economic, political, health, and environmental development of local communities in Barangay Bato-Bato, Princess Urduja, and Calategas Narra, Palawan. Such an evaluation demands a nuanced comprehension of the interplay between various social, economic, and political factors that influence community dynamics and outcomes. It entails scrutinizing not just the immediate effects of mining operations on livelihoods and living standards but also delving into the broader repercussions for governance structures, social harmony, and cultural identity.

Moreover, a thorough examination of the health and environmental aspects is essential to grasp the full extent of mining's impact on the well-being of residents and the ecological integrity of the region.

By undertaking this study, we aim to contribute to the body of knowledge on the socio-economic and political dimensions of mining in Palawan. Specifically, we seek to document the experiences and perspectives of local communities in Barangay Bato-Bato, Princess Urduja, and Calategas Narra, shedding light on their aspirations, concerns, and strategies for coping with and adapting to mining-related changes. Through a combination of qualitative and quantitative research methods, including interviews, surveys, and participatory mapping exercises, we endeavor to capture the complexity and nuance of community experiences and articulate actionable recommendations for policymakers, practitioners, and other stakeholders.

Research Questions

The study aimed to determine the assessment of mining operation in Narra, Palawan: Basis for program and policy implementation Specifically, it sought answers to the following questions:

1. What is the demographic profile of the respondents in terms of:
    1.1. age;
    1.2. sex;
    1.3. educational level;
    1.4. occupation; and
    1.5. years of residency;
2. What are the assessments of the respondents in the mining operation in Narra, Palawan as to:
    2.1. Environmental aspect
    2.2. Socio-economic
    2.3. Health aspect;
    2.4. Political aspect
3. How does the demographic profile of the respondents influence their assessment in the mining operation in Narra, Palawan?
4. What policies and program can be developed

Methodology

Research Design

The researchers employed a descriptive quantitative and qualitative methodological approach to comprehensively assess the mining operation in Narra, Palawan. This mixed-methods approach allowed for a thorough examination of various facets of the mining activities, encompassing both quantitative data analysis and qualitative insights.

The quantitative aspect of the study involved the systematic collection and analysis of numerical data related to the mining operation. In addition to quantitative analysis, the researchers employed qualitative methods to explore the subjective experiences, perceptions, and perspectives of key stakeholders affected by the mining operation. This qualitative component involved conducting interviews, focus group discussions, and participant observations with community members, local leaders, government officials, environmental

advocates, and representatives from mining companies.

By combining quantitative and qualitative approaches, the researchers were able to gain a more comprehensive understanding of the complexities surrounding the mining operation in Narra, Palawan. Ultimately, this comprehensive approach facilitated evidence-based decision-making, informed policy formulation, and guided program implementation aimed at addressing the challenges and opportunities associated with mining activities in Narra, Palawan

Participants

The researchers determined the sample size of 389 respondents through careful consideration of various factors, including the scope of the study, the desired level of precision, and the available resources.

To derive this number, researcher have employed statistical formulas or guidelines for determining sample size in survey research, considering factors such as the population size, expected response rate, and desired margin of error. Additionally, the researchers likely aimed to ensure a representative sample that adequately captures the diversity of perspectives and experiences related to the mining operation in Narra, Palawan.

The purposive sampling approach allowed the researchers to intentionally select participants who are most relevant to the study objectives, ensuring representation from key stakeholder groups such as indigenous people, local government officials, mining company representatives, and other stakeholders directly affected by the mining activities. This methodological choice aimed to maximize the richness and depth of data collected, facilitating a comprehensive analysis of the socio-economic, environmental, and political impacts of the mining operation.

The research employed a custom-designed questionnaire as the primary data collection tool. This questionnaire survey was structured to gather quantitative data regarding the socio-economic impacts of mining activities and the effectiveness of mitigation measures. It encompassed questions addressing various aspects such as socio- economic conditions, political developments, and community involvement.

The survey targeted indigenous communities and other stakeholders directly affected by the mining operations. By administering the survey to these key groups, the research aimed to capture a comprehensive understanding of the multifaceted impacts of mining and the effectiveness of mitigation efforts from the perspectives of those most directly involved.

