2021 2030 United Nations Decade of Ocean Science for Sustainable Development

MARINE SPATIAL PLANNING

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Respondents Knowledge Integration in MSP of Moheshkhali Island: Planning for Sustainable Management

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Moheshkhali Island is the main island of Moheshkhali Upazila, in the Cox's Bazar District of Bangladesh. Moheshkhali is the only hilly island in Bangladesh.

> Cox’s Bazar is a popular destination for tourists who come to Bangladesh. But there is one jewel amongst the attractions of Cox’s Bazar, namely Moheshkhali Island.

Moheshkhali Island covers an area of approximately two hundred and sixty-eight square kilometers, and is blanketed in breathtaking mangrove jungles, spectacular ranges of hills and striking landscapes, and the island will provide an unforgettable journey through one of the most beautiful destinations in Bangladesh.

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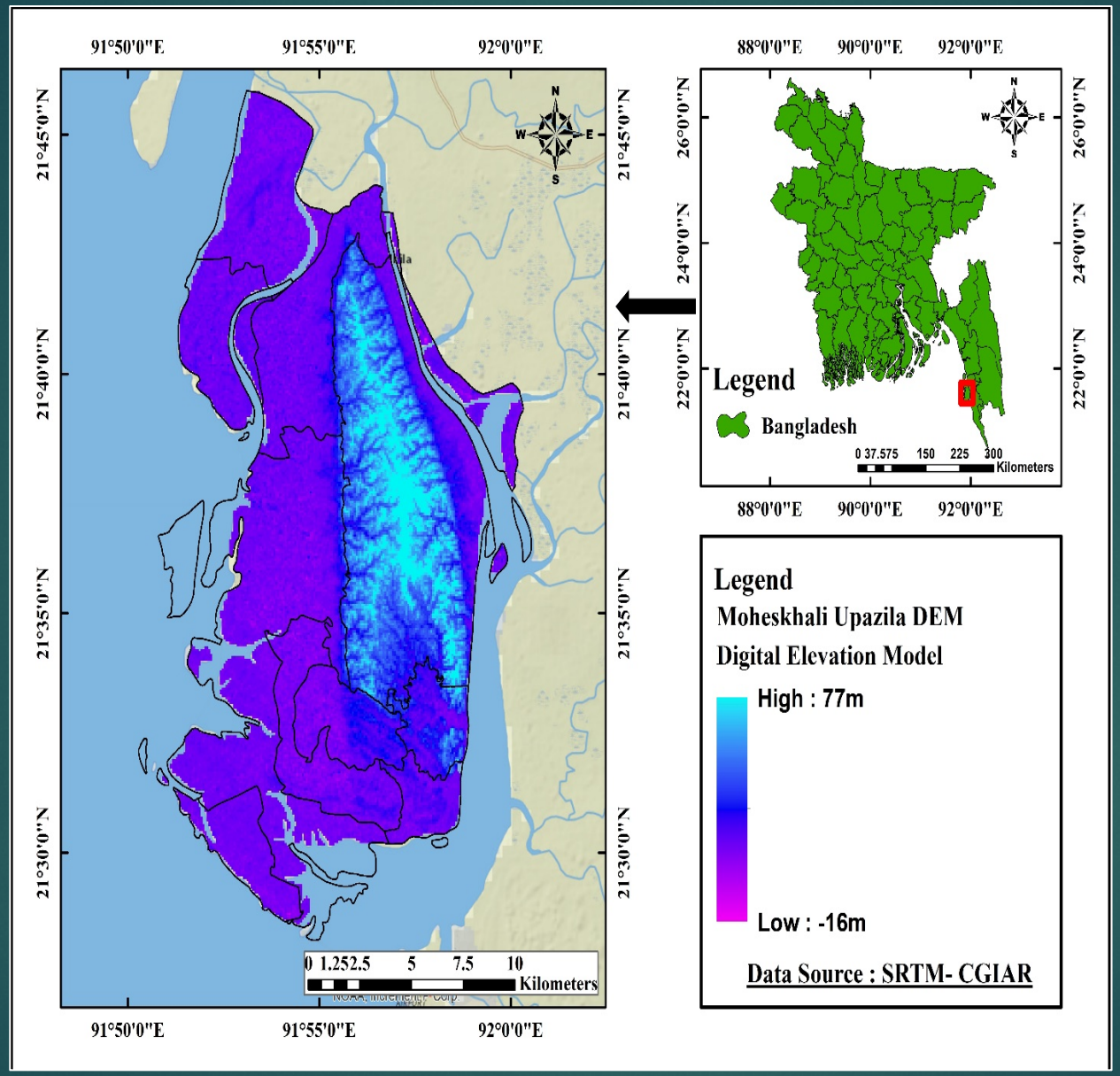

Figure 1 Digital elevation model of Moheshkhali Island

DEM

Digital elevation model is a remarkable database that shows the elevation data of certain terrain.

