CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dbi Crossref INDEX COPERNICUS ROAD ISJD OneSearch EBSCO

GLOBAL GREEN DIPLOMACY CROSS-BORDER COLLABORATION IN MANGROVE CONSERVATION AS A BLUE CARBON SOLUTION

Putu Ayu Sita LAKSMI[1], I Ketut Johny Pramananda PUTRA[2], A.A Made Indra Wijaya KUSUMA[3], Mohd Azlan Bin Abu BAKAR[4], Gusti Ngurah Danan AGASTIRA[5]

[1,2,3,5]Faculty of Economics and Business, Warmadewa University, Bali, Indonesia

[4]University College of MAIWP International (UCMI), Batu Caves, Kuala Lumpur, Malaysia

Corresponding author: Putu Ayu Sita Laksmi

E-mail: putuayusitalaksmi@warmadewa.ac.id

Article Info:

Received: 2025-07-15 Revised: 2025-08-15 Accepted: 2025-09-15

Vol: 4 Number: 3 Page: 184 - 193

Keywords:

Green Diplomacy, Blue Carbon, Mangrove, Participatory Action, Cross-Border Collaboration, Conservation, Climate Change.

Abstract:

The existential challenge of climate change demands urgent solutions, with mangrove conservation emerging as a potent nature-based strategy through the Blue Carbon paradigm. This article explores the transformative concept of "Global Green Diplomacy" through a community service initiative in Bali, Indonesia, employing a Participatory Action Research (PAR) framework. It demonstrates how cross-border collaboration in mangrove conservation transcends mere ecological restoration to become a strategic, scalable, and indispensable Blue Carbon solution. The PAR methodology engaged local communities in five iterative phases: collaborative site assessment, co-design of the conservation plan, capacity building and cross-border knowledge exchange, hands-on implementation embodying the spirit of gotong-royong (cooperation), and participatory monitoring. Results revealed the successful rehabilitation of over 15,000 mangrove saplings across a five-hectare degraded zone, achieving a 78% survival rate. This grassroots action not only restored ecological functions—evidenced by increased biodiversity and a 60% reduction in plastic debris—but also spurred socio-economic transformation, notably through a community-managed ecotourism program. The discussion underscores that this local action gains global significance when linked to Blue Carbon and Green Diplomacy frameworks. The community's stewardship creates a verifiable carbon sink, unlocking opportunities for ethical financing via carbon credit schemes involving international partners. The study concludes that the synergy between local empowerment, cross-border collaboration, and global incentives is key to amplifying climate resilience, effectively turning grassroots action into a sustainable and scalable climate solution.

INTRODUCTION

INTRODUCTION

The existential challenge of climate change no longer looms on the horizon; it is here, reshaping coastlines, intensifying weather patterns, and demanding a fundamental re-evaluation of humanity's relationship with the planet. In this urgent quest for solutions, the gaze of the world has often been fixed on terrestrial ecosystems—the vast expanses of the Amazon, the Congo Basin, the boreal forests. However, lapping quietly at the edges of our continents lies a neglected, yet profoundly powerful, ally in the fight against climate catastrophe: the coastal mangrove forest (Suwitra et al., 2022). These intricate, brackish-water ecosystems, long perceived as desolate, mosquito-ridden wastelands, are now emerging from obscurity to claim their rightful place at the forefront of climate science and environmental diplomacy (Ojelel et al., 2025). This article explores a

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA
JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dbi ROAD ISJD EBSCO

potent and transformative paradigm through the lens of a community service initiative in Bali, Indonesia: the concept of "Global Green Diplomacy," where cross-border collaboration in mangrove conservation is not merely an ecological gesture but a strategic, scalable, and indispensable Blue Carbon solution (Hamimah et al., 2022).

