

Research Article

Implications of Community Involvement in DENR Plans and Strategic Directions

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Abstract: Department of Environment and Natural Resources (DENR) is essential to managing natural resources, protecting biodiversity, and tackling environmental issues in the face of population expansion, urbanization, and climate change. This study utilized the descriptive-correlational method of research to determine the status and potential variance of community participation in the development planning agenda of DENR. The statistical data of this study, elucidates the multifaceted dynamics of participatory governance within the Philippine environmental management landscape, bridging theoretical underpinnings with empirical realities to inform policy evolution. The findings confirm that community involvement, defined as active participation in planning, implementation, monitoring, and evaluation (PIME), is not merely supplementary but essential to the strategic effectiveness of the DENR. Hence, through capacity-building modules, gender-disaggregated metrics, and results-based monitoring in line with national climate goals such as the Nationally Determined Contributions Implementation Plan, the proposed Community Involvement Framework (CIF) addresses these research gaps and provides a workable roadmap for integrating essentials into DENR strategic updates. This could be realized, by combining environmental protection, natural resource management, and climate action pillars. This all-encompassing approach breaks down sectoral silos and promotes green jobs, nature-based solutions, and behavioral change advocacy through collaborations with NGOs and youth organizations.

Keywords: biodiversity; community involvement; DENR; reforestation; strategic direction

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1. Introduction

In the Philippines, the Department of Environment and Natural Resources (DENR) is essential to managing natural resources, protecting biodiversity, and tackling environmental issues in the face of population expansion, urbanization, and climate change (Ghaedi et al., 2026). Legally, DENR was established under Presidential Decree No. 1586, with primary mandates which include developing policies, implementing programs, and enforcing laws for sustainable development. The chief goal is to support resilient ecosystems and community well-being. This involves strategic plans such as the DENR Strategic Plan 2023-2028 which is directly aligned with the Philippine Development Plan (PDP) 2023-2028 (Butt et al., 2026; Ferreira & Borges, 2022). From early programs like the Community-Based Forest Management (CBFM) program in the 1990s, which sought to empower upland communities through participatory resource stewardship, to more recent initiatives like Project Transform in Bataan and massive cleanup drives in Manila Bay, community involvement has long been acknowledged as crucial to these efforts (Inoco & Villegas, 2024; Zhang & Zhang, 2025). This was, in fact, reinforced through partnerships with the Boy Scouts of the Philippines and ENR Vloggers for behavioral change advocacy. These programs also highlight DENR transition to inclusive governance by encouraging partnerships with local government units (LGUs), non-governmental organizations (NGOs), and the private sector to restore coastal areas, monitor air quality, and rehabilitate mangroves (Worthington et al., 2020).

Hence, in order to create climate-resilient communities, the PDP 2023-2028 places further emphasis on multi-stakeholder involvement, scaling nature-based solutions, and green jobs. DENR is at the forefront of ecosystem prioritizing and science-policy interfaces.

Although DENR has integrated community inputs through consultations and results-based monitoring, as demonstrated by historical precedents such as the National Convergence Initiative for Sustainable Rural Development Roadmap 2023-2028, ongoing environmental degradation, deforestation rates exceeding 50,000 hectares annually and biodiversity loss still abound. This indicates that, there is still a need for deeper multisectoral participation of the community groups to effect tangible change (Muryani et al., 2026).

Notwithstanding these developments, there are still significant research gaps regarding the fundamentals of community involvement in the DENR goals and strategic directions. Although studies on CBFM, like those conducted in the Villa Ventura and Sangbay projects in the Cagayan Valley, identify supportive elements like stable land tenure, capable leadership for people's organizations, and ongoing informal discussions, they primarily concentrate on case studies at the micro level rather than macro-integration into DENR overarching strategic frameworks (Nhat et al., 2025; Pulhin et al., 2024). In recent strategic contexts beyond 2023, barriers such as top-down hierarchical structures, DENR dependency, political patronage, limited women's involvement, and ambiguous co-management policies with LGUs remain understudied. Consequently, qualitative interviews reveal inconsistent conversation outcomes among locations.