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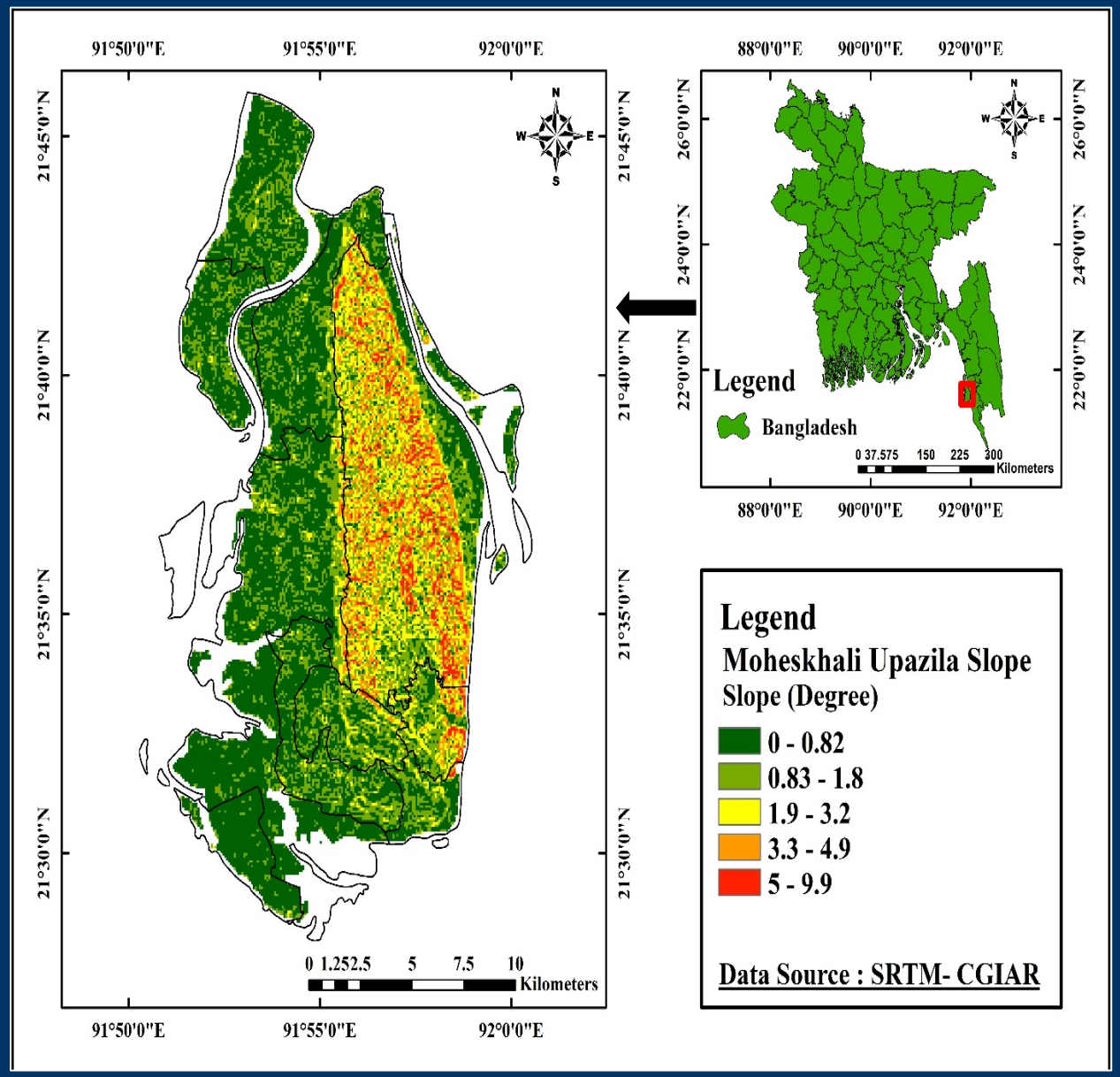

Figure 2 Slope Map of Moheshkhali Island

Slope Map

Slope map represents the topographic features of Moheshkhali Island.

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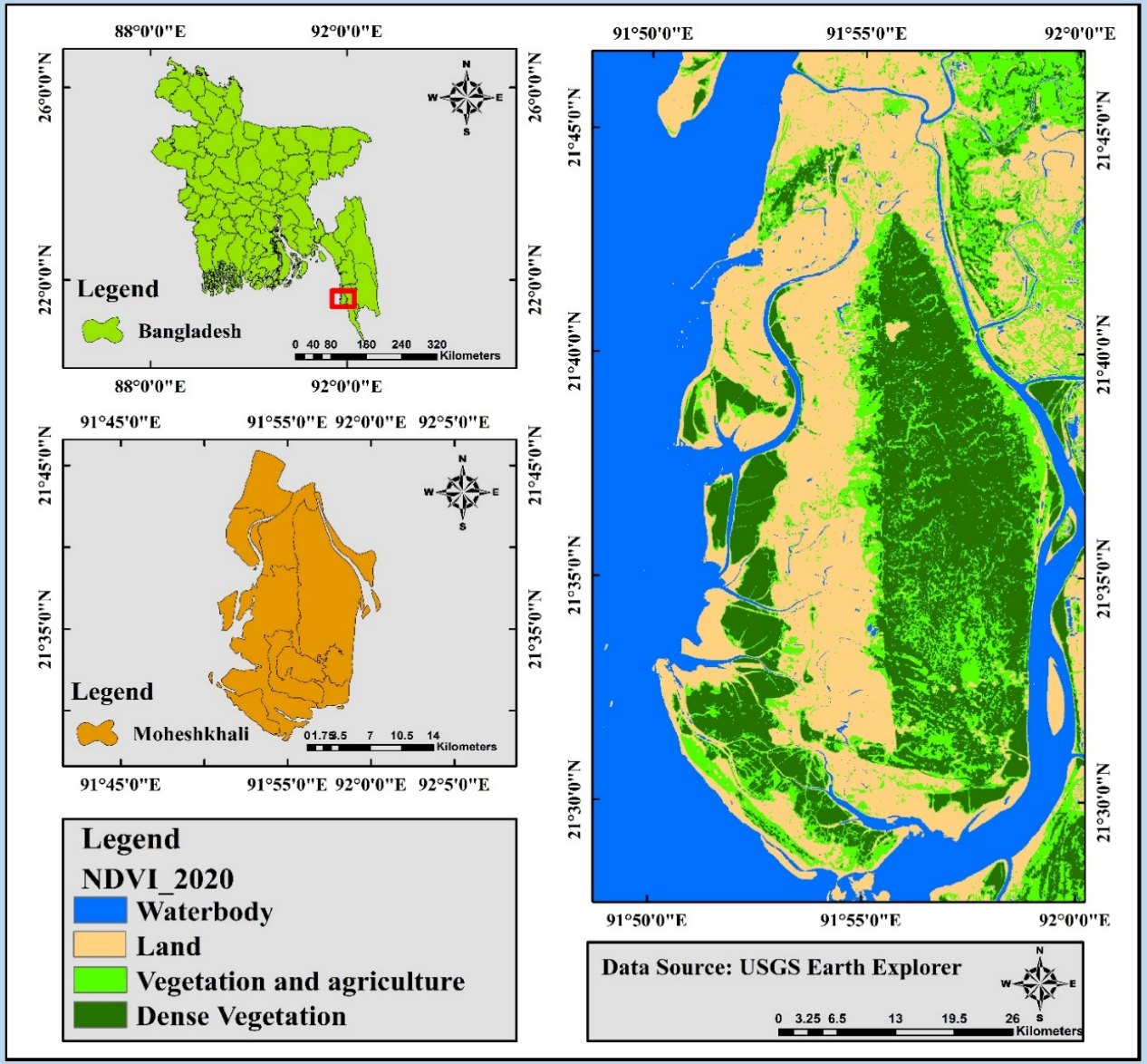

Figure 3 Normalized Difference Vegetation Index (NDVI) 2020 Map of Moheshkhali Island

NDVI

The normalized difference vegetation index is used to differentiate vegetation from other types of land cover and state biophysical properties. NDVI allows us to visualize and detect unexpected changes in vegetated areas. The normalized difference vegetation index (NDVI) is calculated from satellite images using the visible band and near-infrared band (NIR) reflected light by vegetation.