The setting for this exploration is as symbolic as it is strategic. Bali, the "Island of the Gods," is a global epicenter of culture, tourism, and natural beauty. However, beneath its iconic rice terraces and vibrant coral reefs lies a vulnerability shared by thousands of coastal communities worldwide. Rising sea levels, coastal erosion, and the increasing frequency of storm surges threaten its very foundations (Saputra, Subroto, et al., 2022). It is here, in the muddy, nutrient-rich intertidal zones of Bali, that a silent revolution is taking root. Local communities, once viewing mangroves as impediments to development or fishing access, are now becoming their most ardent guardians. Through community service programs—gotong-royong in the Balinese spirit of cooperation—villagers, students, and local NGOs are rolling up their sleeves, not just to plant trees, but to rebuild a natural fortress (Saputra, Mu'ah, et al., 2022).

This grassroots action, however, is only one thread in a much larger tapestry. The true potential of these Balinese efforts is unlocked when viewed through the twin lenses of "Blue Carbon" and "Green Diplomacy." Blue Carbon refers to the carbon captured and stored by coastal and marine ecosystems, primarily mangroves, seagrasses, and salt marshes (Law et al., 2016). While they occupy a fraction of the area of terrestrial forests, these ecosystems are carbon sequestration powerhouses. Mangroves, in particular, possess an almost magical ability to absorb carbon dioxide from the atmosphere at rates up to four times greater than their terrestrial counterparts. They do not merely store this carbon in their biomass (leaves, branches, and roots) but, more significantly, in the waterlogged, oxygen-poor soils in which they thrive, where organic matter can be stored for millennia (Saputra & Dharmawan, 2025). The destruction of a single hectare of mangrove forest, therefore, releases a catastrophic pulse of stored carbon back into the atmosphere, exacerbating the very problem its preservation could help solve (Krisnawati et al., 2016).

Recognizing this, the narrative of mangrove conservation shifts from local environmentalism to a matter of global climate security (Singh et al., 2020). This is where "Green Diplomacy" enters the stage. Traditional diplomacy has long been concerned with borders, trade, and security. Green Diplomacy expands this mandate, placing shared environmental challenges and the management of global commons at the heart of international relations. The preservation of Bali's mangroves, and indeed all the world's coastal ecosystems, is a textbook case for this new diplomacy (Huang, 2021). The carbon sequestered by a mangrove in Bali contributes to stabilizing the global climate, a benefit that is non-exclusive and enjoyed by every nation, from the island nations of the Pacific to the industrial powerhouses of Europe and North America. Conversely, the degradation of these ecosystems imposes a cost on all of humanity.

It is this interconnectedness that fuels the imperative for cross-border collaboration. The community service volunteer planting a propagule in the silt of Bali is acting not only for their village but as a de facto agent of global climate mitigation. However, their impact can be magnified exponentially through international partnerships (Laksmi & Arjawa, 2023a). Cross-border collaboration in this context manifests in multifaceted ways. It is the flow of scientific knowledge and technology, where researchers from universities in Europe or North America partner with Indonesian scientists to map carbon stocks, monitor ecosystem health using remote sensing, and develop best practices for restoration (Laksmi & Arjawa, 2023b). It is the financial mechanism, such as carbon credit schemes under the Paris Agreement's Article 6 or voluntary markets, where

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dbi Crossref INDEX COPERNICUS ROAD ISJD OneSearch EBSCO

corporations or nations in the Global North can invest in verified mangrove conservation projects in the Global South, channeling much-needed resources to the communities on the front lines. It is the diplomatic framework, where nations forge bilateral or multilateral agreements, recognizing that investing in the "green infrastructure" of another country is a direct investment in their own climate resilience.

The community service activities in Bali thus become a living laboratory and a powerful symbol of this global compact. When international volunteers join hands with local Balinese farmers, they are not just planting trees; they are building bridges of understanding and shared purpose (Saputra & Laksmi, 2024). They are co-creating a model where ecological integrity, community livelihood, and global climate responsibility are inextricably linked. This collaboration fosters a transfer of more than just resources; it fosters a shared ethos. The local community gains a renewed sense of pride and economic incentive as stewards of a globally significant ecosystem, while international partners gain invaluable, on-the-ground insights and a tangible, positive impact for their climate goals.

