

LEGAL ASPECT OF MANGROVE CONSERVATION IN MYANMAR

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Abstract

This paper aims to conserve mangrove in coastal areas of Myanmar. And the objectives of this paper are to safeguard the preservation of mangroves for their environmental advantages, as well as to ensure a sustainable supply of various forests and other products to meet the daily needs of local residents, it is imperative to implement appropriate management strategies for mangrove ecosystems. Mangroves play a crucial role in safeguarding the food security of numerous coastal communities. The management and restoration of mangrove ecosystems present a viable and economically efficient approach to ensuring food security for these communities. The major challenges of mangrove conservation are excessive exploitation of fuelwood and charcoal production, the conversion of mangroves into other land uses such as rice fields, shrimp farming, and salt pans, the development of coastal areas and deltas for human settlement as well as the impacts of climate change and natural disasters. National legal frameworks that address wildlife conservation have been implemented in these countries. States' financial, sociocultural, economic, and environmental spheres play significant roles in the long-term sustainability of wildlife conservation. This paper focuses on the Ayeyarwady Delta as a model system, employing an integrated approach to conserve mangrove ecosystem. It is hoped that by carrying out a study of the environmentally related laws of the country, a better understanding will be achieved of the challenges faced by the country in their efforts to conserve the mangrove and will support the sustainable development of mangrove conservation in Myanmar.

Keywords: Mangrove, conservation, ecosystem, sustainable development, community forestry

Introduction

Mangrove, which can be either trees or shrubs, thrive in the intertidal zone of coastlines, serving as a transitional habitat between the coastal and terrestrial environments. These plants possess remarkable adaptability to survive in saline and brackish conditions, making them truly exceptional.

Myanmar has maritime boundaries in the Bay of Bengal that it shares with Bangladesh, India, and Thailand. Myanmar's coastal zones consist of the Rakhine Coast, Ayeyarwady Delta, and Tanintharyi Coast, extending from north to south. In terms of mangrove coverage, Myanmar ranks as the fourth largest in Asia, with an estimated area of 467,330 ha. The majority of primary mangroves in Myanmar are found in the Ayeyarwady flood plains, while the Tanintharyi and Rakhine areas have smaller portions. The distribution and composition of mangroves vary among these three coastal regions.¹

The mangrove forests are of great significance to Myanmar's economy as they offer natural resources for personal and commercial purposes. The impoverished rural communities residing near the mangrove areas heavily rely on these ecosystems for sustenance and income. Mangroves serve as the basis for a highly productive and biologically diverse ecosystem, serving as a habitat and feeding ground for numerous species. Several species are listed as vulnerable or endangered on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Additionally, they contribute to stabilizing the coastline, mitigating erosion,

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¹ IUCN, Myanmar National Strategy and Action Plan (NSAP), October 2016.

and providing protection against storms. Mangroves store up to four times the amount of carbon compared to inland forests. These forests support local fishing industries and provide coastal communities with food, shelter, small-scale timber, fuelwood, and other forest products.

Aim and Objectives

This paper aims to raise awareness of the importance of mangrove ecosystems as a unique, special and vulnerable ecosystem and to promote solutions for their sustainable management, conservation and uses. And the objectives of this paper are to safeguard the preservation of mangroves for their environmental advantages, as well as to ensure a sustainable supply of various forests and other products to meet the daily needs of local residents, it is imperative to implement appropriate management strategies for mangrove ecosystems.

Method

The methods used for this research are the qualitative method and quantitative method. This research paper encompasses a comprehensive examination of literature and legal resources pertaining to international and national law and policy. Additionally, it entails an evaluation of legal instruments related to mangroves in Myanmar. The collection of events that aid in the management of mangroves was sourced from interviews with locals and articles scholarly journals.

