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The Conservation Story of Biri-Larosa Protected Landscape/Seascape: Lessons Learned and Future Directions

Rene John Escal[1*]

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ABSTRACT

Biri-LAROSA Protected Landscape and Seascape (BLPLS), a marine protected area in Northern Samar, suffers from biological degradation despite its legal protection for biodiversity. This study uses a qualitative descriptive design to analyze the conservation measures in BLPLS. It aims to identify lessons learned for an informed future direction of conservation strategies. The conservation programs implemented in BLPLS succeeded in rehabilitating and enhancing its major ecosystems primarily because of strong legal bases. It gradually educates the people about their social responsibility as stewards of nature. On the other hand, implementation struggles from inability to fully implement it. As a result, although illegal activities declined, it is still prevalent. Nevertheless, the implementation of the conservation programs brought ecological, economic, social, and cultural benefits. The ecological benefits of the conservation program are manifest and latent. It has also generated economic benefits, namely ecotourism offshoot and conservation programs derivatives. In terms of social benefits, it provided a fountain of learning, social change, diversion, and community attachment. Among the cultural benefits are the preservation of customs and historic preservation. The researcher recommended that interagency efforts be placed to impose more stringent and harmonized implementation of conservation policies and institutional reform and capacitate implementers and communities. The creation of reward systems, context-based environmental education, institutionalization of program impact assessment and evaluation studies, and data-based decision-making for program development plans can also help.

INTRODUCTION

Dudley and Stolton (2008) defined protected area as a parcel of land and/or sea proclaimed through an organic law for its protection and conservation because of its valuable biological diversity, the richness of its natural and cultural resources. This entails the interlink of the three elements namely protection of biodiversity, safeguarding natural and cultural resources, and assurance of human survival. National Integrated Protected Areas System Act of 1992 (RA 7586) provides the main backbone of the establishment of a national system of protected areas in the Philippines. This was then strengthened through the passage of the Enhanced National Integrated Protected Areas Systems Act of 2018 (RA 11038). Unfortunately, according to DENR and Ateneo Schools of Government (2014), though protected areas experience a lower rate of habitat loss than those areas not protected, they still experience dramatic habitat losses within their borders. Threats continue to affect biophysical diverse protected areas and Key Biodiversity Areas.

Brokington and Schmidt-Soltau (2004) recognize the importance of conservation programs in safeguarding protected area's benefits, such as the provision of ecosystem services, employment opportunities, and the preservation of culture. It is evident that protected areas also bring economic machineries (Mika *et al.*, 2016). While protected areas harbor various functions, such as ecological, economic, and social functions, their cultural value has been noted yet largely ignored in practice. Infield (2001) suggested that conservation program in the context of local culture provides a counterbalance to economic pressure to the protected area. In many cases, wildlife, nature, and landscape valuation contribute to the commercialization of conservation and the downplay of cultural values.

According to Benneth and Dearden (2014), the success of any conservation program is always linked to local support for conservation which is influenced by their perceptions of the impacts they experienced. Notably, people have become participative when they benefit from the conservation strategy. In 2012, Karath and Nepal concluded that the positive attitude of people living in the protected area on the existence of protected area is related to the benefits it offers like access to fuel wood, fodder, tourism, and supply for their livelihood. On the contrary, people show a negative attitude towards conservation policies and interventions due to policy-induced loss of benefits (Liu *et al.*, 2017). Other associated factors include a lack of education and awareness (Nguyen, 2017).

Undeniably, protected areas throughout the globe face problematic situations in balancing conservation and provision of human needs. Hocking, Stolton, and Dudley (2004) suggested the need to understand the strengths and weaknesses in its management. Leverington *et al.* (2010) stipulated that at the global level its strongest aspects are the establishment of protected areas in terms

[1] University of Eastern Philippines, Philippines
[*] Corresponding author's e-mail: renejohnescal.rje@gmail.com

of legal basis, design, legislation, boundary making, and effectiveness of governance. On the other hand, its weakest aspects are community benefit programs; and resourcing such as funding reliability, adequacy of staff numbers, and facility and equipment maintenance.

The success of a conservation program must encompass both biological and social measures and include learning and the application of new knowledge to management. Dysfunctional programs can cripple the conservation effort which eventually leads to biological catastrophe. Understanding how programs and policies can prevent species loss and ecosystem degradation rests primarily on field initiatives. According to Ferraro and Pattanayak (2006), field of ecosystem protection and biodiversity conservation lags which is why there is an increasing need for state-of-the-art program evaluation methods of what works and when it works arises.