This article will delve into this intricate interplay of local action and global strategy. We will journey into the heart of Bali's mangrove restoration projects, witnessing firsthand the challenges and triumphs of community-led conservation (Laksmi & Saputra, 2024a). We will demystify the science of Blue Carbon, quantifying the immense climate value locked within these coastal forests. Furthermore, we will critically examine the mechanisms of Global Green Diplomacy, analyzing successful models of cross-border collaboration and identifying the barriers that must still be overcome. In a world often fractured by competition and short-term interests, the story of Bali's mangroves offers a compelling counter-narrative: one of cooperation, shared destiny, and the profound power of humble roots to anchor not just a coastline, but a sustainable future for all.

From Mangrove Swamps to Critical Carbon Sinks: The Blue Carbon Paradigm. For decades, coastal ecology literature has documented the vital life-supporting roles of mangrove ecosystems (Alongi, 2002; Duke et al., 2007). Their functions as nurseries for marine life, protectors of shorelines from erosion and tsunamis, and filters for pollutants have long been recognized. However, a significant turning point in the global discourse occurred when scientists began to quantify and promote the extraordinary capacity of mangroves as carbon sinks. The concept of "Blue Carbon," popularized in a seminal report by the United Nations Environment Programme (UNEP) in 2009, formally placed coastal and marine ecosystems on the climate change mitigation agenda (Nellemann et al., 2009).

Subsequent studies, such as that by Donato et al. (2011) in Nature Geoscience, revealed that mangroves store carbon at densities much higher than terrestrial tropical forests, with the majority of the carbon (approximately 70-80%) locked within deep peat soils. This finding shifted the paradigm of mangroves from mere local ecological assets to strategic global assets in the carbon cycle. Recent literature continues to refine methodologies for Measuring, Reporting, and Verifying (MRV) blue carbon stocks, which form the scientific basis for results-based financing schemes, such as carbon ecosystem service payments (Murdiyarso et al., 2015).

Global Threats and the Failure of Sectoral Approaches. Conversely, the literature has also consistently documented an alarming rate of mangrove loss, estimated to be 3-5 times faster than the loss of global terrestrial forests (Hamilton & Casey, 2016). The primary drivers are conversion for aquaculture (e.g., shrimp ponds), coastal infrastructure development, pollution, and the impacts of climate change. Numerous case studies, including in Indonesia, demonstrate that isolated and fragmented conservation approaches often fail due to economic pressures and a lack of law

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA
JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dbi Crossref INDEX COPERNICUS ROAD ISJD OneSearch EBSCO

enforcement (Giri et al., 2011). This body of work highlights the urgent need for new conservation models that integrate the economic value of mangroves into sustainable financing systems capable of competing with conventional development interests (Laksmi & Saputra, 2024b).

Local Communities: From Beneficiaries to Agents of Conservation. A body of literature in environmental sociology and anthropology has underscored the central role of local communities in natural resource management. The concept of community-based conservation or co-management has proven effective in various contexts (Berkes, 2004). In the context of mangroves, studies show that restoration programs that meaningfully involve communities—not merely as labour—have higher rates of sustainability and success (Brown et al., 2014). Participation in monitoring, decision-making, and direct economic benefits (e.g., through ecotourism or non-timber forest products) creates a sense of ownership and incentives for protection. Thus, the literature provides evidence that community empowerment is not an obstacle but a fundamental prerequisite for long-term mangrove conservation (Laksmi, Arjawa, et al., 2023).

Green Diplomacy and the Global Financial Architecture. Finally, literature in international relations and the political economy of the environment has explored the rise of "Green Diplomacy" or "Environmental Diplomacy." This concept refers to the use of diplomatic instruments to address transboundary environmental problems, where success depends on international cooperation (DeSombre, 2000). Agreements like the Paris Agreement (2015) create an explicit legal framework to facilitate such cooperation, particularly through Article 6, which governs market and non-market mechanisms. The literature on global climate governance analyzes the opportunities and challenges in applying these mechanisms to blue carbon (Herr & Landis, 2016). These include technical issues such as permanence (the durability of carbon storage), leakage (the displacement of pressures to other locations), and most importantly, ensuring that financial benefits truly reach local communities—a challenge well-documented in REDD+ (Reducing Emissions from Deforestation and Forest Degradation) projects (Darmawan et al., 2023).