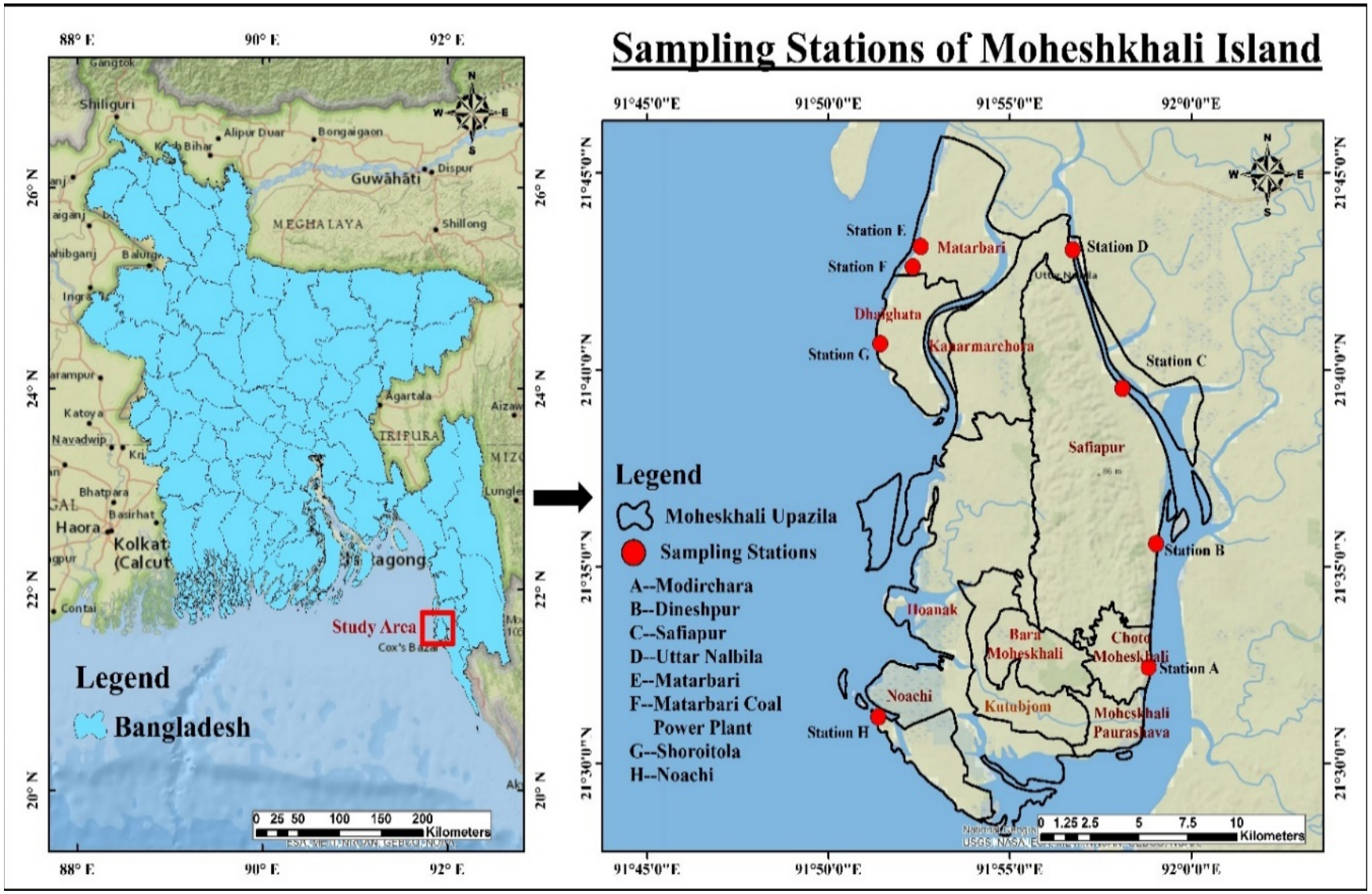

Figure 4 Sampling stations of Moheshkhali Island

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Planning of ocean areas is being developed worldwide to trigger sustainable ocean governance and management. Marine Spatial Planning (MSP) is a process that aims to organize the use of the ocean space, ocean resources, as well as the interactions among human uses, becoming increasingly used day by day in the sustainable ocean and coastal management. This research demonstrates how consistently respondent observations can be used to determine the reasons for MSP development and implementation. The research demonstrates how respondent provides valuable insight into MSP development, while fostering a supportive space for the stakeholders to contribute their own observations and participate in the planning process.

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The Moheshkhali coast and marine environment is characterized by a multiplicity of values and preferences including biological conservation, aesthetics, recreational fishing, Aboriginal culture and heritage, and nature based tourism. A Public Participation survey was used to collect spatially explicit information on stakeholder values and management preferences for Moheshkhali Island's.