In Northern Samar, there is only one existing protected area in the province known as the Biri-LAROSA Protected Landscape and Seascape (BLPLS), established through Presidential Proclamation NO. 291, series of 2000 encompassing the Municipality of Biri and the coastal barangays of Lavezares, Rosario, and San Jose. Canoy and Roa-Quiaoit (2011) mentioned the BLPLS as one of the country's protected areas that are currently facing threats from destructive and human-invasive activities such as coral quarrying, illegal logging of mangroves, overharvesting of fish, dynamite and cyanide fishing, and pollution. The protected area only scored 26 percent in the Management Effectiveness Tracking Tool (METT), which is considered a very low score (Guiang & Baraganza, 2014). This prompted the researcher to further investigate the impacts, successes, and challenges in the implementation of the conservation practices in BLPLS.

The study aimed to describe impacts, successes, and challenges in adherence to the different conservation practices of Biri-LAROSA Protected Landscape and Seascape.

MATERIALS AND METHODS

This study employed qualitative descriptive research design. Participants of this study were the people living within BLPLS and its stakeholders. Employing stratified purposive sampling based on their specific involvement and municipality, five (5) groups were formed; four groups of beneficiaries and one group of implementers. Beneficiaries were barangay officials, people's organization officials, fishers, farmers, civic group representatives, and MENRO. Meanwhile, the implementer sample included partner NGOs and members of PAMB Executive Committees. Unfortunately, because of the unavailability of a synchronous interview with these concerned officials, the researcher opted to conduct individual interviews for the implementers. There were fifty-two (52) total participants for this study. They were selected as participants because the researcher believed that they were the most knowledgeable about the different conservation practices. Two (2) FGD guides were used in collecting primary data; one for the beneficiaries and the other for the implementers. The instruments were subjected to face and content validity through rigorous scrutiny of internal and external experts. During the FGDs and interviews, the researcher took notes for key phrases and major points. Sessions were recorded in audio and video to obtain actual quotations. Afterwards, debriefing was conducted. Recordings were also checked, record significant details, and note observations to determine the quality of the information. After the FGDs and interviews, the researcher transcribed the sessions. The generated transcripts were subjected to thematic analysis using Braun and Clarke's (2006) model. All noteworthy statements were translated using context translation. The researcher upheld the ethical principles in conducting the research such as, honesty, objectivity, integrity, carefulness, openness, respect for intellectual property, confidentiality, non-discriminatory, competence, legality, and human subject protection (Shamoo & Resnik, 2015). To address positivists' criticism on the reliability and validity of the result of the study, trustworthiness (Guba, 1981) were established.

RESULTS AND DISCUSSION

Impacts of Conservation Programs

Figure 1 presents that the conservation programs covers ecological, economic, social, and cultural benefits of the protected area.

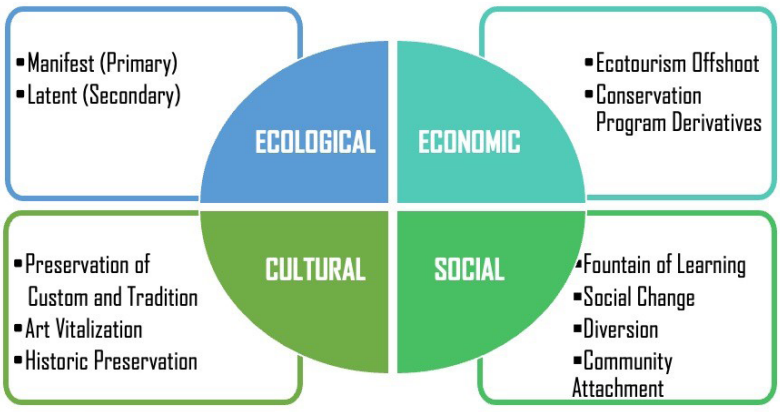

Figure 1: Impact of Conservation Programs to BLPLS

Ecological Benefits

It emerges that the ecological benefits of conservation practices are manifest (primary) and latent (secondary). Manifest benefits are intended benefits, such as, improve marine conditions, shelter diverse species, protect PA's major ecosystems, buffer natural disasters, and preserve PA's aesthetic beauty. As one participant said, "Now, I could see a lot of fry unlike before." Meanwhile, latent benefits are unintended benefits brought by its implementation like the abundance of resources as one revealed, "If you are industrious enough, you can earn money and have a food to eat too."

This finding confirmed Brokington and Schmidt-Soltau's (2004) proposition that one of advantages of conservation programs is their ability to safeguard ecosystem services of the protected. Consequently, Spiteri (2007) called them extract, conservation, and mitigation benefits. Likewise, it coincided with Reintar, Jakosalem, and Paguntalan's (2015) findings that natural parks have the credibility of sheltering biologically diverse lifeforms.