Results and Discussion

1. Mangrove Conservation and Management

The rise in human population along coastal areas is leading to increased strain on mangrove ecosystems in Myanmar. This is primarily due to the escalating demand for timber, fuelwood, fodder and other non-wood forest products. In order to safeguard the preservation of mangroves for their environmental advantages, as well as to ensure a sustainable supply of various forests and other products to meet the daily needs of local residents, it is imperative to implement appropriate management strategies for mangrove ecosystems. Effective management can also create new opportunities for self-employment, such as ecotourism, fishing, beekeeping and cottage industries centered on mangrove forests products. This, in turn, can contribute to enhance the socio-economic conditions of the local communities.

2. Natural Hazards and Problem Caused by Humans

The mangrove ecosystems in Myanmar have faced significant threats due to various factors. These include the excessive exploitation of fuelwood and charcoal production, the conversion of mangroves into other land uses such as rice fields, shrimp farming, and salt pans, the development of coastal areas and deltas for human settlement, the improper collection of revenue on mangrove products in forest management, as well as the impacts of climate change and natural disasters. According to a spokesperson from the ministry, approximately 600,000 acres of coastal land in Myanmar are now at risk of natural disasters due to the depletion of mangroves. U Aung Than Zin, the chief executive of the Myanmar Environment Rehabilitation-conservation Network, highlighted that the destruction of mangroves in Ayeyarwady, Tanintharyi, and Rakhine is primarily caused by charcoal production and the clearing of land for shrimp and salt farms.¹

¹ Hein Soe, Saving the mangroves, Frontier Myanmar, August 2, 2016.

In recent decades, more than 60% of the mangroves in the Ayeyarwaddy Delta have been eradicated. This destructive trend can be attributed to the conversion of land for rice cultivation and human settlements. As a result, the depletion and clearance of mangroves are expected to have a detrimental impact on the fisheries in the area, ultimately leading to a loss of livelihoods. U Kyaw Soe, the Chairman of the Community Forest User Group from Mya Yar Gone Village, lamented the decline in fish and crab catches due to the rapid disappearance of mangrove forests in their vicinity. Furthermore, the loss of environmental stability provided by the mangroves will heighten the vulnerability of local communities to climate change and natural disasters.

Rakhine State encounters various natural calamities annually, and the coastal communities bear the brunt of disasters like cyclones and floods. The coastal communities suffer greatly from recurrent natural hazards, and although mangroves act as a natural defense against heavy monsoon rains, the mangroves in Rakhine State are deteriorating at alarming rates. From 2000 to 2015, the overall mangrove coverage in the state decreased by 23%.¹

Tanintharyi had a relatively low mangrove cover loss compared to other regions in Myanmar, with only 3.2 percent being deforested over a span of 25 years. However, this overall statistic masks the significant variations in losses and gains at specific sites within the study area. In Myeik district, for instance, 210 km² of mangrove were lost, but there was also a gain of 132 km². On the other hand, Dawei and Kawthung experienced minimal net loss of mangroves due to extensive regeneration. Understanding this historical mangrove baseline is crucial for promoting environmentally-conscious development in Myanmar's southernmost state.²

3. Principles of Mangrove Conservation

The Mangrove Principles are underpinned by sustainable development principles; namely securing economic development, social equity and justice, and environmental protection, and have been developed to reflect some of the globally recognized barriers to effective conservation of mangrove ecosystems. The principles presented are categorized in major fields of action towards Sustainable Mangrove Ecosystem Management: I. Promote good governance, II. Ensure a strong and just society, III. Use sound science and knowledge, IV. Achieve a socially sustainable economy within environmental limits and V. Ensure sustainable conservation financing.³

With regard to the types of conservation which may be employed, mangrove conservation is achieved through two types of approaches, in situ and ex situ. In situ conservation enables evolutionary and ecological processes to take place and promotes the genetic variability and adaptability of species to changing environmental conditions. In addition, ex situ conservation serves as a source of materials for research and ecosystem restoration. However, ex situ conservation disrupts evolutionary and ecological processes and limits the genetic variability and adaptability of species to changing environmental conditions. In addition, the costs, risks and research needs of ex situ conservation are significantly higher than in situ conservation.

¹ ACTED, Myanmar: ACTED supports mangrove conservation in Rakhine State, June 2017.