Through this methodological approach, the research sought to gather empirical data that would inform a nuanced analysis of the socio-economic dynamics, political implications, and community engagement surrounding mining activities in the study area. This comprehensive data collection process was essential for generating insights that could guide policy-making, community development initiatives, and sustainable resource management strategies in the context of mining operations.

Data Analysis

In the study, various statistical tools were utilized to analyze the data and derive meaningful insights. These tools included frequency counts, percentages, mean, Eta correlation, and standard deviation.

Frequency counts and percentages were employed to depict the demographic profile of the respondents, providing a clear overview of their characteristics. This statistical approach allowed for a concise presentation of the distribution of respondents across different categories such as age, gender, educational background, and occupation.

Mean and standard deviation were utilized to quantify the impact of mining activities on the socio-economic and political development of the local people in Narra, Palawan. By calculating the mean, the researchers were able to determine the average level of impact experienced by the respondents, while the standard deviation provided a measure of the variability or dispersion of these impacts within the population.

Eta correlation analysis was conducted to investigate the relationship between the respondents' demographic profiles and their perceptions of the impact of mining on socio-economic and political development. This statistical method helped identify any associations or patterns between specific demographic characteristics and the perceived effects of mining activities.

Overall, these statistical tools were essential for systematically analyzing the data collected in the study, facilitating a comprehensive understanding of the socio-economic and political ramifications of mining operations in Narra, Palawan. Through their application, the researchers were able to uncover meaningful insights and draw robust conclusions that informed the discussion and recommendations presented in the study

Results and Discussion

In this section, the study delves into the data collected, providing a detailed analysis and interpretation of the findings. The section offers an in-detail exploration of the information gathered through various research methods, shedding light on key insights, patterns, and trends uncovered during the course of the study.

Demographic Profile

Table 1. *Demographic Profile of the Respondents*

Demographic Profile	*f*	*%*
Age		
9 to 17	7	1.80
18-30	123	31.62
31 to 60	220	56.56
More than 60	39	10.03
Total	389	100.00
Sex		
Male	212	54.50
Female	175	44.99
Did not Reveal	2	0.51
Total	389	100.00
Occupation		
Construction	13	3.34
Farmer	99	25.45
Fisherman	62	15.94
Government Employee	51	13.11
Housewife	50	12.85
Miner	29	7.46
Student	56	14.40
Vendor	29	7.46
Total	389	100.00
Years of Residency in Barangay		
Less than 10	29	7.46
11 to 20	46	11.83
21-30	80	20.57
31-40	86	22.11
41-50	68	17.48
41-50	68	17.48
51-60	45	11.57
More than 60	35	9.00
Total	389	100.00
Educational Attainment		
No Formal Schooling	71	18.25
Elementary	91	23.39
High School	89	22.88
Vocational	49	12.60
College	22	5.66
Masters	67	17.22
Total	389	100.00

It can be seen that more than half (56.56%) are adults. Young adults comprise 31.62% of the respondents, while seniors comprise 10.03%. The remaining 1.80% are teens. The data implies that the respondents of the study are adults.

Males represented 54.50% and females accounted for 44.99%. There are 0.51% of the respondents who did not reveal their sex. The data implies that males outnumbered females.

The respondents' occupations are as follows: farmers (25.45%), fishermen (15.94%), students (14.40%), government employees (13.11%), housewives (12.85%), miners (7.46%), vendors (7.46%), and construction (3.34). It shows that the respondents' occupations vary, with farming and fishing being the highest percentages.

As to the number of years residing in the barangay, most have been residing for 31-40, accounting for 22.11% of the total respondents; those resident for 21-30 years accounted for 20.57%, 41-50 years comprised 17.48%. Those already living in the locality for 11 to 20 years accounted for 11.83%. 11.57% of the respondents lived in the area, 11.57% and 9.00% lived in the barangay for more than 60 years, while those living there for less than 10 years accounted for 7.46%. The data implies that the respondents are residents of the barangay for an extended period.

Most respondents are elementary graduates, accounting for 23.39%, while high school graduates account for 22.88%. Those who don't have formal schooling accounted for 18.25%, and those with master's degrees accounted for 17.22%. Those with vocational degrees comprised 12.60%, and those with college degrees accounted for 5.66%. The data implies that most of the respondents are high school graduates.