Economic Benefits

Conservation programs generated two economic benefits namely, ecotourism offshoot and conservation program derivatives. Ecotourism offshoots are benefits brought by the utilization of the protected area's rock formations, beaches, mangrove forests, crystal clear oceans, and historical sites for recreation. This also includes new business opportunities, income from environmental fees, new job opportunities, a boost in the tourism industry, and spin-offs in TV appearances. As cited by one of the participants, "Those who own parking areas are earning." Moreover, conservation program derivatives are economic by-products of other conservation programs like livelihood programs, extra income for beneficiaries, income from penalties, and improved buying capacity. One participant stated, "Fish cage livelihood recipients able to buy motorboats and motorcycles."

These testimonies supported the assertion of Brokington and Schmidt-Soltau's (2004) and Mika *et al.* (2016) that conservation practices bring economic opportunities like ecotourism, employment, and livelihood programs. It is also in consonance with Spiteri's (2007) enumerated economic benefits of conservation namely accommodations, tourist facilities, entry fees, income, business, employment, market goods, transportation and tourism.

Social Benefits

The implementation of conservation programs in the protected area has four benefits namely, fountain of learning, social change, diversion, and community attachment. Fountain of learning refers to its ability to provide knowledge among beneficiaries, implementers, and other stakeholders through opportunities for new learning experiences, setting for research, and a deeper understanding of nature. One narrated, "they are able to attend national and local forums." Meanwhile, conservation programs bring social change displayed through women empowerment, social control enforcement, prioritized assistance from government and NGOs, cooperation, harmonious living with nature, and responsible tourism. One participant cited, "Women organizations were formed in our island coastal barangays." Another social benefit is diversion referring to the utilization of the protected area for activities that divert from tedious and serious concerns in life. The protected area becomes the place for recreational activities, relaxation, adventure, and celebration. One participant averred, "we were there also to celebrate the Black Saturday." Lastly, conservation programs enforce the community attachment of the people to the protected area, which refers to the development of their cognitive and affective ties among themselves as a community and to the place they live in. People living in the protected area develop in themselves a sense of place. This is evident in the statement of one of the participants, "a lot of his movie settings were shot in Biri" with an uplifting tone of voice signifying joy and pride. This finding proved that conservation programs benefit social development in terms of social control, education, fun, and fame (Spiteri, 2007).

Cultural Benefits

There are three cultural benefits of the conservation programs in protected areas namely preservation of customs and tradition, art vitalization, and historic preservation. Preservation of customs and tradition refers to the role of sustaining the customs and tradition of the community evident in the preservation of old ways of life in the coastal communities, celebration of annual festivals, perpetuity of the belief in local myths, and practice of local dishes. One participant shared that "Kinis Festival is celebrated every October." Furthermore, the constant effort of preserving the BLPLS sparks creativity and inspires the community and artists resulting in art vitalization. One revealed that "every December, we have Christmas Tree Contest by purok." On the other hand, part of the cultural benefit is historic preservation which is the preservation, conservation, and protection of landscapes, objects and other artifacts of historical significance. One participant said, "The mayor ordered its rehabilitation and beautification through the construction of a bridge to make it camera-worthy," referring to World War II bomb site.

This has proven Saviano *et al.* (2018) proposition that protected areas have a cultural value. This was also supported by Infield (2001) and Major *et al.* (2018), and Perrault *et al.* (2007) as they contended that culture-based and culture-sensitive conservation strategies are important to counterbalance ecological, economic, and social pressure for the continuity of aged practices and beliefs of the community.

Successes and Challenges of the Conservation Practices

Six (6) conservation practices emanates from the

responses of the participants namely solid waste management, mangrove forest resources management, seagrass beds protection and conservation, coral reefs protection and conservation, sustainable methods of fishing, and ecotourism.

Solid Waste Management

Figure 2 shows the practices, success, and challenges in the implementation of Solid Waste Management. Conservation practices related to solid waste management is successful primarily because of the existing legal instrument as LGUs localized the mandate of RA 9003. It commenced the immense movements of institutionalized cleanup drives of government agencies and NGOs, utilization of varied information drives, establishment of systematic waste collection, waste reduction initiatives, and establishment of a reward system. A participant described, "our collection outside the Población involve MRF. We will collect only the non-biodegradable. We don't collect non-biodegradables from one household to another because it is prohibited. As for the biodegradable, it is the barangay that takes charge of the composting. That is how we do it." One participant commented, "our barangay, through our barangay captain, implemented the segregation of plastics. These plastics will be cut out and if the accumulated cutouts reach 1 kilogram, you will receive 1 kilogram of rice in return." Another participant mentioned, "In our barangay, aside from bandillo, we also visit every household to distribute flyers letting them know the prohibitions."