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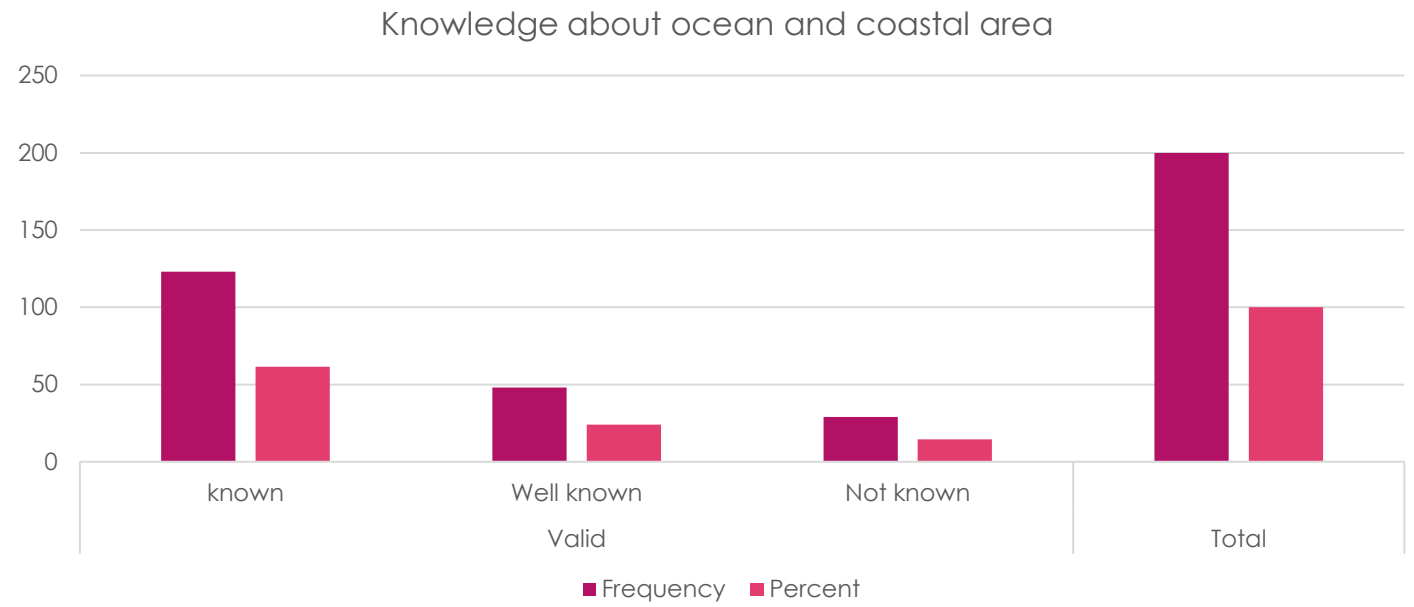
Results and Discussion



Graph 1 Response regarding the knowledge on the ocean and coastal area

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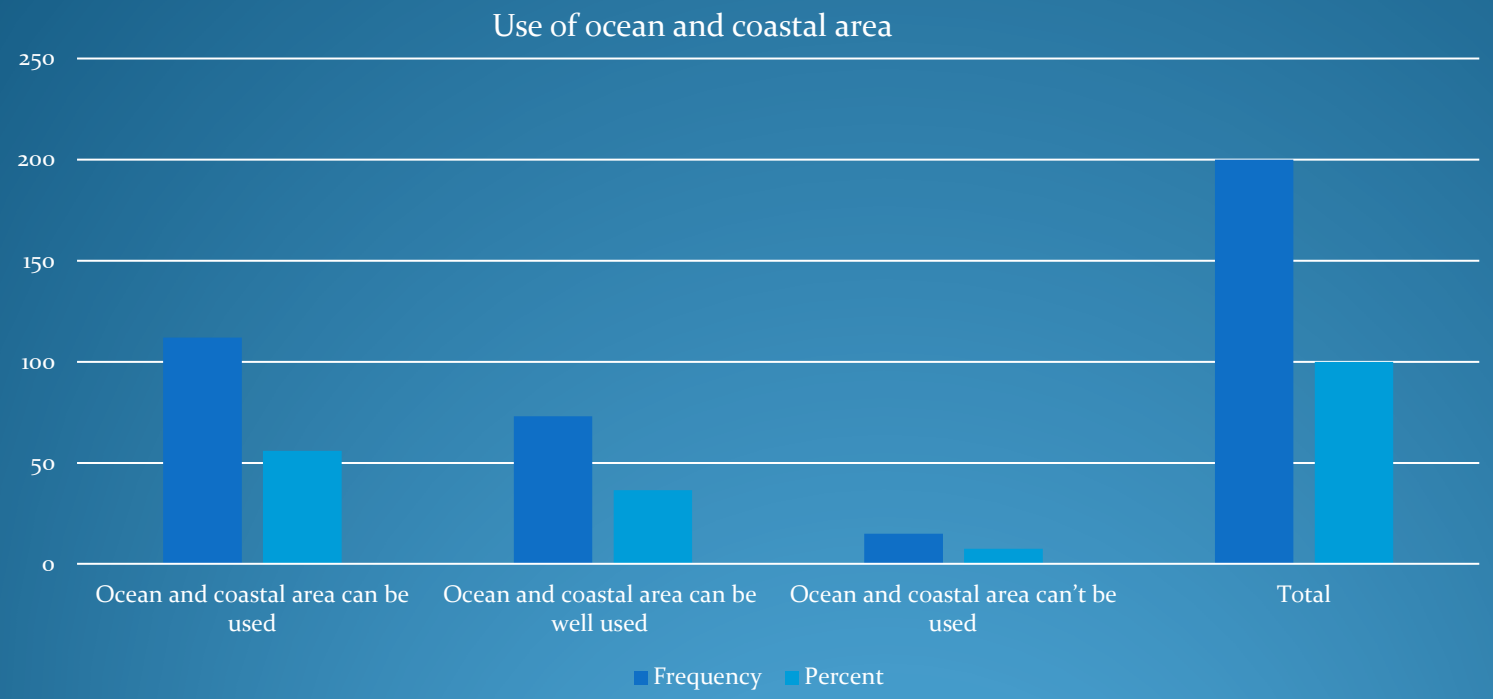