Perception of the Residents on the Impact of Mining

Table 2. *Perception of the Residents on the Impact of Mining*

Aspects	*Mean*	*SD*	*Interpretation*
Environmental	2.04	0.96	Positive
Social Economic	2.16	0.94	Positive
Health	2.24	1.04	Positive
Political	2.22	1.03	Positive
Composite Mean	2.16	0.99	Positive

Legend: 4.21 – 5.00 (Very Negative) | 3.41 – 4.20 (Negative) | 2.61 – 3.40 (Neutral) | 1.81 – 2.60 (Positive) | 1.00 – 1.80 (Very Positive)

The analysis of the impact of mining activities, as depicted in Table 2, highlights the perceptions of the respondents regarding various aspects of mining operations. Overall, the findings suggest that the respondents generally believe that mining activities have a positive impact.

The highest mean score of 2.24 was recorded for the health aspect, indicating that respondents perceive mining to have a relatively strong positive influence on health- related factors. Following closely is the political impact, with a mean score of 2.22, suggesting that respondents also perceive mining to have a significant positive effect on political dynamics within the community.

Additionally, the socio-economic impact garnered a mean score of 2.16, indicating a moderate positive perception among respondents regarding the socio- economic benefits derived from mining activities. Meanwhile, the environmental impact received a slightly lower mean score of 2.04, suggesting that while respondents still perceive some positive effects, there may also be concerns regarding environmental consequences associated with mining operations.

Overall, the composite mean score of 2.16 suggests that respondents perceive mining activities to have a predominantly positive impact across all aspects examined in the study. These findings imply that the local community views mining as a beneficial contributor to various aspects of life, including health, politics, socio-economic conditions, and the environment. However, it is essential to interpret these perceptions cautiously, considering potential biases or limitations in the data collection process and acknowledging that individual experiences and perspectives may vary within the community

Hypothesis Testing

Table 3. *Association Between the Profile of the Respondents and their Perception on the Impact of Mining Operations*

	Variables				
Profile	*Perception of the Impact*	*R Square*	*Sig.*	*Interpretation*	*Association*
Age	Environment	0.444	0.000	Significant	Moderate
	Social	0.445	0.100	Insignificant	Moderate
	Economic	0.252	0.450	Insignificant	Weak
	Health	0.723	0.650	Insignificant	Strong
	Political	0.250	0.030	Significant	Weak
Sex	Environment	0.445	0.000	Significant	Moderate
	Social	0.045	0.650	Insignificant	Weak
	Economic	0.710	0.000	Significant	Strong
	Health	0.718	0.000	Significant	Strong
	Political	0.004	0.070	Insignificant	Weak
Occupation	Environment	0.251	0.010	Significant	Weak
	Social	0.003	0.875	Insignificant	Weak
	Economic	0.270	0.878	Insignificant	Weak
	Health	0.255	0.673	Insignificant	Weak
	Political	0.342	0.320	Insignificant	Moderate
Years of Residency	Environment	0.250	0.010	Significant	Weak
	Social	0.016	0.455	Insignificant	Weak
	Economic	0.782	0.007	Significant	Strong
	Health	0.260	0.040	Significant	Weak
	Political	0.345	0.672	Insignificant	Moderate

Educational Attainment	Environment	0.258	0.008	Significant	Weak
	Social	0.204	0.037	Significant	Weak
	Economic	0.004	0.969	Insignificant	Weak
	Health	0.015	0.878	Insignificant	Weak
	Political	0.018	0.856	Insignificant	Weak

Legend: -0.30 to +0.30 (Weak) | -0.50 to -0.31 or 0.31 to 0.50 (Moderate) | -0.90 to -0.51 or 0.51 to 0.90 (Strong) | -1.00 to -0.91 or 0.91 to 1.00 (Very Strong) | Significant if $p < 0.05$

Table 3 provides insights into the relationship between respondents' profiles and their perceptions of the impacts of mining operations across various dimensions. Eta correlation analysis was conducted to assess the strength of association between demographic factors and respondents' perceptions.