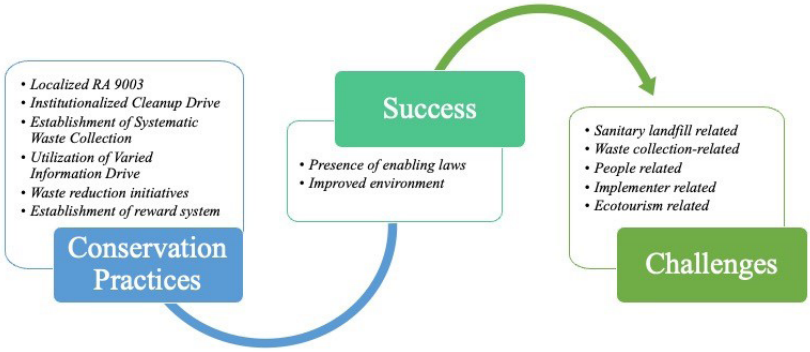

Figure 2: Practices, Success, and Challenges in the Implementation of Solid Waste Management

On the other hand, its implementation faces challenges related to sanitary landfills, waste collection, MRF, people, implementers, and ecotourism. The establishment of a sanitary landfill is the biggest concern because most of the municipalities in the PA use open dumpsites and have no machinery to process collected garbage. In addition, the collection of waste is irregular and sometimes not followed, segregation of waste is not practiced in some households, and some areas in the municipality/ barangay are not served. As one of the participants described, "it often happens twice a month. But sometimes it is not observed." Another problematic situation is that some of the barangays do not have functional MRF, while others have problems with the proper location to put the MRF, and others do not have MRF. Participants also mentioned negative attitudes as one of the problems that resulted in their unvigilant who are not following the policy. It can also be associated with the implementer as they do not have a strong political will to implement it, the punishment is too light, and personal biases like "pakikisama" and intrusion of politics. One revealed, "it's already announced by the barangay chairman to its constituents that if ever they witness someone who violates, take a picture of them, so they will be disciplined. But no one has been apprehended since then." Another problem are the accumulated waste in tourism facilities as one recalled, "near Marson's Resort is a fishpond. The owner filed a complaint in the office because, during high tide or heavy rains, water would carry the resort's pile of trash inside their property. Thus, they want people to be more responsible for their own waste."

These findings confirmed the conclusion of Mado (2001) that despite people's awareness of solid waste management policies, still people violate these legislations. The study also affirms the importance of political support in addressing the solid waste problem where collective action greatly matters (Adongay, 1996). In a similar study conducted by Moussa *et al.* (2023), Kollo municipality was not able to accomplish its goals in solid waste management because of a lack of financial and technical resources.

Mangrove Forest Resources Management

Among the mangrove protection and conservation measures are the establishment of mangrove plantations, rehabilitation of abandoned fishponds, reforestation, mangrove forest maintenance, zoning, monitoring of illegal activities, and intensified information dissemination. This eventually paved the way in reducing the incidents of illegal cutting of mangroves as one claimed, "unlike before, many are displayed for sale along the highway." Because of these efforts, gradually more and more migratory birds can be seen now as disclosed. In general, the presence of enabling laws also helps a lot in achieving this. The effort of network of people working together to actualize its protection and conservation measures through a partnership is very remarkable. According to one of the participants, "we also extend hand to the barangay. SADAKIS, a people's organization I'm connected with, coordinated with the DENR, barangays, and other people's organization for the implementation

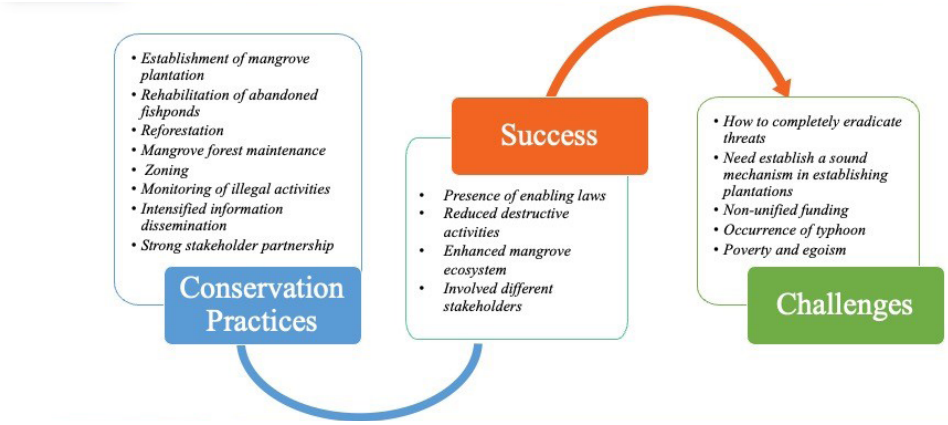

Figure 3: Practices, Success, and Challenges in the Implementation of Mangrove Forest Resources Management

of those laws and ordinances."