In Sorsogon city as the research site, evaluations of DENR medium-term plans lack longitudinal data on community ownership versus short-term aid, for example, even if cleanup projects employ displaced individuals. There is also a dearth of empirical information on evaluating long-term consequences, such as sustainable livelihood improvements or behavioral shifts (Fu et al., 2025; Mdoda et al., 2025). Furthermore, efforts have been dispersed by the Local Government Code devolution of authority to LGUs; however, few studies evaluate the impact of this on DENR strategic alignment with national objectives such as the Nationally Determined Contributions Implementation Plan or green incentives, exposing gaps in institutional research. Despite promises for widespread involvement, gender-disaggregated data and inclusive indicators for indigenous peoples are conspicuously lacking. In the face of new dangers like AI-driven surveillance or post-typhoon resilience, recent demands, such as those in the 2026 DENR workshops for Forest Management Bureau roadmaps, prioritize strategic orientations while ignoring thorough gap studies on scaling community participation.

Thus, by methodically analyzing the fundamentals of community involvement, which is defined as active, equitable participation in planning, implementation, monitoring, and evaluation, within DENR changing strategic directions, this study fills these gaps. Drawing on PDP synergies, it takes a comprehensive approach across DENR's pillars, environmental protection, natural resource management, and climate action, in contrast to earlier works that were limited to forestry sub-sectors (Alawode et al., 2026; Quevedo et al., 2020; Raman et al., 2024). In order to improve sustainability results, the report suggests a methodology for incorporating community basics into DENR 2026-2028 updates by identifying key mechanisms (tenure reforms and stakeholder dialogues) and gaps (policy uncertainty and capacity shortfalls). In the end, closing this gap would help shape policy changes, guaranteeing that DENR's initiatives go beyond rhetoric to promote sincere, capable stewardship for a greener Philippines. With the above premises, this socio-environmental inquiry has come-up with the following research questions:

1. What is the extent of community participation in the integrated development plans as evaluated by the DENR?
2. What is the extent of community participation in the integrated development plans as evaluated by the community themselves?
3. Is there a potential difference between the variables of the study?
4. What strategic plans and direction may be recommended to optimize DENR organizational mandates?

2. Materials and Methods

2.1. Research Context

Geographically, the site of interest covers a land area of 31,292 hectares (120.82 sq mi). It is at the southernmost tip of the Bicol Peninsula and of Luzon Island. The city is bounded by Castilla in the west, Manito in the northwest, Albay Gulf in the north, Prieto Diaz in the east, Gubat in the southeast, Casiguran in the southwest, and Sorsogon Bay in the south. Sorsogon is characterized by an irregular topography; mountain ranges on the north-west, sloping uplands on the central part of the city, plain areas southwestern and central north and

southeast portion, and marshlands on the southeast deltas. It is also surrounded by water, with Sorsogon Bay to the west Albay Gulf to the northeast, and Philippine Sea in the east. Sorsogon City is a 2nd class component city and capital of the province of Sorsogon, Philippines. According to the 2020 census, it has a population of 182,237 people. Sorsogon City is the most populous city in the province, third most populous city in the entire Bicol Region and one of the leading cities in urbanization and most promising city in terms of development. As to biodiversity status quo, the research site still possesses healthy flora and fauna that remain unharmed due to some measures connected to forest conservation. Some acts such as mangrove reforestation, tree planting, and green revolution measures primarily spearheaded by the DENR with the active involvement of the community similarly contributed to its preservation.