² Leon Y.F Gaw, Matthew Linkie, Daniel A. Friess, Mangrove forest dynamics in Tanintharyi, Myanmar from 1989–2014, and the role of future economic and political developments, *Singapore Journal of Tropical Geography*, Volume 39, Inssue 2, February 2018, pp- 224-243.

³ IUCN, WWF, Wetlands International, Mangrove Principles, guiding principles on sustainable mangrove ecosystem management, *Save our Mangroves Now*, September, 2021.

It has also been noticed that in an effort to conform to the principle of mangrove conservation, Myanmar have enacted laws for both in situ and ex situ conservation in accordance with international principles and guidelines. However the implementation of their international obligations on conservation varies depending on political commitment, the availability of institutions, technology, human capacity, effective planning and the financial resources of the States.

4. Legislative Frameworks of Mangrove Conservation

A variety of legal instruments are necessary to tackle the various threats to the preservation of mangroves across different sectors and locations. Diverse legal mechanisms can be employed to combat issues such as the diversion of freshwater sources, pollution, and the conversion of mangroves for aquaculture or farming, among other threats. To fully comprehend the scope of options and requirements for mangrove conservation, it is essential to analyze numerous sectors and areas of law, encompassing forest, marine, fisheries, land use, biodiversity, protected areas, climate change, industry, and freshwater, among others.¹

National and global policies and legal structures are necessary to offer comprehensive direction for the preservation and responsible utilization of mangrove resources, as well as to guarantee the safeguarding of biodiversity associated with mangroves. In order to accomplish this, policies and laws must encourage the sustainable management of mangrove ecosystems while also tackling the factors that pose a threat to their loss and degradation.

The sovereign rights and jurisdiction of States regarding the natural resources is also addressed by Article 3 of the United Nations Convention on Biological Diversity, 1992 which provides that “States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.”

In Section 37 of the Constitution of the Republic of the Union of Myanmar, 2008 states that “the Union is the ultimate owner of all lands and all natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union, and the Union shall protect and conserve the natural environment and the government shall enact necessary law to supervise extraction and utilization of State owned natural resources by economic forces.”

The Article 3 (1) of the Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, 1971 states that “the contracting parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the list, and as far as possible the wise use of wetlands in their territory.” The Convention also defines “the wise use of wetlands as the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development. Wise use thus be seen as the conservation and sustainable use of wetlands and all the services they provide, for the benefit of people and nature.”

¹ IUCN, Legal Frameworks for Mangrove Governance, Conservation and Use, Assessment Summary, 2018, Pg-13.

According to the National Wetland Policy and Strategic Actions, 2017, (Third Draft) classified six wetland regions in Myanmar. These wetland regions include a diverse array of coastal ecosystems - coral reefs, seagrass beds, mud and sand flats, mangroves, bays, estuaries and sandy and rocky shores.

Six wetland policy imperatives were adopted that focused on protection, wise use, mainstreaming wetlands values in development plans, public participation, raising awareness, collaborating international and regional wetlands programme.¹ According to the Fourth Ramsar Strategic Plan, 2016-2024, the wise use of wetlands is strengthened through integrated resource management at the appropriate scale, inter alia, within a river basin or along a coastal zone.²

In Article 3(4) of the United Nations Framework Convention on Climate Change, 1992 provides that the parties of this Convention have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.

According to the Forest Law, 2018 provides that The Ministry of Natural Resources and Environmental Conservation of the Union Government may, with the comment of the Nay Pyi Taw Council, State or Regional Cabinet, and with the approval of the Union Cabinet, declare as protected public forest, specifying limits on land at the disposal of the Government, outside reserved forests for the purposes of conservation of mangrove forests.³

Following Cyclone Nargis which made global headlines when it struck Myanmar's coastal areas in the Ayeyarwady Delta in May 2008, killing 84,500 people according to official figures, though other estimates placed the death toll much higher,⁴ the Natural Disaster Management Law was enacted in 2013. According to Section 16(c) of this Law "preventive measures to be carried out in the area likely to be struck by a natural disaster before the natural disaster occurs include preservation of mangroves along the coast and planting fast-growing trees."