Meanwhile, one of the reoccurring problems in the mangrove forest resources management is the persistence of threats to mangrove resources such as mangrove logging, charcoal production, "barok" processing, practice of "sarap," crablets gathering, encroachment, and typoon. One disclosed, "what destroyed the mangroves is the making of barok for coconut wine" while the other revealed, "after planting, the propagules were tramped down by crablet gatherers." In addition, mangrove plantations were established without rigorous validation of the planting site considering certain species only strive for certain coastal environments. One participant cited, "they take grown mangroves from the wild for the sake of validation. Plant it, take a picture, and then receive remuneration. These planted mangroves then die later." Nonetheless, other problems include non-unified funding, human egoism, privatizing mangrove areas, and the occurrence of destructive typhoons. Another problem is the communities' habit of abusing nature characterized by repetitive violation to the point of exploiting minors as crime scapegoats. Despite the presence of a legal basis for its protection like penalizing destructive activities, effective enforcement still cannot be enforced and there is the struggle to provide a more engaging information drive and frequent night monitoring of violators. As disclosed by one participant, "there are still few who are involved in cutting mangroves. It is unnoticeable because they use handsaw and do it at night."

Chamberland-Fontaine *et al.* (2022) generate the same result that effective mangrove conservation practices are raising awareness-raising activities about socio-ecological benefits and build a partnership with stakeholders. Whereas, constantly enforcing the conservation practices remain a challenge. Damastuti and de Groot (2017) associate this the level of acceptance on protective legislation.

Seagrass Beds Protection and Conservation

Among the measures made to secure seagrass beds are the prohibition of uprooting seagrasses, encroachment, destructive fishing activities, strict compliance with management zoning, and reforestation. In line with this effort, the program was able to provide a supplemental livelihood to ensure an alternative source of subsistence. One participant revealed, "we only permit the fish pens because they are part of our mariculture projects." Collaboration of different stakeholders through a memorandum of agreement with the community, and tie-up with academe is very helpful in making informed decisions in managing seagrass as the major ecosystem. As the participant revealed, "we signed a memorandum of agreement with the stakeholders of the protected area for them not to expand their settlement towards the seagrass areas."

However, the implementation caused deprivation; denying people access to areas where seagrasses are growing. Its implementation, brought inconvenience in docking,

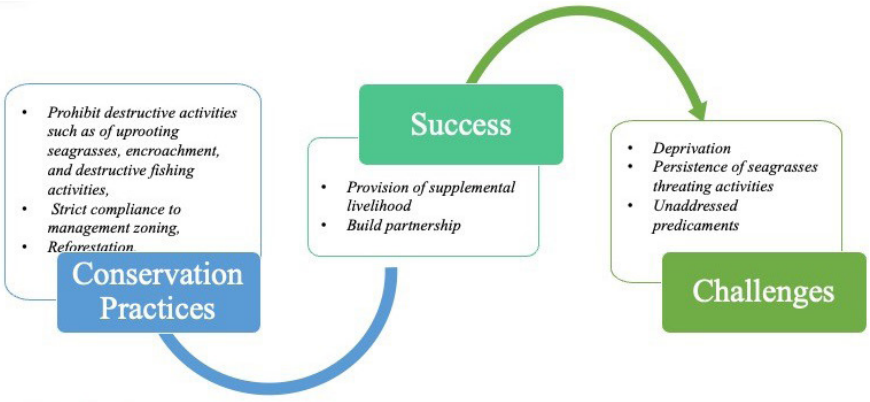

Figure 4: Practices, Success, and Challenges in the Implementation of Seagrass Beds Protection and Conservation

thereby somehow withdrawn people from their source of livelihood, and causing their displacement. As one revealed, "if we will be very strict with that especially with motorboat operators, how could they dock because they really have to cross through the seagrass?" Despite all the effort, it continuously experience degradation because of inevitable stamping, removal of coral rocks, disposal of waste to waterways, practice of "sarap," and unfriendly coastal development. This boils down to unaddressed predicaments like lack of awareness on the importance of seagrasses, insufficient employment opportunities, inefficient supplemental livelihood, absence of legal basis, overlapping authority of agencies, and authorities' negligence of duty.