Graph 2 Response regarding the use of the ocean and coastal area

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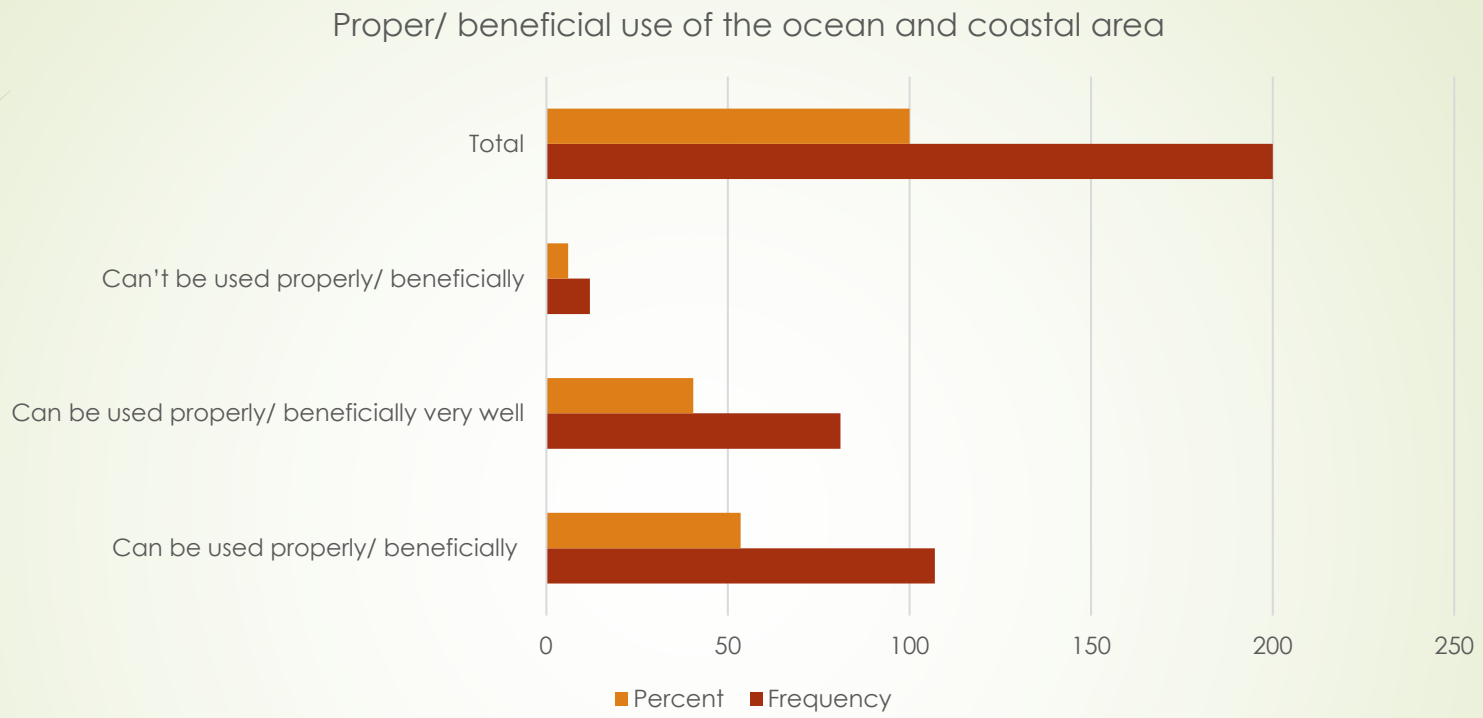

Graph 3 Response regarding the proper/ beneficial use of the ocean and coastal area

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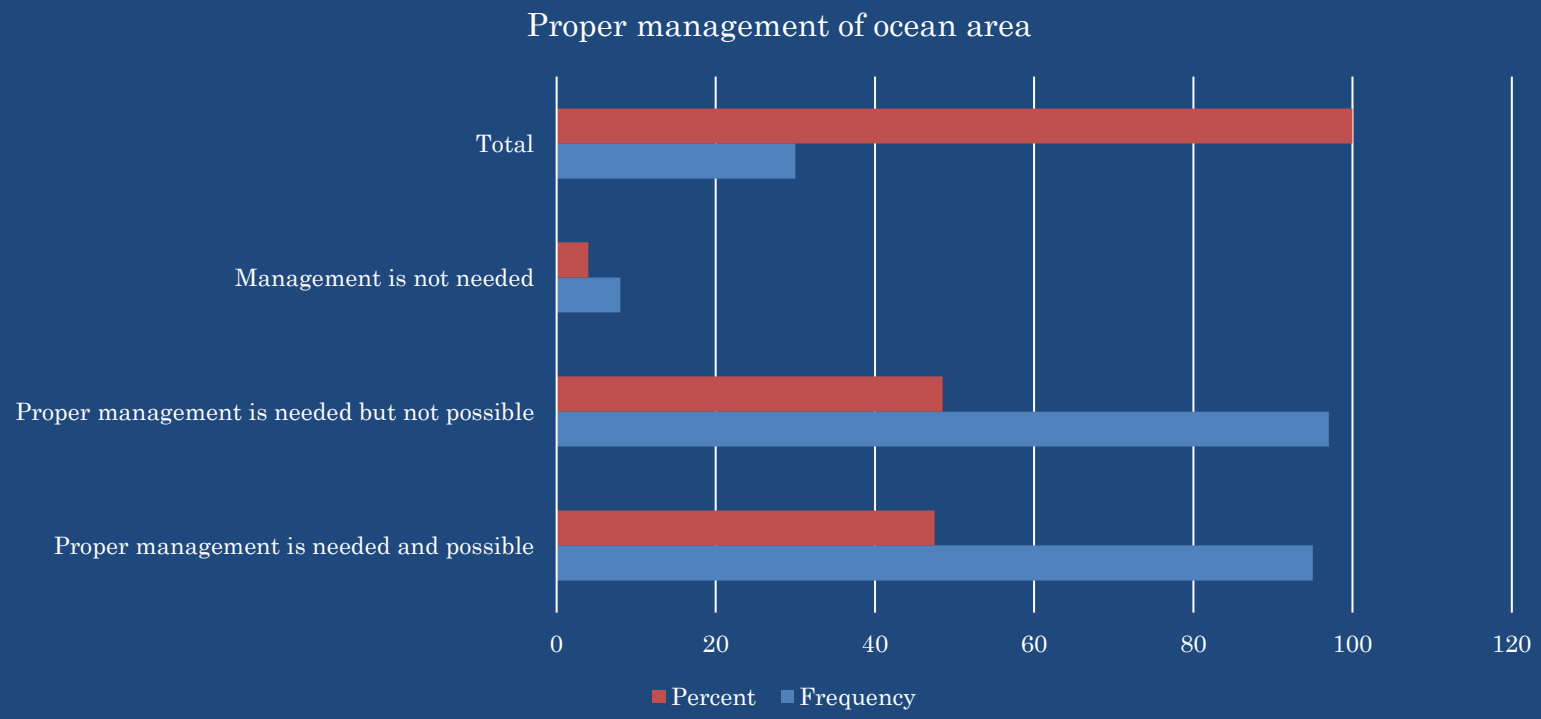