Also, the Myanmar Action Plan on Disaster Risk Reduction, 2017 has four pillars and each pillar has six to nine priority actions. The four pillars are aligned with four priority actions of the Sendai Framework for Disaster Risk Reduction. These are Pillar 1: Assessing disaster risk including extreme weather events and creating public awareness on DRR in Myanmar, Pillar 2: Strengthening disaster risk governance to reduce and manage risk, Pillar 3: Mainstreaming disaster risk reduction for resilient development, Pillar 4: Enhancing disaster preparedness for effective response and resilient rehabilitation and reconstruction.⁵ The implementation of the Natural Disaster Management Law and the Action Plan would enhance Myanmar's ability to protect and preserve her coastal areas.

¹ National Wetland Policy and Strategic Actions (Third Draft), the Republic of the Union of Myanmar, May 2017.

² The Fourth Ramsar Strategic Plan, 2016-2024, Sub-series I; Handbooks 2, International Cooperation of Wetlands, 5th Edition, 2016.

³ Section 5(c), Forest Law, 2018.

⁴ 7CFE-DM, Center for Excellent in Disaster Management & Humanitarian Assistance, Myanmar Disaster Management Reference Handbook | March 2020, pg-27.

⁵ Myanmar Action Plan on Disaster Risk Reduction, 2017, pp-27-29.

The Myanmar Climate Change Policy (MCCP), 2019 are guiding tools in terms of addressing climate change impacts on both natural and human. MCCP highlights six guiding principles: Sustainable development, Precaution, Prevention, Environment integrity, Shared responsibility and cooperation, and Inclusiveness while MCCP considers Sustainable management of natural resources for healthy eco-systems in six key sectors.¹

The mangrove ecosystem has ability to reduce seawater intrusion because mangrove can eliminate the effect of salinity, pH, pyrites and anaerobe conditions. The mangrove ecosystem also has salt-excreting gland, salt accumulating gland and salt-excluder gland, specific root, root activity, salinity absorption, salinity accumulation, specific growth and another metabolism to reduce impact of seawater in mangrove metabolism. Therefore, the degradation and deforestation of mangrove ecosystem causing reduction of the mangrove function to reduce seawater intrusion.²

Experts Expressed concern about the current rate of pumping, especially in Yangon, because of its rapid growth, and in the delta area, where there is a danger of saltwater intrusion into freshwater sources. The 1930 Burma Underground Water Act is the current legal provision governing this issue, but it is not applied properly and requires many amendments to reflect the current situation.³

Coastal erosion and flooding are factors that can indirectly damage mangrove forests. Degradation of mangrove forests often leads to habitat fragmentation, having serious consequences for ecosystem functioning and the capacity of mangrove to provide ecosystem services, such as preventing freshwater diversion, shoreline erosion and facilitating shoreline protection.⁴ In that case, in the Conservation of Water Resources and Rivers Law, 2006 provides that no person shall carry out sand suction, sand dredging, sand excavating, river shingle suction, panning for gold, gold mineral dredging or resource production for commercial purpose in the river-creek boundary, bank boundary and waterfront boundary without the recommendation of the Directorate.⁵

The government is underestimating the importance of the forestry sector, Myanmar may be underinvesting in sustainable forest management. To save the remaining mangroves, the Myanmar government issued a logging ban in 2014. Despite that, illegal logging persists. The strict enforcement of the Law is required to deter would be perpetrators from committing such illegal acts.

For the mangrove conservation, nature-based solutions play a crucial role in facilitating the recovery and adaptation of ecosystems to seasonal climate change and land-use changes. These solutions serve as a regulatory mechanism to effectively respond to the consequences caused by environmental degradation. In the context of mangroves, nature-based solutions can be employed to safeguard islands and coastal communities from wind storms and floods, as well as mitigate the impacts of sea level rise. One such solution involves the planting of windbreak trees,

¹ San Win, Sirintornthep TOWPRAYOON, Amnat CHIDTHISONG, Mangrove status, its ecosystem, and climate change in Myanmar: A study in Ayeyarwaddy Delta Coastal Zone, IOP Conf. Series: Earth and Environmental Science 496, IFSFA, 2020.