METHODS

This project was implemented using a Participatory Action Research (PAR) framework, which seamlessly integrates community service, scientific research, and capacity building. This approach prioritizes community ownership and co-learning, ensuring that the initiatives are not only for the community but also by and with the community. The methodology was structured in five iterative phases, conducted over 12 months in a selected mangrove area in Bali, involving local villagers, youth groups, and international partners.

Phase 1: Collaborative Site Assessment and Community Profiling. The initial phase focused on building trust and establishing a foundational understanding of the local context.

- Participatory Rural Appraisal (PRA) Tools: We employed PRA tools such as:
  - Transect Walks: Joint walks through the mangrove ecosystem with community elders and fishers to map land use, identify degraded zones, and observe biodiversity.
  - Focus Group Discussions (FGDs): Structured discussions with different community segments (fishers, women's groups, local business owners) to understand their perceptions, dependencies, and historical uses of the mangrove forest.
  - Semi-Structured Interviews: In-depth conversations with key informants, including village leaders and local environmental champions.

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dbi ROAD ISJD EBSCO

- Socio-Economic Surveys: Quantitative surveys were administered to households to gather data on livelihoods, income sources, and awareness of mangrove ecosystem services.

Phase 2: Co-Design of the Conservation Action Plan. Based on the assessment, the community service team facilitated a collaborative planning process.

- Community Visioning Workshop: A multi-stakeholder workshop was organized to define the vision for the mangrove area collectively. Participants used problem trees and solution trees to identify root causes of degradation and brainstorm viable solutions.
- Action Planning: The community, alongside the project facilitators, co-designed the conservation action plan. This included:
  - Species Selection: Choosing appropriate, native mangrove species (Rhizophora mucronata, Bruguiera gymnorrhiza) for restoration, based on local knowledge and ecological advice.
  - Activity Mapping: Deciding on the locations for rehabilitation, the creation of interpretive nature trails for ecotourism, and sites for waste management facilities to address plastic pollution.
  - Role Definition: Clearly outlining the roles and responsibilities of community members, local government, and international volunteers.

Phase 3: Capacity Building and Cross-Border Knowledge Exchange. This phase focused on equipping the community with the necessary skills and connecting them with global expertise.

- Skill-Building Workshops: A series of hands-on training sessions was conducted, including:
  - Mangrove Propagule Collection and Nursery Management: Teaching sustainable techniques for establishing and maintaining a community nursery.
  - Ecotourism Guide Training: Training local youth in guiding techniques, biodiversity interpretation, and hospitality skills.
  - Basic Carbon Monitoring: A simplified workshop on measuring tree diameter and height, and understanding the principles of blue carbon stock assessment.
- Virtual Knowledge Exchange: Leveraging technology for cross-border collaboration, we organized virtual sessions where:
  - International scientists presented on global best practices in mangrove restoration.
  - Community representatives from other Southeast Asian countries shared their experiences.
  - University students from partner institutions abroad collaborated with local youth on designing awareness campaigns.

Phase 4: Implementation of Community Service Actions. This was the hands-on, action-oriented core of the project, embodying the spirit of gotong-royong.

- Mangrove Rehabilitation Drives: Regular community planting events were organized, where local volunteers and international partners worked side-by-side to plant thousands of mangrove propagules in pre-identified degraded areas.
- Development of Supporting Infrastructure: The community collectively built:
  - Interpretive Boardwalks: Using sustainable materials to create trails that minimize ecosystem disturbance.
  - Waste Collection Stations: Placed at key entry points to prevent land-based waste from entering the mangrove forest.
- Ecotourism Pilot Program: The trained local guides began offering guided tours, with a portion of the revenue earmarked for a community conservation fund.

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA
JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dbi ROAD ISJD EBSCO

Phase 5: Participatory Monitoring, Evaluation, and Learning (PMEL). The final phase ensured the project's impact was measured and lessons were learned for future adaptation.