The findings reveal several notable associations. Firstly, there was a moderate association between age and perception of environmental impact, as well as between sex and perception of environmental impact. This suggests that age and sex moderately influence how respondents perceive the environmental consequences of mining activities.

However, weaker associations were observed between age and perception of political impact, occupation and perception of environmental impact, years of residency and perception of environmental and health impacts, as well as educational attainment and perception of environmental and social impacts. These findings suggest that while these demographic factors may have some influence, their impact on perceptions is relatively weak.

Conversely, strong associations were found between sex and perception of economic and health impacts, as well as between years of residency and perception of economic impact. This indicates that sex and years of residency strongly influence respondents' perceptions of the economic and health consequences of mining activities.

Interestingly, no significant associations were found between certain demographic factors and perceptions of specific impacts. For instance, there was no significant association between age and perception of social, health, and economic impacts, or between occupation and perception of various impacts. Similarly, null hypotheses were accepted for certain associations, indicating that these demographic factors do not significantly influence respondents' perceptions of certain impacts.

However, null hypotheses were rejected for associations between age and perception of environmental and political impacts, sex and perception of environmental, economic, and health impacts, occupation and perception of environmental impact, years of residency and perception of environmental, economic, and health impacts, as well as educational attainment and perception of environmental, social, and economic impacts. This suggests that these demographic factors do indeed have a significant influence on respondents' perceptions of these particular impacts.

Overall, these findings underscore the complex interplay between demographic characteristics and perceptions of mining impacts, highlighting the need for nuanced consideration of various factors in understanding community perspectives on mining activities.

In light of the multifaceted impacts of mining activities on local communities, the development of effective policies and programs is paramount to ensure sustainable development and enhance the well-being of affected populations.

In response to the question about policies and programs that can be developed based on the study's findings, the respondents provided a diverse range of insights and recommendations.

Several respondents emphasized the importance of stringent environmental protection policies. They stressed the need for regulations that prioritize the conservation of natural resources, minimize pollution, and mitigate the adverse environmental effects of mining activities. One respondent suggested the implementation of regular environmental audits and strict compliance monitoring to ensure sustainable resource management.

Another key recommendation highlighted by the respondents was the development of community engagement programs. Many emphasized the significance of fostering meaningful dialogue and collaboration between mining companies, government agencies, and local communities. They proposed the establishment of community-based resource management programs to empower residents, particularly indigenous groups, to participate in decision-making processes and voice their concerns effectively.

Social protection initiatives emerged as a central concern among the respondents, particularly in light of the strong association between demographic factors and perceptions of socio-economic impacts. Respondents advocated for the implementation of programs that provide support for vulnerable communities affected by mining activities. These initiatives could include livelihood support programs, access to healthcare services, and compensation mechanisms for displaced individuals.

Corporate social responsibility (CSR) efforts were also highlighted as a crucial aspect of policy development. Respondents emphasized the importance of encouraging mining companies to adopt comprehensive CSR programs that prioritize community development, environmental conservation, and social welfare. They suggested that collaborative partnerships between companies, government agencies, and local communities could facilitate the implementation of sustainable development projects that benefit all stakeholders.

Education and awareness campaigns were proposed by several respondents as essential components of policy development. They stressed the need for educational initiatives to raise awareness about the environmental, social, and economic consequences of mining activities. These campaigns could provide training and information to local residents, empowering them to advocate for their rights, participate in decision-making processes, and adopt sustainable practices.

Economic diversification strategies were also recommended by respondents as a means of reducing dependency on mining and promoting long-term economic resilience. They suggested investing in alternative livelihood opportunities such as eco-tourism, agriculture, and small-scale enterprises to mitigate the risks associated with fluctuations in the mining industry and build sustainable local economies.

Finally, respondents underscored the importance of establishing robust research and monitoring frameworks to continuously assess the impacts of mining activities and inform evidence-based decision-making. They emphasized the need for regular evaluations and data collection efforts to identify emerging challenges, evaluate the effectiveness of existing policies, and guide the development of targeted interventions to address community needs.