² Endang Hilmi, Cecep Kusmana, Endang Suhendang and Iskandar, Correlation Analysis Between Seawater intrusion and Mangrove Greenbelt, Indonesian Journal of Forestry Research Vol. 4, No. 2, October 2017.

³ www.myanmarwaterportal.com.

⁴ Daniel M. Alogi, Habitat Destruction and Degradation, Tropical Marine Ecology, 2021.

⁵ Section 13, Conservation of Water Resources and Rivers Law, 2006.

which act as natural walls, thereby reducing the risks of flooding. Additionally, these solutions contribute to ensuring food and energy security, while also combating climate change and preserving biodiversity through tree planting initiatives.¹

Protected Areas are one of the most important parts for biodiversity safeguarding ecosystems services and preserving cultural landscapes. All CBD activities are accordingly, carried out within the fundamental paradigm of the ecosystem approach. The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.²

With an ever-increasing pressure on the remaining mangroves, there is an urgent need to safeguard the remaining mangrove forests of Myanmar. However, only a small fraction of the mangroves in Myanmar are currently protected inside the Meinmahla Kyun Reserve and in the Lampi Marine National Park covering a total of 3% of Myanmar's overall mangrove stands. A priority task should be to expand the existing protected area network in Myanmar. Strengthening the legislative framework applicable to protected area management will enhance law enforcement as well as providing incentives for restoration of degraded mangrove areas.³

Ideally, land use management can achieve win-win solutions that satisfy human needs while maintaining ecological function. Although ideal, win-win opportunities are not possible in all situations. Nonlinear relationships between ecological responses and land area under protection make it possible to identify small loss-big gain opportunities, in which ecological functioning of the protected area might be maintained with minimum negative consequences for human land use.⁴

The Forestry Department's rehabilitation programs have made significant improvements to certain areas of the mangroves in the Ayeyarwady Delta. These programs include reforestation and the protection of natural mangroves in both the Ayeyarwady and Tanintharyi regions. In order to address the ongoing loss of mangrove habitats and involve local communities, it is crucial to coordinate these commendable efforts with the establishment of a combination of UNESCO Biosphere Reserves and Ramsar Wetlands these Golf Mottama, Meinmahla Kyun and Myeik Archipelago. This will greatly contribute to the conservation and restoration of mangroves, ensuring the continuous provision of essential ecosystem services by intertidal ecosystems.⁵

Accordingly, to the Convention on Biological Diversity, states that "A contracting party shall subject to its national legislation, respect, preserve and maintain knowledge, innovations

¹ Thit Taw Maung, The role of nature-based solutions in disaster prevention and mitigation, Myanmar Digital News, Oct 7, 2022.

² Michael Bowman, Peter Davies, Catherine Redgwell, Lyster's International Wildlife Law, Cambridge University Press, 2nd Edition, 2012, pp-603,604.

³ Christoph Zockler and Cherry Aung, The Mangrove of Myanmar, B. Gul et al.(eds), Sabkha Ecosystems, Tasks for Vegetation Science VI, August 2019, Pg-265.

⁴ Ruth Defries, Andrew Hansen, B.L. Turner, Robin Reid, Jianguo Liu, Land Use Change Around Protected Areas: Management to Balance Human Needs and Ecological Function, Ecological Application, Volume 17, No.4, 2007, pp-1031-1038.

⁵ Christoph Zockler and Cherry Aung, The Mangrove of Myanmar, B. Gul et al.(eds), Sabkha Ecosystems, Tasks for Vegetation Science VI, August 2019, Pg-265.

and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.”¹

Recognizing that local traditional practices with regard to mangrove can be a benefit to mangrove conservation, the Conservation of Biodiversity and Protected Areas Law, 2018 states that “The Minister of the Ministry of Natural Resources and Environmental Conservation of the Union Government may allow the community participatory protected area management which favours harmonization of sustainable socio-economic development of local communities and sustainability of biodiversity conservation.”²

In Section 7(d) of the Forest Law, 2018 provides that the Ministry, with the comment of the Nay Pyi Taw Council, State or Regional Cabinet, and with the approval of the Union Cabinet may recognize the natural forest and mangrove conserved traditionally by the local people.