Ramesh *et al.* (2018) found similar threats to seagrass beds such as unsustainable fisheries, water quality, and coastal construction. They emphasize that people's participation is important. The same findings were made by Xu *et al.* (2021) that clam harvesting, land reclamation, and coastal aquaculture are some threats to seagrasses. Lukman *et al.* (2021) also acknowledge the significance of raising awareness of its socio-ecological significance and the support of the community in its conservation. To address these problems, Yu and Dong (2022) suggested that there should be local legislation to sustainably management the seagrass beds ecosystem. Furthermore, Mascarinas and Otadoy (2022) highlighted the necessity of implementing a rehabilitation program to improve the seagrass community structure.

Coral Reefs Protection and Conservation

Conservation strategies that safeguard and rehabilitate the coral reefs include artificial corals, coral transplants, coral nurseries, coral monitoring, limited permits to only extraction for research, and intensified information drive. One recalled, "back then, UP Diliman had coral transplant in our sanctuary." Conversely, the advantageous effects of its implementation are healthier corals, and a decrease in illegal fishing activities. As averred by one participant, "we did not totally eradicate illegal activities, but at least it had declined." Relative to this, one revealed, "right now, I'm not involved in it anymore because I learned a lot from trainings and seminars I attended." On the contrary, prevailing threats to corals include destructive fishing and infestation of crown of thorns. Other problems encountered are the absence of evaluation of coral rehabilitation, abuse of political power, selective implementation of policy, overlapping authority of agencies, and lack of integration of climate change resiliency. As revealed by the participants, "in Maravilla, the wharf is built from coral rocks. Biri was complaining because in Lavezares it was not apprehended for the said violation citing if it happens in Biri, for sure they will be reported right away."

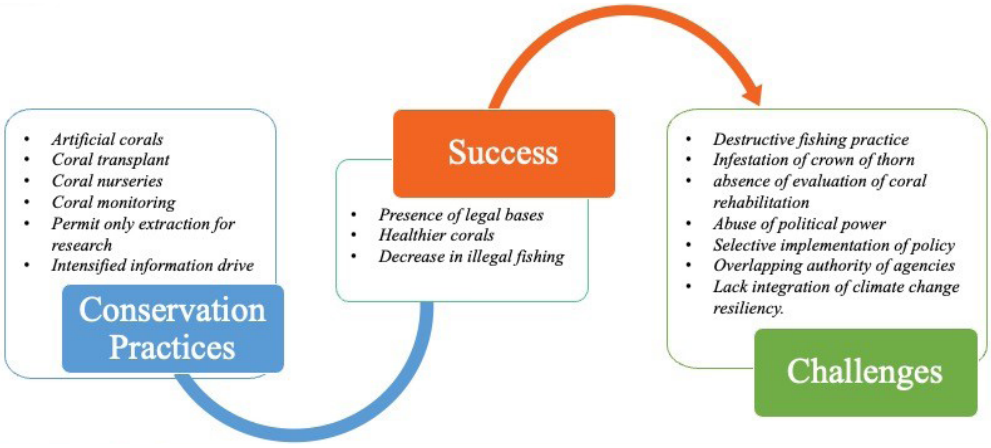

Figure 5: Practices, Success, and Challenges in the Implementation of Coral Reef Protection and Conservation

Boakes *et al.* (2022) recognizes also that climate change, destructive fishing practices, plastic pollution, outbreaks coral coral-eating invertebrates, nutrient enrichment, coral disease, and unsustainable tourism are some of the threats to marine ecosystems. To address these problems, Bali has implemented climate change mitigation, coral reef conservation initiatives, creating more protected area networks, utilization of artificial reefs, decentralized policy and partnership with NGOs, community engagement, and ecotourism are recommended.

E. Sustainable Methods of Fishing

Fishery resources strategies practiced by stakeholders are the establishment of fish sanctuaries, prohibition of commercial fishing in the municipal waters, practice of seasonal fishing, conduct of sea patrol, prohibition of endangered species possession and harvest, and fish catch monitoring. Parallel to this, one participant disclosed, "we have an ordinance declaring close and open season in Lalaguna. It is closed for fishing from March 1 to May 31." Favorable outcomes are positive impacts of the program manifested in the improvement of fish resources and marine habitats. One attested, "on the days where illegal fishing is still rampant in our barangay, you could hardly see one needlefish. But now, fish resources have already recovered. Sweetlips emperor re-appeared and fishermen have now fish to be caught. Unlike before, you could always hear explosions from near the coast."