In conclusion, the respondents provided a comprehensive range of recommendations for the development of policies and programs based on the study's findings. Their insights underscored the importance of prioritizing environmental protection, community engagement, social welfare, corporate responsibility, education, economic diversification, and research in ensuring sustainable development and enhancing the well-being of local communities affected by mining activities.

Conclusions

Based on the findings of the study, the following conclusions were drawn.

In respondents' terms of age, states that more than half are adults and most of them are males. In terms of the respondents' occupations, it shows that the respondents' occupations vary, with farming and fishing being the highest percentages. As to the number of years residing in the barangay, the data implies that the respondents are residents of the barangay for an extended period. In terms of educational attainment, the data implies that most of the respondents are high school graduates.

The perception of the respondents on the impact of mining on socioeconomic and political development respondents believed that all the items presented were true.

There was no significant association between age and their perception on the social, health, and economic impact of mining operations; sex and their perception of the social and political impact; occupation and their perception of social, health, economic, and political impact; years of residency and their perception of the social and political impact; educational attainment and their perception of the economic, health and political impact of mining operations.

The null hypothesis is accepted on the association between the age and perception of the social, health, and economic impact of mining operations; sex and their perception of the social and political impact; occupation and their perception of social, health, economic, and political impact; years of residency and their perception of the social and political impact; educational attainment and their perception of the economic, health and political impact of mining operations.

The null hypothesis is rejected on the association between age and their perception of the environmental and political impact of mining operations; sex and their perception of the environmental, economic, and health impact of mining operations; occupation and their perception of the environmental impact of mining operations; years of residency and their perception on the environmental, economic, and health impact of mining operations; and educational attainment and their perception on the environmental, social, and economic impact of mining operations.

Based on the comprehensive analysis of the data collected in the study, it is recommended to adopt a multi-faceted policy approach that addresses the complex socio- economic, environmental, and political dynamics surrounding mining activities in Narra, Palawan. Here are some key policy recommendations:

Strengthen Environmental Regulations: Given the perceived positive impact of mining activities on health and socio-economic development but concerns about environmental consequences, there is a need to enhance and strictly enforce environmental regulations. This includes imposing stricter monitoring and enforcement measures to minimize pollution, protect natural resources, and mitigate environmental degradation caused by mining operations.

Community Engagement and Participation: Foster meaningful engagement and participation of local communities, particularly indigenous groups, in decision-making processes related to mining activities. Establish mechanisms for consultation, dialogue, and partnership between mining companies, government agencies, and local communities to ensure their voices are heard, concerns addressed, and benefits shared equitably.

Sustainable Resource Management: Promote sustainable resource management practices that prioritize long-term environmental sustainability and socio-economic development. Encourage responsible mining practices that minimize ecological footprint, rehabilitate mined areas, and support alternative livelihood opportunities for affected communities.

Capacity Building and Education: Invest in education and capacity-building initiatives to enhance local residents' understanding of mining impacts, environmental conservation, and sustainable development practices. Provide training programs, workshops, and educational campaigns to empower communities to actively participate in decision- making processes and advocate for their rights.

Economic Diversification: Explore opportunities for economic diversification beyond mining to reduce dependency on extractive industries and enhance resilience to economic shocks. Support initiatives that promote diversified local economies, such as eco-tourism, agriculture, and small-scale enterprises, to create alternative sources of income and employment for local residents.

Strengthen Social Protection Measures: Implement social protection measures to safeguard the well-being and livelihoods of communities affected by mining activities. This includes establishing compensation mechanisms for displaced individuals, providing access to healthcare services, and addressing socio-economic inequalities exacerbated by mining-related activities.

Research and Monitoring: Invest in ongoing research and monitoring efforts to continuously assess the socio-economic, environmental, and political impacts of mining activities. Conduct regular assessments of mining operations, environmental conditions, and community well-being to inform evidence-based decision-making and policy formulation.

By implementing these policy recommendations, stakeholders can work towards achieving a balanced and sustainable approach to mining that maximizes socio-economic benefits while minimizing environmental and social costs in Narra, Palawan. This holistic approach recognizes the interconnectedness of various factors and seeks to promote the long-term well-being and resilience of local communities and ecosystems.

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