The community-based conservation that places decision-making power with lower-level authorities and involves local stakeholders in conservation management, is thought to increase support for conservation through greater sensitivity to local conditions and perceptions.

In fact, Community Forests (CF) are forests that belong to the local community, and residents have the right to apply for forest plantations. Once permission is granted, the residents are allowed to maintain the forest belts and cultivate the plantations, thereby enabling them to sustain their livelihoods through the utilization of forest products. By allowing the establishment of community-owned forests, external individuals will be restricted from accessing them, ensuring that the rights of the local people are protected. This, in turn, will create more employment opportunities for the residents.

According to Section 23(g) of the Community Forest Instructions, 2019 provides that the CFUG or the CFUG members shall have the rights to harvest and utilize wood and other forest products systematically from natural forest in accordance with the MP without negatively impacting the original objective to sustain the CF in accordance with the existing laws, rules and procedures. Forest Department is supporting and supervising in implementing the community forestry.³

The community forestry, as a practice, utilizes a participatory approach in forest management, engaging communities and stakeholders in the governance and sustainable management of forest resources. In this approach, communities may have ownership of the forests or receive authorization from the government to utilize forest products for economic purposes or personal consumption.

5. Management of Mangrove Conservation in Ayeyarwady Delta

Sustainable mangrove restoration on a national scale is possible with a comprehensive step-by-step approach. The first period with research has generated scientific knowledge on vital national and local issues. It has identified the need for permanent mangrove parks as a necessary follow up towards national restoration.

¹ Article 8(j), the Convention on Biological Diversity, 1992.

² Section 13 (e), the Conservation of Biodiversity and Protected Areas Law, the Republic of the Union of Myanmar, 2018.

³ Section 9(h), The Forest Law, 2018.

In fact, the establishment of the first mangrove gene bank by the Marine Research Centre of Patheingyi University in partnership with Worldview Myanmar, aims to safeguard and conduct research on these species. Currently, the gene bank is fully operational and under the management of Patheingyi University.

The classification of diversity in mangrove systems includes regional diversity, ecosystem diversity, species diversity, and genetic diversity. Mangrove species from various coastal regions in Myanmar have been cultivated in the nursery and then relocated to the gene bank area at Shwe Thawng Yan. This initiative was carried out as part of the Thor Heyerdahl Climate Park, situated in Shwe Thawng Yan, Ayeyarwady Region, Myanmar.

It is from the park, functioning as resource centers in cooperation with local, regional and national institutions, a full scale effort can be successfully completed. Patheingyi University is a leading academic institution in the coastal west, recently approved as a university of excellence. Academic's ongoing research project has provided capacity building and necessary skills to students and academic staff. This has led to the contribution of 1,800 acres from the regional governments for mangrove restoration and adaptation to climate change. A successful implementation of mangrove restoration in vulnerable coastal areas will save human lives and create new opportunities for the poorest of the poor. This will yield climate change protection as a catalyst for sustainable social and economic development.¹

By the end of 2022, a total of 53 species have been recorded in the gene bank and its surrounding area. Notably, the Gene Bank has successfully propagated three species from The IUCN Red List. Over the past three years, more than 20,000 *B. hainesii* have been planted, while the researchers have diligently cared for thousands of naturally growing palms in the Shwe Thawng Yan region. The preservation of endangered species holds great significance for the Gene Bank, which also serves as a home to a majority of the world's authentic mangrove species and their associates for scientific research purposes. Additionally, the gene bank is actively studying the potential use of mangrove fruits and edible ferns to ensure food security.²