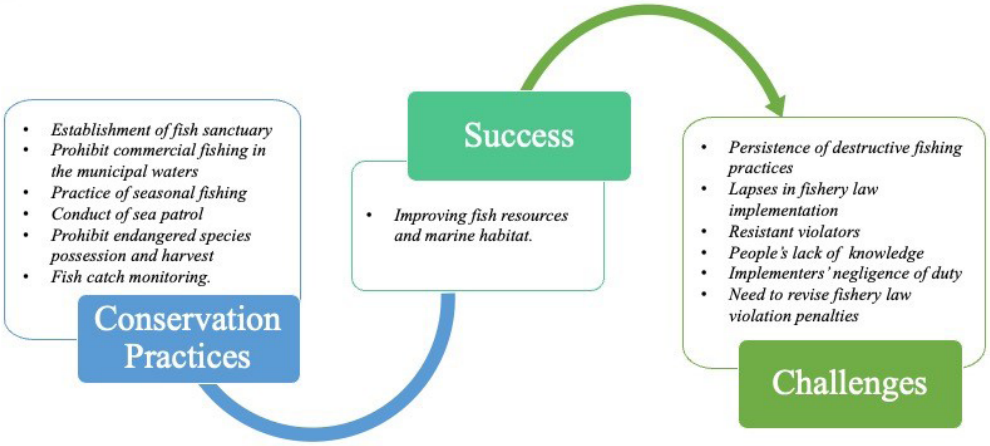

Figure 6: Practices, Success, and Challenges in the Implementation of Sustainable Methods of Fishing

However, the implementation of sustainable methods of fishing still faces challenges. One is the prevalent destructive methods of fishing such as compressor fishing, dynamite fishing, cyanide fishing, "sudsud," "tangab," and "sarap." As one participant disclosed, "In Magsaysay, many died because of compressor fishing. If someone has just died, they would take a rest in the meantime. Soon, they would go back because it's their means of living." In addition, problems related to fishery law persist, such as intruder's illegal fishing activities, non-unified implementation of the Bantay Dagat initiative, lack of funding, overfishing, lack of staff, unattractive livelihood, destabilization of fish sanctuary, and lack of apprehension. As one participant averred, "The sanctuary in Ligaya was destabilized." while another participant revealed, "I give them chickens to keep, but they don't like it. I asked myself, 'What do they want?" Noticeably, illegal fishers becoming untouchable is characterized by a strong desire to survive, no fear of authority, investment to illegal activities, and use of improvised weapons. One participant disclosed, "In my barangay, I tried to apprehend it. Unfortunately, I did not succeed for these violators have brought with them homemade weapons." People's lack of understanding is possibly attributed to their inadequate knowledge about sustainable fishing, evident by their cluelessness with endangered species, misunderstanding of the provision in crablet gathering, and outdated knowledge on imposed penalties due to the recent amendments made to the Fishery Code of the Philippines. It is noticeable in the statement of one of the participants, "Is picking shells prohibited or not? I think not because shellfish are seafood." There are also plausible problems due to the shortcomings of the implementers such as negligence of duty, frequent consideration, prevalent nepotism, and inadequate capacity in apprehending. One revealed, "I feel sorry every time I catch someone because of the penalty. One time the judge told me 'Don't you feel pity for them? They have a family to feed.' But what could we do, they are caught on the act?"

Establishing a protected area is important in protecting fishery resources Steinkoenig (2018) but it does not mean the complete eradication of destructive activities. The result of this study is similar to Liao *et al.* (2019) where illegal fishing, and overfishing, are held primary threats to fishery resources. According to Shalli (2017) the persistence of illegal fishing activities is related to the culture of the community. Hence, it is a must to study their traditional knowledge and input it into the programs/ projects. The fishery law enforcement program has a minimal impact (Milca, 2002; Pabunan, 2006) because it was not fully implemented. Pabunan (2006) attributed this to no proper dissemination of the objective of the program, no proper monitoring, a lack of properly trained staff, the intervention of politics, and a lack of financial support.

F. Ecotourism

Imposition of fines when committing prohibited acts is part of the protection and conservation measures in using the resources of the protected area for ecotourism. This encompasses prohibition of activities, such as seashell collection, littering, grilling in the rock formation, use of single-use plastics, bringing of foods in the rock formations, sand quarrying, and camp firing. In addition, there is an existing management zone to be utilized as a reference for future development in the PA. As ecotourism kicked off, this provided people a place where they could relax have adventure, and enjoy advantage because of business opportunities. As cited by one participant, "Those who own parking areas are earning."