Graph 5 Response regarding the proper management of ocean area

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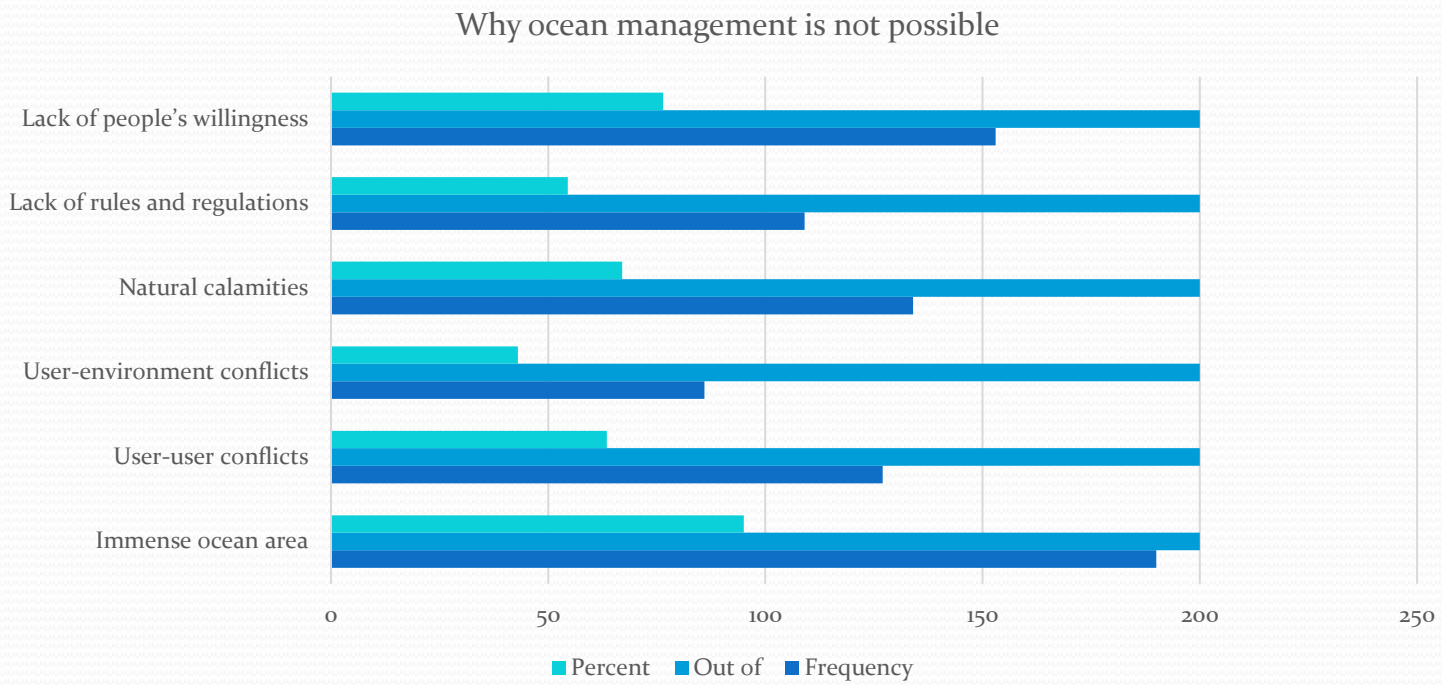

Graph 6 Response regarding ocean management (why not possible)

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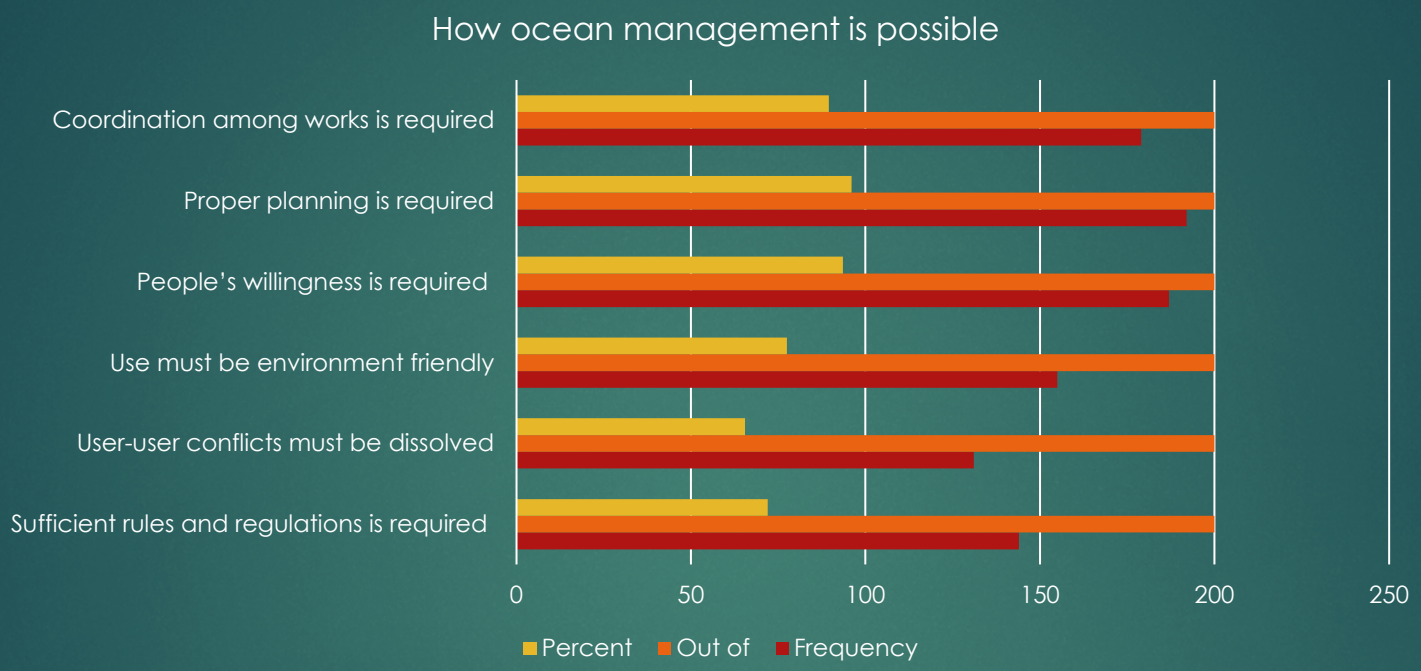

Graph 7 Response regarding ocean management (how it is possible)