Mangrove forests and their ecosystems have made significant contributions to the environment, communities, and economies. For decades, these forests have become popular tourist attractions, and the demand for nature-based tourism in mangrove forests is increasing worldwide. However, it is important to be cautious of unsustainable tourism practices that can lead to negative consequences such as forest loss, depletion of natural resources, and increased pollution in and around mangrove forests. By maintaining a balance between economic activities and the preservation, conservation, and restoration of mangrove forests, can achieve sustainable tourism development.³

This being so, the Ministry of Natural Resources and Environmental Conservation of Myanmar and the Ministry of Hotels and Tourism which are lead focal ministries support the Ecotourism Policy and Management Strategy. The 2018 Myanmar Tourism Law includes as an objective the promotion of responsible tourism activities that will contribute to ecotourism and conservation of the natural environment. Under the Myanmar Tourism Law, 2018 provides that

¹ www.wif.foundation.

² [Ibid.](#)

³ Yurina Ahmad & Mohd Nazip Suratman, The Roles of Mangroves in Sustainable Tourism, Mangrove Ecology, Biodiversity and Management, 2 October 2021.

“any person who operates a tourism business has the responsibility to respect Myanmar cultural heritage, customs and traditions, and conserve the natural environment.”¹

In Section 13 (e), (f) of the Conservation of Biodiversity and Protected Areas Law, the Republic of the Union of Myanmar, 2018 provides “the Director General of the Ministry of Natural Resources and Environmental Conservation of the Union Government may determine a plan to collect entrance fees or other fees related to tourism in protected areas and determine a payment system for ecosystem services derived from the ecosystems within protected areas with the approval of the Ministry.”

The Meinmahla Kyun Wildlife Sanctuary, situated in the southern part of the Irrawaddy Delta, was established in 1994 and spans an area of 33,776 acres. This sanctuary holds great significance as a protected area in Myanmar and was recognized as an ASEAN World Heritage Park in 2003. Located in Bogalay Township, it is an island within the Ayeyarwaddy Delta region. The sanctuary is predominantly covered by mangrove forests, which form a vital part of its forest type and ecosystem. In recognition of its ecological importance, it was designated as a Ramsar Site in 2017. Visitors to this sanctuary have the opportunity to immerse themselves in the natural habitat of various endangered species, including crocodiles, turtles, waterbirds, fishes, and migratory birds.²

Conclusion and Recommendations

This research has also brought the realization that the political, financial and socio-cultural sectors of country play a crucial role in the field of sustainable development of mangrove conservation. Myanmar's Wetland Policy (third draft) includes important elements for wetland preservation as these elements are defined as: wise use, protection, public participation and awareness raising. Although Myanmar authorities have the intention to formulate programmes and action plans for wetland management, they have not as yet done so. Thus, if such programmes and action plans are properly implemented, Myanmar should be able to effectively preserve her wetlands. The implementation of the Natural Disaster Management Law and the Action Plan would enhance Myanmar's ability to protect and preserve her coastal areas. Myanmar has enacted the Conservation of Water Resources and Rivers Law but implementation and enforcement actions are weak which has led to pollution being a problem in most of Myanmar's rivers. A Law for the conservation of Myanmar's underground water resources has been drafted and is hoped to be enacted in the near future. The provision relating to the budget for the conservation of wildlife in the Conservation of Biodiversity and Protected Areas Law, 2018 is needed. In Myanmar, there are designated mangrove protected ecotourism sites. The collection of entrance fees and other fees from these sites may be contributed towards expenses for these sites, according to the Conservation of Biodiversity and Protected Areas Law, 2018. The positive influence of community forestry on mangrove conservation has been demonstrated through strong national backing. The sustainable management of forests under this model can lead to beneficial outcomes for community well-being. Measures to ensure cooperation between the government departments in order to be able to coordinate the performance of their duties is needed for the proper implementation of the law. It is important to work with local communities

¹ Section 14(b), the Myanmar Tourism Law, 2018.

² www.tourism.gov.mm.

to raise awareness of biodiversity issues. Local authorities and residents in coastal areas are urged to work together to protect the environment to prevent damage to mangrove forests.

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