- Biophysical Monitoring: Community members were trained to conduct simple monitoring of survival rates, tree growth, and biodiversity indicators (e.g., bird and fish counts).
- Socio-Economic Feedback Loops: Regular FGDs were held to gather qualitative feedback on the project's impact on livelihoods and community cohesion.
- Carbon Stock Baseline Data Collection: In collaboration with international researchers, a baseline study was initiated. Community members assisted in field data collection (e.g., setting up plots, measuring trees), linking their local action directly to the global blue carbon discourse.

RESULT AND DISCUSSION

The implementation of the Participatory Action Research framework for community-led mangrove conservation in Bali yielded a complex tapestry of outcomes that transcend simple ecological restoration. The results, observed over 12 months, illuminate the profound synergy between grassroots action and global frameworks, demonstrating that community service, when strategically designed, can become a powerful engine for both local sustainable development and international climate diplomacy. Ecologically, the most immediately visible outcome was the successful establishment of over 15,000 mangrove saplings across a five-hectare degraded zone, achieving a first-year survival rate of approximately 78%. This high rate is directly attributable to the community's intimate knowledge of tidal patterns and species-site matching, a testament to the value of integrating local wisdom with scientific guidance. Beyond mere planting, the community's role as stewards was cemented through their daily monitoring, which recorded not only sapling growth but also the tangible return of biodiversity (Saputra et al., 2024). Fishermen involved in the project reported a noticeable increase in juvenile fish and crab populations within the rehabilitated creeks within nine months, providing early validation of the mangrove's role as a critical marine nursery. The community-built infrastructure further enhanced this biological recovery; the interpretive boardwalks successfully channeled visitor traffic, preventing soil compaction and root damage, while the strategically placed waste collection stations reduced plastic debris in the ecosystem by an estimated 60%, as measured by monthly clean-up audits. These ecological gains, however, were not merely environmental data points; they were the foundational assets upon which socio-economic and diplomatic capital was built (Saputra, Laksmi, et al., 2025).

The socio-economic transformation within the community emerged as one of the most significant results of this initiative. The co-designed ecotourism pilot program, managed entirely by the local youth group, attracted over 1,500 visitors in its first six months of operation. This direct revenue stream, managed through a community conservation fund, created a powerful, tangible incentive for preservation, effectively aligning the community's economic well-being with the health of the ecosystem (Laksmi et al., 2024). This shift from perceiving the mangroves as a wasteland to valuing them as a "green asset" represents a critical paradigm shift. One fisherman, now a part-time guide, poignantly noted in a follow-up discussion, "Before, we looked at the mangrove and saw only mud. Now, we see a bank, a shield from storms, and a classroom for our children and visitors." This sentiment captures the profound change in environmental valuation that occurred. The project also had a marked impact on community cohesion and the empowerment of marginalized groups (Saputra, Dewi, et al., 2025). The women's group, initially involved in the nursery, leveraged their

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dof Crossref INDEX COPERNICUS ROAD ISJD OneSearch EBSCO

new skills to start a small enterprise selling propagated saplings to neighboring villages and producing handicrafts from fallen mangrove propagules, diversifying local income sources. The capacity-building workshops did not merely transfer skills; they fostered a sense of collective agency and pride, positioning the community not as passive recipients of aid but as experts and active defenders of their environment. This empowerment is the crucial human feedstock that sustains conservation efforts long after external facilitators have departed (Laksmi, Putra, et al., 2023).

It is at the intersection of these local ecological and socio-economic successes that the broader discussion on Global Green Diplomacy and Blue Carbon becomes most relevant. The community's diligent work in planting and protecting mangroves, a quintessential local action, directly contributes to a global public good: atmospheric carbon dioxide removal. The baseline carbon stock assessment, conducted in collaboration with international researchers, provided the crucial quantitative link between this community service and the climate crisis. Preliminary data indicated that the newly rehabilitated area has the potential to sequester several hundred tons of CO2-equivalent over its lifetime, transforming the community's muddy backyard into a verifiable carbon sink. This is where the theoretical concept of Blue Carbon becomes operationalized (Manurung et al., 2022). The discussion must now pivot to how global mechanisms can recognize and reward this local stewardship. The community's action creates a valuable asset in the emerging voluntary carbon market. The cross-border collaboration was instrumental here; while the community provided the labor and long-term guardianship, the international partners provided the technical expertise for carbon measurement and the connections to potential investors. This model embodies Green Diplomacy in action—it is a form of soft power and international cooperation based on mutual interest in planetary health. A corporation in Europe seeking to offset its emissions can now invest with greater confidence in this project, knowing that the deep community involvement ensures the "permanence" and "additionality" that carbon markets demand, thereby channeling global capital directly to the local frontline of climate action (Saputra & Jayawarsa, 2023).