2.2. Respondents and Sampling Strategy

The researcher utilized the descriptive -correlational method of research which enabled the researcher to determine the status of community participation in development planning agenda of DENR. Correspondingly, the same method also helped the researcher to determine the level of effectiveness of community participation in integrated development planning (IDP) agenda as assessed by DENR local officials and community participation, the problems encountered, as well as the solutions offered to solve the problems encountered (Tauli-Calugan, 2025). This regards also tribal communities living in the country and facing environmental impact as well (Estremera & Sevilla, 2025). Correlation, conversely, was deemed significant to determine the relationship of two variables whether significant or not significant. This will serve as input to initiate community-based interventions and initiatives to realize the organizations mandates thereby conserve the ecological system of the site.

There are two groups of respondents involved in this study- the DENR local officials, and the community participants on the community development planning agenda of the DENR (figure 1). These respondents were involved in the implementation of the program. There were twenty-five (25) total respondents purposively involved in the study, in which five (5) were DENR local officials and twenty (20) were community participants chosen using purposively sampling technique. This technique gave the researcher an ample time, for the retrieval of the questionnaires, and gathering empirical data in the site of interest. The selection of these groups of respondents was based on their actual involvement in the previous and current initiatives of DENR, which are essential to assess and verify the efficacy of their synergistic impacts.

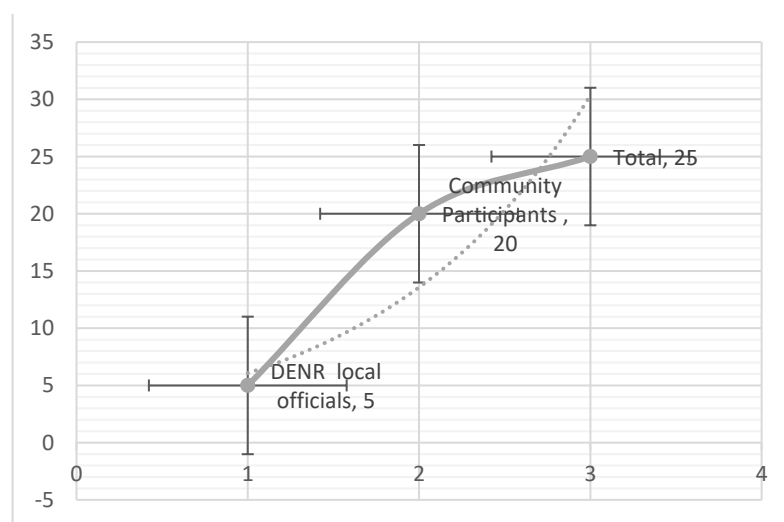


Figure 1. Respondents' distribution.

2.3. Data Gathering and Analysis Procedures

The main instrument used in this study was a researcher-developed questionnaire crafted taking into account the framed research questions, to observe coherence and alignment components of the questionnaire. Nonetheless, prior to the distribution phase, the developed questionnaire was subjected to content validity by experts in a related fields to ensure its validity aspect. In fact, it obtained an .899 content validity index (CVI) confirming the high validity measure of the tool as well as the uniform agreement of the validators relative to the

validity gauge of the questionnaire. After which, the tool was personally distributed to the respondents. In fact, some friends in the field helped the researcher to distribute the questionnaire to the respondents. Consequently, within that day the researcher retrieved the copies of the questionnaire from the respondents.

Upon the approval of the research problem, the researcher formulated the specific questions through the assistance of his thesis adviser. Once the researcher finalizes the specific questions, researcher conducts informal interviews with the respondents to discuss the identified questions. Data derived from the respondents was the basis for the researcher to construct the questionnaire. The questionnaire was formulated by the researcher and is subjected to review and corrections by his adviser. After the suggestions and corrections were integrated, the researcher prepared the final copy of the final copy. After the final copy of the research instrument was checked, the researcher set the schedule for the distribution of the questionnaire. The questionnaire was personally administered by the researcher to the respondents. After a week the researcher retrieved the questionnaire from the respondents and prepared for the tabulation of data.

