MANGROVE CONSERVATION

IN THE PHILIPPINES

Image from https://c1.staticflickr.com/2/1197/4597298332_05f531e909_b.jpg

Mangrove forests are commercially and ecologically important habitats which support local coastal communities through eco-tourism, food security, and the prevention of land erosion[1]. Their total coverage in the Philippines has been declining since the early 1900s and now encompasses just above half of the total mangrove area in 1918 (Fig 1). Degradation of mangrove forests have led to a rise in tsunami caused mortality in coastal communities as mangroves serve as a buffer zone between land and sea[3]. This policy brief looks into the advantages of protecting mangrove habitat and suggests actions towards the goal of conservation.

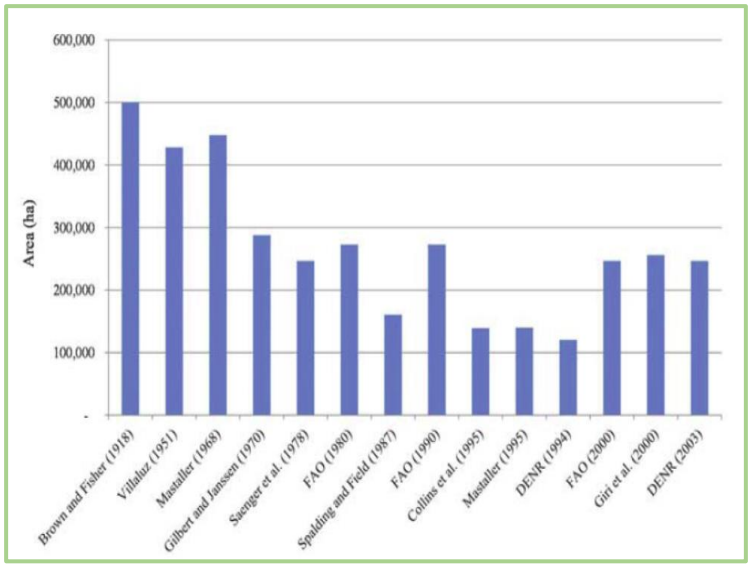

Figure 1 Decline of mangrove forest cover in the Philippines. Dates indicate year of estimate[2].

Key points:

- Expansion of mangrove protected areas to **500 000 hectares**
- Improve **planning** in community replanting projects
- Encourage **ecotourism** to boost mangrove derived revenue and environmental awareness

[1] Kathiresan & Bingham 2001
[2] Long & Chandra 2001
[3] Kathiresan & Rajendran 2005

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The Philippines is ranked among the world's most biodiverse countries and hosts an estimated 50% of total global mangrove species[4]. Decline of mangrove coverage has been correlated with the rise of aquaculture through conversion into brackish water pond area (Fig 2). These forests serve as natural protection from tropical storms and typhoons and protect coastal people[6]. An estimated 90% of deaths could have been prevented in 1999 India if the mangrove forest had still existed[7]. Currently, only 19% of the Philippines' mangroves are estimated to be behind protected areas[2].

Figure 2 Negative correlation between mangrove and brackish water pond areas from 1976 to 1990[5].

Benefits and advantages in mangrove protection are vast and integrated between sectors.

Mangroves

- Host part of the life cycle for **90% of all marine organisms**[8]
- Support **80% of global fish catches**[8]
- Act as buffer zones for coastal communities[3,6]
- Sequester **11% of carbon** from terrestrial inputs[9]

Successful mangrove protection requires community consultation, understanding the value of environmental protection, strong policies, and enforcement.

Recommendations for action:

- **Government action:** Expand protected areas from 140 000 hectares to 500 000 hectares through government policy and enforcement. This would boost coastal fish population through habitat provision, improving commercial value of fisheries through an increase in stock.
- **Rehabilitation Planning:** Improve replanting efforts through two key requirements:
    1. Replant at ideal sites of brackish ponds which were previously mangrove habitat. Although this can hurt aquaculture, there are immense environmental, cultural, and ecological benefits through community involvement and ecotourism.
    2. Replant using multiple species strands. This prevents single species dependence leading to population crashes and improves habitat stability.

    Replantation looks towards increasing mangrove habitat in the future and aids generational equality.
- **Ecotourism:** Expand mangrove protection in the Pagbilao Mangrove Experimental Forest of Quezon

    This encourages ecotourism, which provides additional income to local communities and boosts environmental ethics of local communities and visitors.

[4] Primavera et al. 2004
[5] Primavera 1997
[6] Sandilyan & Kathiresan 2015
[7] Das & Vincent 2009
[8] Sandilyan & Kathiresan 2012
[9] Jennerjahn & Ittekkot 2002

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