Meanwhile, one of the challenges encountered is the presence of pejorative activities such as unregulated rock fragment collection, lack of monitoring in the rock formation, no existing anti-vandalism regulation, illegal operation of beach owners, no computed carrying capacity, and no legal instrument regulating recreational activities. This was affirmed when a participant admitted, "we have a small violation because we let them sneak at least small rocks" while the other revealed, "As of now, they still don't have to limit the number of environment users." Additionally, problematic ecotourism services that hamper the boom of the ecotourism industry include a lack of tourist assistance, lack of English-

speaking skills tour guides, lack of systematic tourist arrival record keeping, and poor security. One of the participants revealed, "the motor operator could not respond whenever there is a tourist who speaks English." There are a lot of ecotourism sites left unutilized evident in underdeveloped falls, rock formations, caves, beaches, and historical sites. As mentioned by one participant, "no one invested in the development of Busay." The implementation has disadvantages and this was termed as ecotourism drawbacks. Accordingly, there are already negative consequences to the environment. Another concern was that the revenue accumulated from payments of environmental fees were misused as revealed by the participant, "One of the intervening factors is the irregular monitoring from the LGU. They should help in the maintenance because they are the ones who receive the environmental fee."

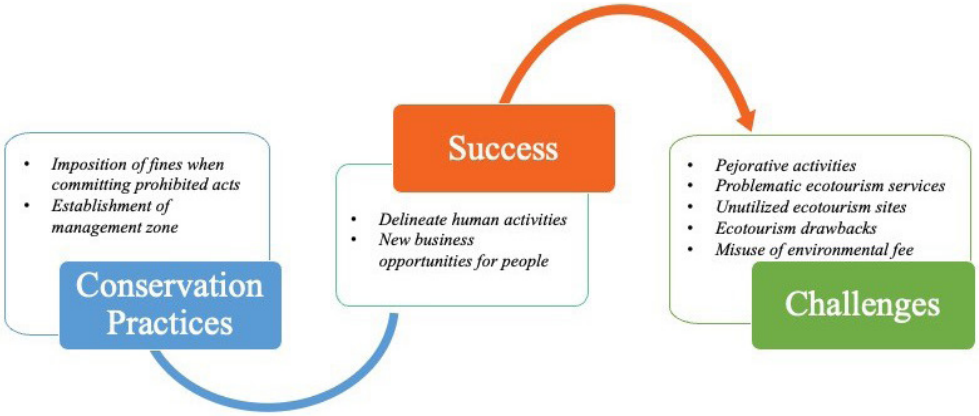

Figure 7: Practices, Success, and Challenges in the Implementation of Ecotourism

The study affirmed Mika *et al.* (2016) statement that an efficient ecotourism program brings economic advantage and development. It provided community people with business opportunities and a place for diversion. These economic opportunities include ecotourism services, recreational activities, and the construction of ecotourism infrastructure like eco-lodge, trails, campsites, visitor centers, toilet facilities, and watch towers. Meanwhile, its effect to the environment is negative. With this scenario, it confirmed the claim of Pambuena (2002) that ecotourism services are prematurely put into action. Other ecotourism service providers are very irresponsible in taking good care of their wastes which later end up in the ocean. Another problem was the revenue generated from ecotourism which was not utilized for maintenance and management of the site. This contended Catibog-Sinha and Plantilla's idea that the program helps generate revenue from an environmental fee system to accumulate funds that can readily provide maintenance for the area.

CONCLUSIONS

Based on the study's findings, the researchers concluded that BLPLS conservation practices brought ecological, economic, social, and cultural benefits. Among these conservation practices are solid waste management, seagrass bed protection and conservation, coral reef protection and conservation, sustainable methods of fishing, and ecotourism. In general, conservation practices have a strong legal basis, productive partnership, prioritization, proper execution of conservation laws, applied program phasing, and research-based decisions. On the other hand, other programs failed in the implementation due to a lack of commitment, lack of political will, lot of inconsistencies, negligence of duty, absence of constant monitoring, political intrusion, aggravation of poverty, lack of coordination, deviations to the standard implementation procedure, loss of people's trust and confidence to implementers, and people's insufficient knowledge on wildlife conservation. The programs were well planned and studied, but the problem lies more in the implementation and management by concerned implementers and stakeholders.

It is recommended that since the municipalities of Biri, Lavezares, Rosario, and San Jose may have shared coastal and marine resources, they may develop an integrated management plan that shall be implemented as a whole, not by jurisdiction. Similarly, PAMB and the DENR may also restructure their units to make them more effective and efficient by creating new units/teams and imposing different conservation and environmental laws. Ecosystem-based, research-based, culture-based, and data-driven strategies and approaches will be adopted. Some policy redirections may be advanced as result of the study.

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