However, this discussion would be incomplete without a critical analysis of the challenges and prerequisites for scaling this model. The primary challenge remains the equitable and transparent distribution of financial benefits from instruments like carbon credits. The community must be central to the governance of any such revenue, ensuring funds are reinvested into further conservation, community development, and disaster resilience, rather than being captured by external intermediaries. This requires robust legal and institutional frameworks at the local level, which the project helped initiate through the formation of a registered community cooperative. Another challenge is the scalability of participatory models, which are inherently more time and resource-intensive than top-down approaches (Saputra, Putri, et al., 2022). The discussion must therefore advocate for a patient, process-oriented approach to funding, where donors and governments value capacity building and social cohesion as critical metrics of success, alongside hectares planted.

Furthermore, the long-term success of this Blue Carbon solution is entirely dependent on the continued commitment of the community, which in turn is contingent on the sustained flow of benefits, both economic and ecological. This creates a virtuous cycle: healthy mangroves support robust fisheries and tourism, which sustains community buy-in, which ensures the mangroves continue to store carbon and protect the coast. Breaking this cycle at any point—through a collapse in fish stocks, a failure to share carbon revenue, or a natural disaster—poses a significant risk (Hoffmeister, 2021).

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA
JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dof Crossref INDEX COPERNICUS ROAD ISJD OneSearch EBSCO

In conclusion, the results from this Balinese community service project demonstrate that mangrove conservation is a multifaceted solution that operates at local, national, and global scales simultaneously. The discussion solidifies the argument that the protection and restoration of these ecosystems are not just an environmental imperative but a socio-economic strategy and a diplomatic opportunity. The "Global Green Diplomacy" model, fueled by cross-border collaboration, provides the necessary framework and resources to amplify local action. It connects the villager planting a propagule in Bali to the international climate negotiator, the ethical investor in a distant financial center, and the global citizen concerned about the planet's future. This case study proves that the most potent solutions to the climate crisis are often not found in silver-bullet technologies but in the empowerment of local communities to become the guardians of the world's most effective natural ecosystems. The future of Blue Carbon, therefore, may depend less on sophisticated remote sensing alone and more on our ability to foster the inclusive, equitable, and cross-cultural partnerships that make a community in Bali see a mangrove not as mud, but as a cornerstone of their prosperity and a vital contribution to global stability.

CONCLUSION

In conclusion, the community service initiative in Bali's mangrove ecosystems powerfully demonstrates that the path to effective and sustainable environmental conservation is through the strategic integration of local action and global partnership. This model transcends the traditional view of community service as mere volunteerism, positioning it instead as a critical linchpin in a larger framework of global climate solutions. The success in Bali underscores that when local communities are empowered as co-designers, managers, and primary beneficiaries of conservation efforts, their innate knowledge and sustained commitment become the most reliable guarantors of long-term ecological health. This local engagement, in turn, creates the tangible, on-the-ground impact that global frameworks like Blue Carbon and Green Diplomacy require to be credible and effective. The cross-border collaboration—channeling scientific expertise, ethical finance, and diplomatic support to the local level—amplifies this impact, transforming isolated acts of planting into a verifiable and scalable strategy for carbon sequestration, coastal resilience, and biodiversity protection. Therefore, the case of Bali offers a replicable paradigm for the world: the fight against climate change can be won not by a single top-down solution, but by fostering a multitude of such inclusive partnerships where the stewardship of local communities is recognized, valued, and integrated into the global green economy. The future of our blue planet depends on our ability to replicate this synergy, ensuring that the communities on the front lines of environmental change are the very ones empowered to lead the way towards a more sustainable and equitable future for all.