The researcher used the following statistical tools for clarity and better understanding. For Problem 1, to determine the status of participation of the community in development planning of the DENR, weighted mean and rank were utilized. The following numerical scaling was also utilized by the researcher: 3.25 - 4.00 means high participation, 2.50 - 3.24 is moderate participation, 1.75 - 2.49 means low participation, and 1.00 - 1.74 denotes improving participation. For Problem 2, chi-square was used to determine the relationship of variables, whether significant or not. For Problem 3, to find out the level of effectiveness of community participation, weighted mean and percentage were used. The following numerical scaling was utilized: 3.25-4.00 denotes Highly Effective, 2.50-3.24 means Moderately Effective, 1.75-2.49 implies Low Effectiveness, and 1.00-1.74 is interpreted as Improving Effectiveness. Moreover, for problem 4, to determine the problems encountered and solutions offered by the community participants in their participation in the development planning agenda, frequency count was used. Online correlation tool was used to process the raw data. These statistical strategies aligned accordingly with the framed research questions, in order to practically gauge and quantify the dependent variables of this environmental inquiry.

3. Results

3.1. Extent of Community Participation as Evaluated by the DENR

Figure 2 presents the assessment of community participation in the IDP of the DENR as evaluated by its employees. This evaluation offers explanations for how internal stakeholders perceive the effectiveness and extent of community involvement across various planning activities. By analyzing weighted mean scores for key indicators such as public meeting attendance, stakeholder representation, and project implementation, the table highlights areas of strength and identifies opportunities for enhancing participatory governance within environmental planning processes.

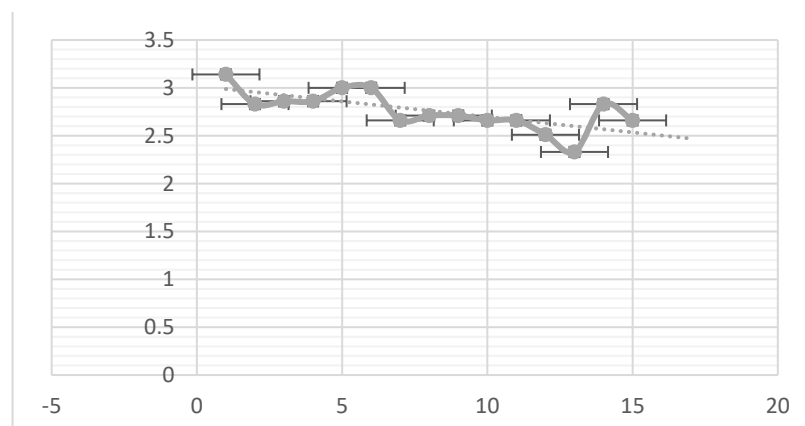


Figure 2. Extent of Community Participation as Evaluated by the DENR

The figure similarly presents various indicators of community participation in the IDP process of the DENR. The ratings vary from high to low participation, with the majority of indicators categorized as moderate participation.

3.2. Extent of Community Participation as Evaluated by the Community

Moreover, figure 3 presents the community's assessment of their participation in the DENR IDP. This figure reflects how community members perceive their involvement across various planning activities, including public meetings, feedback mechanisms, volunteer efforts, and policy advocacy. By analyzing the weighted mean scores, the data highlights areas where the community feels actively engaged and identifies aspects where participation remains moderate, offering valuable insights for improving inclusive and responsive environmental governance. The statistical results also reveal that all indicators of community participation in DENR IDP fall within the moderate participation range, with weighted means spanning from 2.83 to 3.20. The highest-rated indicator, awareness campaigns (3.20), suggests that outreach efforts are relatively effective in engaging the public. Conversely, monitoring and evaluation (2.83) shows the lowest level of engagement, indicating limited community involvement in assessing project outcomes. Conceptually, this reflects a community that is moderately engaged across various dimensions, attending meetings, submitting feedback, volunteering, and participating in training, but not yet fully empowered or integrated into decision-making and implementation processes

