

# Make Room For Mangroves in Myanmar!



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## What are Mangroves?

Mangroves are wetlands located along tropical and subtropical shores.<sup>5</sup> They play a major role in estuarine ecosystems and provide nursery habitats for many aquatic species.<sup>5</sup>



Pictured: Subtropical Mangrove. Image taken from Canva

## Executive Summary

- **Myanmar is a Mangrove deforestation hotspot** with 60% of its mangroves already decimated mostly due to agriculture, aquaculture and resource extraction.<sup>3,4,6</sup>
- **Mangroves are one of the most productive and important ecosystems** in the world but only make up 0.7% of the world's tropical area.<sup>4</sup> They are also vital nurseries and important areas for carbon sequestration.<sup>4</sup>
- **Myanmar's population depends on mangroves daily.**<sup>1</sup>
- **Filling the data gap on mangroves, restoration and active enforcement of law is needed** to prevent further loss of mangrove ecosystems.<sup>2,3,4,6</sup>

## IMPORTANCE

### OF MYANMAR'S MANGROVES

#### ENVIRONMENTAL

- **Mangroves play a large ecological role** and house lots of biodiversity in its ecosystem, including endemic species.<sup>1,5</sup>
- **They provide nursery habitats for juvenile fish and invertebrates** in tall thick root systems and sediment.<sup>3</sup>
  - Myanmar's prized White Banana Shrimp (*Penaeus merguensis*) is dependent on mangroves for parts of its lifecycle.<sup>1</sup>
- **Mangrove trees can sequester carbon** in their root systems and the sediment around its habitat.<sup>5</sup>
- **The forest can help deaden waves and buffer strong winds** for coastal communities.<sup>4</sup>



#### SOCIO-ECONOMIC

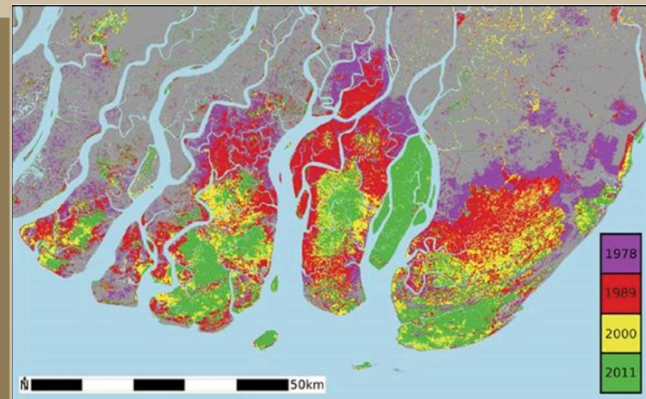
- **43% of household income in the Ayeyarwaddy Region** is dependent on selling mangrove forest resources.<sup>1</sup>
- **Vegetation in mangroves are used for folk medicine** such as rhizophora seedlings for mouth sores, in coastal communities.<sup>1</sup>
- **Mangrove trees have economic value associated with protecting coastal community** during storm surges.<sup>2</sup>
- **Mangroves contribute many resources** such as food, medicine, fish and timber that are crucial for Myanmar's economy.<sup>1</sup>
- **Mangrove ecosystem services are worth USD\$35-57,000 per hectare.**<sup>1,2</sup>

"...Over 70% of [Myanmar's] population depends on the [mangroves] natural resources for daily needs."

# MAJOR THREATS TO MYANMAR'S MANGROVES

Over 58% of mangroves have been over-exploited in Myanmar due to conversion of land for agriculture, aquaculture and resource extraction.<sup>1,3,4</sup>

- **Agricultural conversions:** Rice paddy cultivation, palm oil, rubber farms and livestock raising have expanded into mangroves for the growing population.<sup>1,3,4</sup>
- **Aquaculture conversion:** Many mangrove ecosystems have been further degraded for fishponds or shrimp ponds.<sup>1</sup>
- **Resource extraction:** firewood, charcoal, timber, salt production and rubber for industrial and livelihood use has also lead to the degradation.<sup>1</sup> The most rapid mangrove decline has been observed in Ayeyarwaddy due to higher and denser populations coupled with easier access to the forests.<sup>4,6</sup>



Changes in Mangrove forest between 1978-2011 in Ayeyarwady Delta Region, Myanmar (Image taken from Zockler, 2019).

**"...Illegal encroachment converted 40% of Wunbaik Reserved Mangrove Forest in Rakhine State into shrimp farms and rice paddies..."**

VEETIL ET AL., 2018

## Problems

**1. Not enough data or monitoring** on Myanmar's mangroves.<sup>2,3,4</sup>

**2. Lack of restorative efforts by the government.**

- Only 12% of the proposed 919,000ha of mangroves have been restored since 2002.<sup>6</sup>

**3. Lack of enforcement in protected areas.**<sup>3</sup>

## Solutions

**Fill in the data gap.** Support scientists to continue monitoring, mapping and studying the economic value of Myanmar's mangroves to understand the importance of these ecosystems to the surrounding area and the economy.<sup>2,3,4</sup>

**A more focused community and government effort.**

One way to create community support and work towards a more sustainable society is by enlisting the moral support of monks toward mangrove restoration, as Myanmar is a majority Buddhist state.<sup>6</sup> This has proven to be effective in Thailand conservation efforts.<sup>6</sup>

- The government must focus efforts on implementing realistic, measurable goals toward reforestation and restoring mangroves.

**Stricter enforcement of law** to decrease deforestation in precious mangrove habitats.

- Implementing and strengthening policy framework as well as designing site-specific strategies can help mangroves remain intact and prevent further loss.<sup>3,6</sup>

## CONCLUSION

1. Mangroves are crucial to the economy, surrounding ecosystem and livelihood of many citizens.
2. The provided solutions can support the crucial restoration of mangroves which in turn can provide Myanmar with economic growth, increased biodiversity and sustainable resources.

### References

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