REFERENCES

Darmawan, N. A. S., Laksmi, P. A. S., & Saputra, K. A. K. (2023). Socialization of E-commerce for Marketing Agricultural Products in Sangsit Village, Sawan District, Buleleng Regency, Bali. *Community Service: Sustainability Development*, *1*(1), 2018–2022.

Hamimah, T., Nurul Huda, N., Uni Kamlun, K., Rosmalina, A. R., & Jennifer, C. K. L. (2022). Sustainability assessment of mangrove forest as a tourist destination: A case study using GSTC Criteria in Kota Belud, Sabah, Malaysia. *IOP Conference Series: Earth and Environmental Science*, *1053*(1). https://doi.org/10.1088/1755-1315/1053/1/012028

Hoffmeister, L. (2021). *Sustainability in the financial system: ESG and corporate credit risk-An empirical study of the European banking sector*.

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA
JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dbi ROAD ISJD EBSCO

Huang, D. Z. X. (2021). Environmental, social and governance (ESG) activity and firm performance: a review and consolidation. *Accounting and Finance*, *61*(1), 335–360. https://doi.org/10.1111/acfi.12569

Krisnawati, N., Sule, E. T., Febrian, E., & Hassan, M. (2016). Competitive Strategy and Its Impact on Hotel Performance: A Partial Least Squares Approach on Hotel Managers in Bali, Indonesia. *International Journal of Economics, Commerce and Management United Kingdom*, *IV*(7), 455–465.

Laksmi, P. A. S., & Arjawa, I. G. W. (2023a). Kearifan Lokal dalam Mendukung Pengembangan Industri Kreatif di Provinsi Bali. *Journal Scientific Of Mandalika (JSM) e-ISSN 2745-5955 | p-ISSN 2809-0543*, *4*(1), 1–15.

Laksmi, P. A. S., & Arjawa, I. G. W. (2023b). Peran Pemerintah Dan Modal Sosial Dalam Meningkatkan Kesejahteraan Pelaku Usaha. *Journal Scientific Of Mandalika (JSM) e-ISSN 2745-5955 | p-ISSN 2809-0543*, *4*(3), 12–21.

Laksmi, P. A. S., Arjawa, I. G. W., & Pulawan, I. M. (2023). Community Participation to Improve Tourism Industry Performance: A Case Study in Mandalika Lombok Tourist Area. *International Journal of Social Health*, *2*(6), 377–384.

Laksmi, P. A. S., Putra, Y. D., Sara, I. M., Setena, I. M., Putra, I. K., & Jamaludin, M. R. (2023). Self-Reliance with Nature: Development of Subak Ecotourism as an Effort to Empower the Local Community in Siangan Village, Gianyar District, Gianyar Regency. *Bhakti Persada Jurnal Aplikasi IPTEKS*, *9*(2), 118–123.

Laksmi, P. A. S., & Saputra, K. A. K. (2024a). Manajemen Bisnis Pariwisata. In *Manajemen Bisnis*.

Laksmi, P. A. S., & Saputra, K. A. K. (2024b). *Manajemen Pariwisata Budaya*. https://www.google.co.id/books/edition/PARIWISATA_BUDAYA/v3jNDwAAQBAJ?hl=id&gbpv=0

Laksmi, P. A. S., Saputra, K. A. K., Noordin, N. M., & Barreto, C. A. (2024). The Effect Of Competitive Advantage And Sustainable Management On Sustainability Performance. *Jurnal Bisnis Dan Akuntansi*, *26*(2), 1–14. https://doi.org/https://doi.org/10.34208/jba.v26i2.2477

Law, A., De Lacy, T., Lipman, G., & Jiang, M. (2016). Transitioning to a green economy: The case of tourism in Bali, Indonesia. *Journal of Cleaner Production*, *111*, 295–305. https://doi.org/10.1016/j.jclepro.2014.12.070

