

Abstract

A Review on COVID-19 and Coastal Management [†]

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1. Introduction

COVID-19 pandemic highlighted the intricate relationships between human health, the social-ecological system, and coastal management in an era of climate and global change. The full effects of the pandemic on the coastal environment and its management around the world are still uncertain, which presents a significant challenge for coastal managers when trying to make decisions in the face of indeterminacy. Much scientific baseline data and information on the coastal environment related to the COVID-19 pandemic are urgently needed to articulate a coastal management plan in order to withstand disasters. This article critically reviews and summarizes the impact of the COVID-19 outbreak on coastal management (e.g., tourist beaches, fisheries, port and shipping, and other coastal activities) to help in finding how widespread pandemic impact has been and how many research studies are involved in managing the coastal environment.

2. Perspectives on Coastal Management and COVID-19

There are various points of view on the linkages between coastal management and COVID-19. Beyond the pandemic, the situation around the emergence and persistence of COVID-19 can emphasize some of the current environmental concerns in the coastal environment. For example, in Ecuador, COVID-19 has affected coastal activities with a loss of 540 million US\$ in 3 months for coastal tourism [1]. In addition, the recent study of [2] evaluated that beaches have much more transparent and cleaner waters during the COVID-19 pandemic. It was also further supported by [3], whereby more fish and large marine organisms (e.g., humpback whales, dolphins, and manta rays) are observed near the shore because leisure and fishing activities on the coast are prohibited. The coastal erosion can be reduced during pandemics because of forest regrowth followed by the demographic reduction [4]. On the contrary, ref. [5,6] found a significant change in the coastal water quality, increasing plastic (e.g., mask, gloves, bottles) contamination in coastal water zones during this pandemic. However, more baseline data and information are needed for future comprehensive coastal management initiatives. Through this study, we can realize that COVID-19 could bring an ideal opportunity to highlight how the planning and management of beaches have changed.

3. Potential Strategies for a Way Forward

COVID-19 outbreak's impact on coastal management should not be undermined. There is a need to concentrate on erecting effective response strategies and execution plans in order to recover quickly after disruptions and better respond to future unprecedented situations. A notable example of coastal strategies is strengthening and improving the



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regulatory framework or coastal policies, legislation, management, and planning for the sustainability of coastal tourists in order to ensure long-term viability on tourist beaches during the post-pandemic scenario. For instance, utilizing the beach space and hygiene by increasing the number of times that beach public areas are cleaned and disinfected to at least four per day, particularly on the busiest day. Also, keep a minimum of 2 m distance between non-family members in sunbathing, recreation, and bathing areas. In the meant time, financing a sustainable coastal economy is also considered useful in planning to restore and conserve the coast. Subsidies should be redirected to a more equitable and sustainable usage for coastal restoration and conservation, thereby promoting local small-scale fisheries and ecotourism prospects. The aforementioned suggestions should be implemented to articulate a better management plan for post COVID-19 pandemic.

4. Conclusions

Effects of the pandemic either short-term nor long-term on the coastal environment have been extensively discussed. Specifically, the findings emphasize the necessity for coastal planning and management to consider COVID-19 experiences when safeguarding the health value of coastal space. COVID-19 affects not only human well-being, but also the coastal environment. This review article shed light on ways to evolve towards better coastal management within the rapid emergence of coastal research about COVID-19.

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