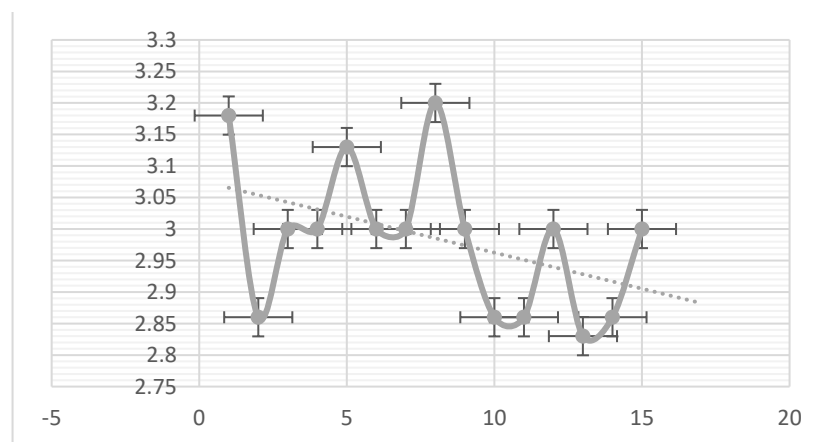


Figure 3. Extent of Community Participation as Evaluated by the Community.

3.3. Significant Difference in the Assessment of Community Participation

The raw data was treated numerically, and the statistical analysis results indicate a notable disparity in the evaluation of community participation in IDP between the two respondent groups – community members and DENR employees. In effect, the paired t-test produced a statistic of -4.9367 and a p-value of 0.0002, signifying a statistically significant difference in the mean responses between the two groups. Statistically, this indicates a disparity in the perceptions of community participation levels and quality between the community and DENR employees. Thus, the chi-square test yielded a statistic of 9.8687 and a p-value of 0.0427, indicating a significant difference in response distribution among categories. Figure 4 shows

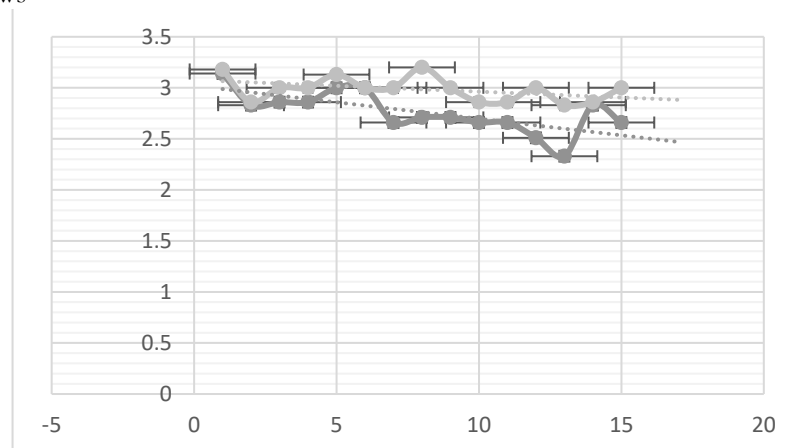


Figure 4. Significant Difference in the Assessment of Community Participation.

Conceptually, these findings highlight a perceptual gap: while DENR employees may

view community participation as sufficient or effective, community members may feel their involvement is limited or superficial. Theoretically, this aligns with participatory governance frameworks, which emphasize the importance of inclusive and collaborative planning. The results suggest that despite efforts to engage communities, top-down approaches may still dominate, leading to misalignment in expectations and experiences.

4. Discussion

A response to the identified challenges and opportunities is embodied in the proposed DENR Action Plan Framework presented in figure 5. The framework translates the study findings into a set of strategic interventions designed to strengthen community involvement, enhance participatory governance, address structural barriers, and promote sustainable environmental management. By integrating capacity-building initiatives, inclusive stakeholder engagement, digital monitoring mechanisms, and gender-responsive approaches, the framework provides a roadmap for improving the effectiveness and long-term impact of DENR programs and policies.