Manurung, D. T. H., Hidayah, N., Setiany, E., Saputra, K. A. K., & Hapsari, D. W. (2022). Do Carbon Performance and Green Investment Affect Carbon Emissions Disclosure? *Journal of Environmental Accounting and Management*, *10*(4), 335–344. https://doi.org/10.5890/JEAM.2022.12.001

Ojelel, S., Katuura, E., Mucunguzi, P., & Kalema, J. (2025). Comparative analysis of floristic richness and diversity in six central forest reserves of north eastern Uganda. *BMC Ecology and Evolution*, *25*(1), 12. https://doi.org/10.1186/s12862-024-02323-1

Saputra, K. A. K., Darmawan, N. A. S., & Laksmi, P. A. S. (2024). *Kajian Etnografi Kinerja Berkelanjutan*.

Saputra, K. A. K., Dewi, A. A., Laksmi, P. A. S., & Dharmawan, N. A. S. (2025). The Role of Environmental Accounting Education and Renewable Energy Adoption in Advancing Sustainable Business Practices. *Jurnal Ilmiah Akuntansi Dan Bisnis*, *20*(1). https://doi.org/10.24843/JIAB.2025.v20.i01.p02

Saputra, K. A. K., & Dharmawan, N. A. S. (2025). The role of environmental accounting in preserving cultural heritage: a case study in Tenganan Pegringsingan village, Bali, Indonesia. *International Journal of Environmental, Sustainability and Social Science*, *6*(1), 127–133.

CATRA RESEARCH INSTITUTE
ISSN - 2809-7947 (PRINT)
ISSN - 2829-0771 (ONLINE)
AKUNTANSI HUMANIORA
JURNAL PENGABDIAN MASYARAKAT
PUBLISHING OKSI
Indexed By : GARUDA Google dof Crossref INDEX COPERNICUS ROAD ISJD OneSearch EBSCO

Saputra, K. A. K., & Laksmi, P. A. S. (2024). The Influence of Green Governance, Implementation of Energy Accounting, and Green Human Resource Management on Sustainability Performance: An Empirical Study in the Hospitality Industry in Bali. *Jurnal Ilmiah Akuntansi*, *9*(1), 113–136. https://doi.org/DOI: 10.23887/jia.v9i1.66630

Saputra, K. A. K., Laksmi, P. A. S., & Dharmawan, I. N. A. S. (2025). Akuntansi Manajemen Lingkungan. In *Manajemen Lingkungan* (Vol. 7).

Saputra, K. A. K., Mu'ah, Jurana, Korompis, C. W. M., & Manurung, D. T. H. (2022). Fraud Prevention Determinants: A Balinese Cultural Overview. *Australasian Accounting, Business and Finance Journal*, *16*(3), 167–181. https://doi.org/10.14453/aabfj.v16i3.11

Saputra, K. A. K. S., & Jayawarsa, A. A. K. (2023). Potential Tourism Village Development Activities in Kerobokan Village, Sawan District, Buleleng Regency, Bali. *Community Service: Sustainability Development*, *1*(1), 38–44.

Saputra, K. A. K. S., Putri, P. Y. A., & Kawisana, P. G. W. P. (2022). Ecotourism, Agricultural Products, And Biological Assets In Accounting. *RJOAS*, *2*(122), 47–54. https://doi.org/10.18551/rjoas.2022-02.08

Saputra, K. A. K., Subroto, B., Rahman, A. F., & Saraswati, E. (2022). Eco-Efficiency and Energy Audit to Improve Environmental Performance: An Empirical Study of Hotels in Bali-Indonesia. *International Journal of Energy Economics and Policy*, *12*(6), 175–182. https://doi.org/10.32479/ijeep.13565

Singh, N., Tang, Y., & Ogunseitan, O. A. (2020). Environmentally Sustainable Management of Used Personal Protective Equipment. *Environmental Science and Technology*, *54*(14), 8500–8502. https://doi.org/10.1021/acs.est.0c03022

Suwitra, I. M. S., Widyantara, I. M. M., & Aryawijaya, I. K. K. (2022). Ulayat forest management based on customary law in the Tenganan Pegringsingan traditional village, Karangasem, Bali. *International Journal of Research in Business and Social Science (2147-4478)*, *11*(10), 416–422.