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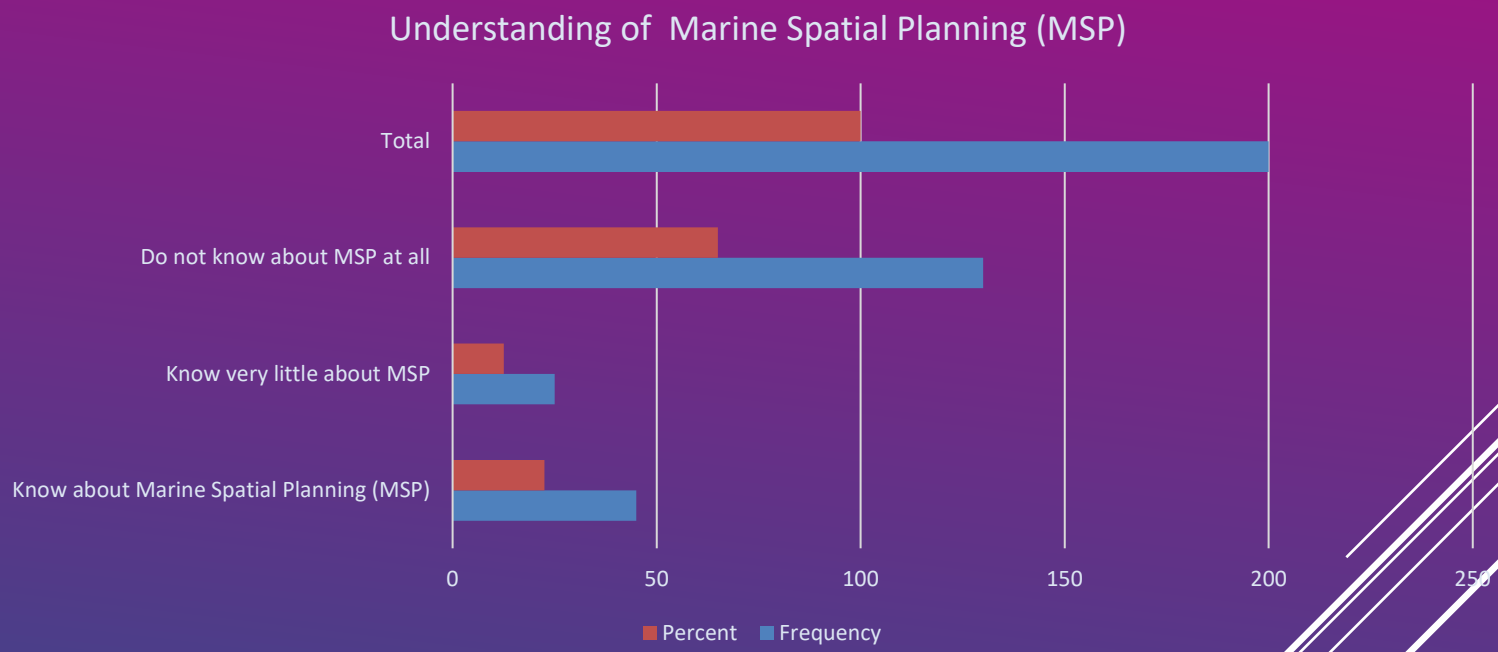

Graph 8 Response regarding MSP understanding

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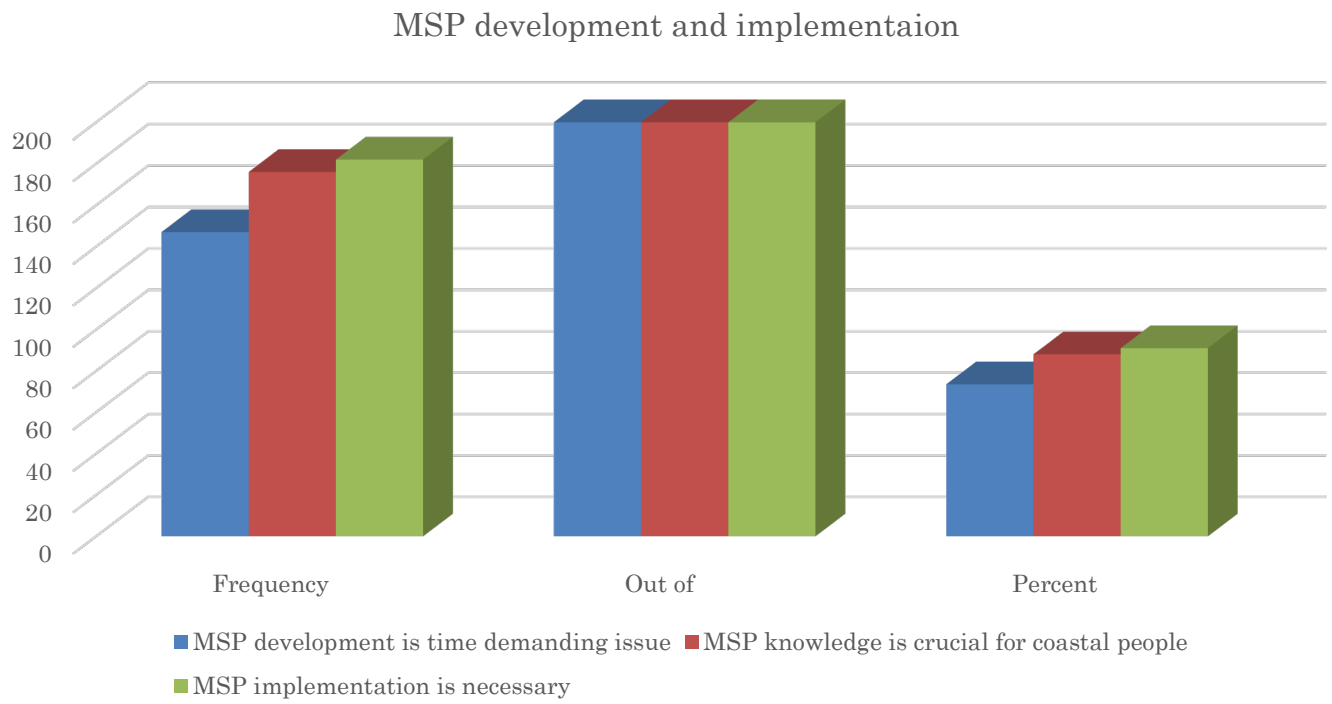