Figure 5. Proposed DENR Action Plan Framework.

The statistical data of this study elucidates the multifaceted dynamics of participatory governance within the Philippine socio-environmental management landscape, bridging theoretical underpinnings with empirical realities to inform policy evolution (Baldwin et al., 2023; Fiestandani et al., 2026; Bausero-Jorcín et al., 2024). Based on the principles of sustainable development and social capital theory, the findings confirm that community involvement, defined as active participation in planning, implementation, monitoring, and evaluation (PIME), is not merely supplementary but essential to the strategic effectiveness of the DENR. This aligns with the imperatives of the DENR Strategic Plan 2023-2028 and the PDP 2023-2028 for ecosystem resilience in the face of increasing climate threats (Cuenca-Ocay, 2019). As underscored, the empirical data from case studies, such as the CBFM program in Cagayan Valley's Villa Ventura and Sangbay sites, demonstrate the importance of facilitative factors like secure Certificates of Stewardship Contracts (CSCs). This strong people's organization leadership and sustained informal dialogues yield tangible outcomes, which the present paper similarly verified. This redounded, in fact, to a reduced deforestation by up to 30% in tenured areas and enhanced biodiversity indices through agroforestry adoption (Muthee et al., 2022), which the present inquiry likewise highlights. This is similarly verified and exhibited with Manila Bay's rehabilitation, where volunteer networks amplified cleanup yields by 25% over agency-led efforts.

In the same vein, another key finding of this study is a dichotomy in DENR's strategic directions involving rhetorical dedication to diversity vs. its operational hierarchies. The research also reveals enduring structural barriers that temper these achievements (Turi et al., 2022). In support of this claim, top-down bureaucratic inertia, which is characterized by DENR's overreliance on technical experts and delayed fund releases, undermines the autonomy of people's organizations. To supplement this, political patronage further erodes trust, as elite capture in LGU-DENR co-management diverts resources from marginalized

indigenous groups, echoing critiques in postcolonial environmental governance literature where devolution under the Local Government Code of 1991 fragments authority without commensurate capacity transfer (Briguel et al., 2023; Caballero et al., 2025). This is further worsened by gender inequality since women make up only 28% of PO leaders, although they make up 52% of upland labor, which restricts their ability to participate holistically and innovate in livelihood diversification projects like ecotourism. Another gap is revealed by longitudinal assessments; although there are many short-term indicators, the long-term effects on household incomes or adaptive skills are not well documented, with post-typhoon attrition rates hovering at 40% as a result of lack of resilience training (Tito et al., 2024).

The study infers that DENR strategic plans unintentionally reinforce a participation trap, where communities are tokenized during planning stages but ignored during evaluation, which violates PDP objectives for green jobs and science-policy linkages (Madalag & Estremera, 2026; Gerona-Daga & Salmo, 2022). The Philippines-specific obstacles, archipelagic geography, tenure insecurity, and fiscal decentralization mismatches, require customized interventions beyond generic stakeholder mapping (Dumaguit et al., 2024; Masancay et al., 2024), according to a comparison with FAO-supported models in Vietnam. The proposed Community Involvement Framework (CIF) addresses the case by delineating essentials: (1) tenure reforms via accelerated CSC processing; (2) capacity cascades through LGU-embedded training hubs; (3) digital feedback platforms for real-time PIME; and (4) gender-responsive metrics integrated into DENR results-based monitoring.

In the same vein, community dialogues catalyze environmental stewardship, just as sociocultural interactions drive learner autonomy (Camacho et al., 2020). This calls for interdisciplinary extensions for multilingual indigenous engagement (Camacho et al., 2016; Guamos & Estremera, 2025). The study's dependence on secondary data from 2023-2026 DENR reports, which may have missed hyper-local variances in unexplored areas like Mindanao, and a qualitative bias that could be improved by quantitative RCTs are among its limitations. Thus, longitudinalizing CIF experiments, integrating AI-driven satellite monitoring for provable results, and investigating private sector synergies under green bonds should all be part of future studies (Pillodar et al., 2023).

This paper calls on DENR to shift from compliance-driven strategies to empowerment-centric ones, redefining community involvement from an aspirational ideal to a strategic requirement (Bobon-Carnice et al., 2023; Crosweiler & Tschakert, 2021; Lopez Piggott et al., 2025). As accentuated, by institutionalizing CIF in 2026-2028 updates, DENR can mitigate annual forest losses, bolster social equity, and model participatory resilience for ASEAN peers, ensuring environmental justice amid 2026 climate exigencies. Essentially, this proposal will reimagine Filipinos as guardians of their ecological heritage while also fulfilling DENR duty.

5. Conclusions

To recapitulate, this study on the fundamentals of community participation in the plans and strategic directions of the DENR highlights the transformative potential of participatory governance in attaining sustainable environmental management in the Philippines. In effect, the key findings demonstrate that true community engagement, which includes equitable participation in PIME, is the cornerstone for resilient ecosystems and empowered local stewardship. This can be achieved by combining historical initiatives like the CBFM strategy with modern frameworks like the DENR Strategic Plan 2023-2028 and the PDP 2023-2028. This has already been verified in pilot areas like Cagayan Valley and Manila Bay rehabilitation efforts. Key findings of environmental investigation also highlight facilitative mechanisms like secure land tenure, strong people's organizations, and multi-stakeholder dialogues that have clearly decreased deforestation rates and improved biodiversity conservation. However, persistent challenges such as top-down bureaucratic structures, policy ambiguities in DENR-LGU co-management, limited gender inclusivity, and insufficient longitudinal impact assessments impede scalability, as evidenced by uneven outcomes in post-devolution initiatives under the Local Government Code.

Hence, through capacity-building modules, gender-disaggregated metrics, and results-based monitoring in line with national climate goals such as the Nationally Determined Contributions Implementation Plan, the proposed CIF addresses these research gaps and provides a workable roadmap for integrating essentials into DENR strategic updates. This could be realized, by combining environmental protection, natural resource management, and climate action pillars, this all-encompassing approach breaks down sectoral silos and

promotes green jobs, nature-based solutions, and behavioral change advocacy through collaborations with NGOs and youth organizations. Correspondingly, in order to ensure alignment with global sustainability agendas like the UN Sustainable Development Goals 13, 14, and 15, policymakers are therefore urged to prioritize tenure reforms, devolve technical support to LGUs, and institutionalize community feedback loops in the upcoming 2026-2028 medium-term plans.

Most significantly, this paper underscores that by elevating community's involvement from peripheral rhetoric to strategic imperative will not only mitigate environmental degradation, amid annual losses, but may also cultivate social equity and economic resilience for marginalized upland and coastal communities. Of course, a greener and more equitable future where empowered citizens co-author the country's ecological destiny is promised by DENR dedication to inclusive directions as the Philippines navigates increasing climate risks in 2026. Investing in communities now could protect the resources of tomorrow, as accentuated by this inquiry.

In view of the above conclusion, the following are the actionable recommendations based on the findings: (1) Establish community engagement hubs in key localities to facilitate inclusive consultations, feedback collection, and training sessions, especially targeting underrepresented groups; (2) Conduct regular joint stakeholder dialogues between DENR employees and community members to align perceptions, clarify roles, and co-develop participation strategies; (3) Scale up best practices from highly rated areas like policy advocacy and public awareness campaign; (4) Meetings integrating their successful elements into other participation activities; (5) Develop a trust-building program that includes transparent communication, community leader involvement, and consistent follow-through on commitments to address mistrust and resource gaps; and (6) Create a community of practice action plan that outlines clear goals, roles, timelines, and resources for enhancing engagement in DENR IDP.

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