Graph 9 Response regarding the MSP development and implementation

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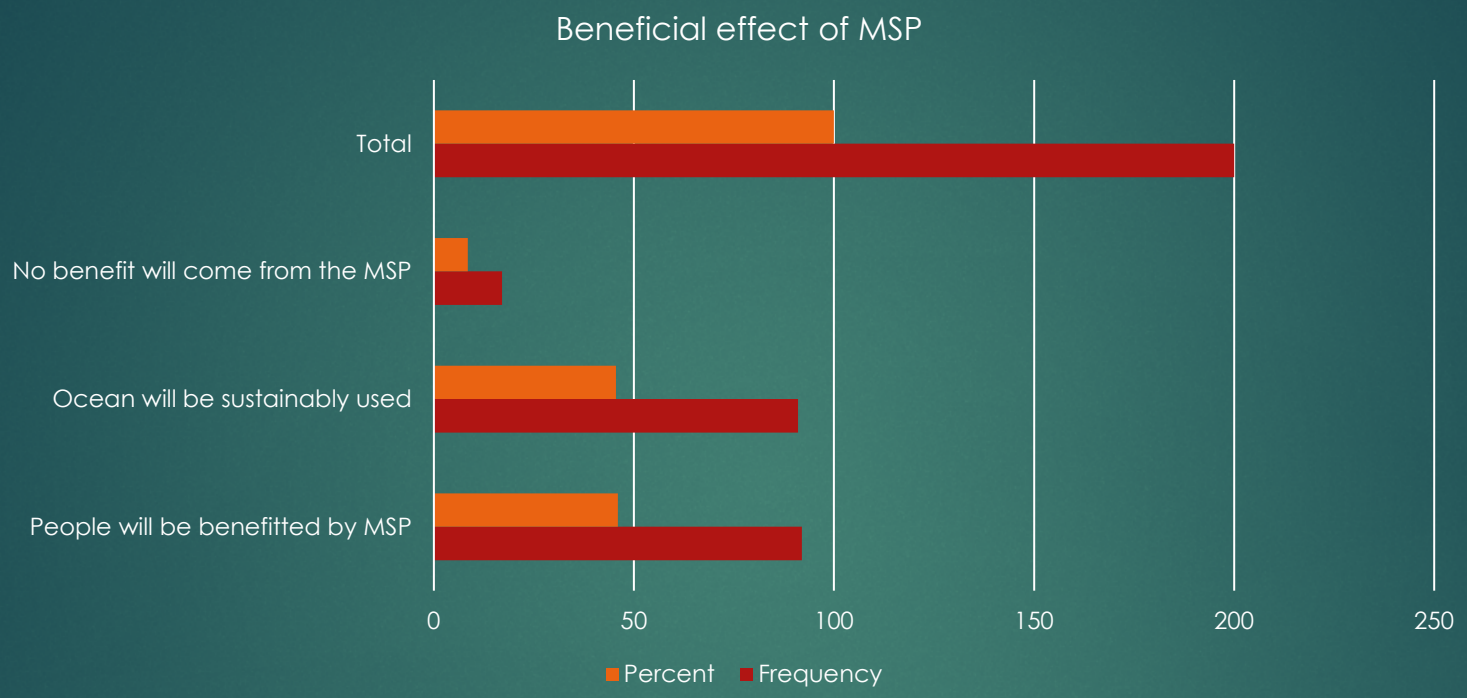

Graph 10 Response regarding the beneficial effect of MSP for the people

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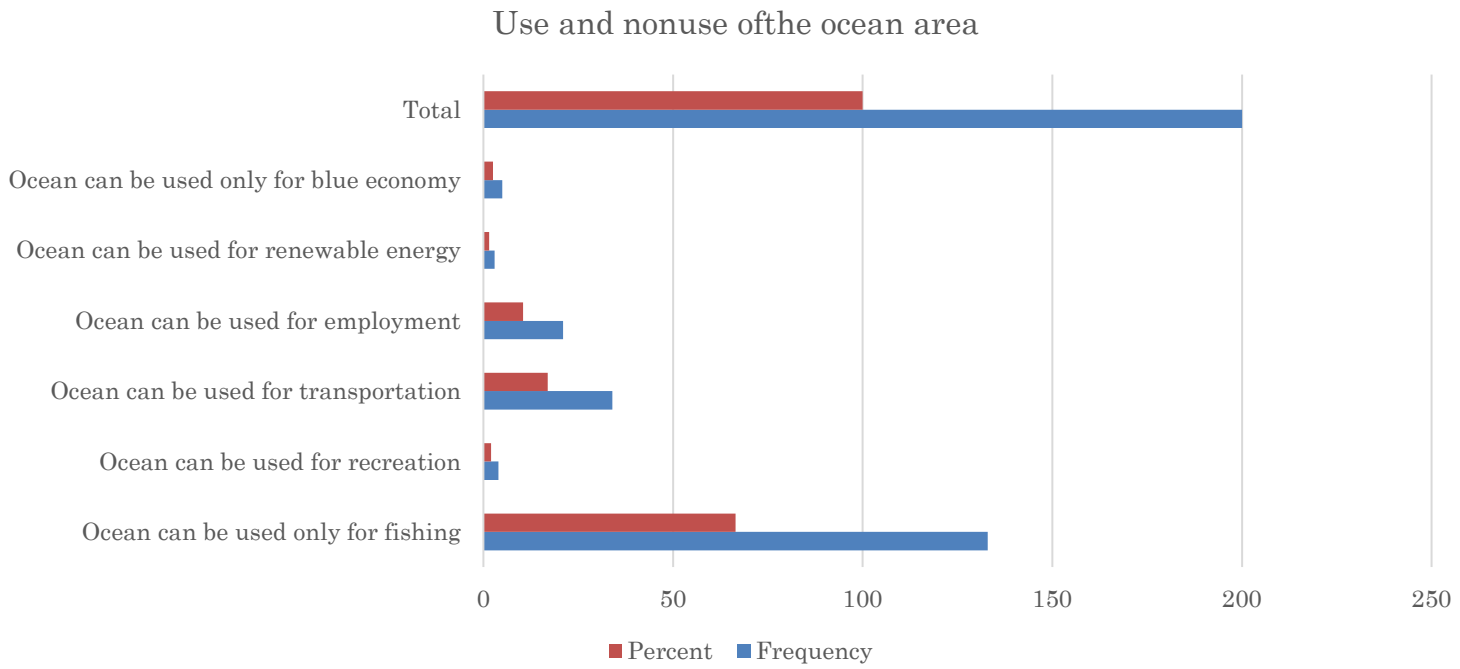

Graph 11 Response regarding the use and nonuse of the ocean area

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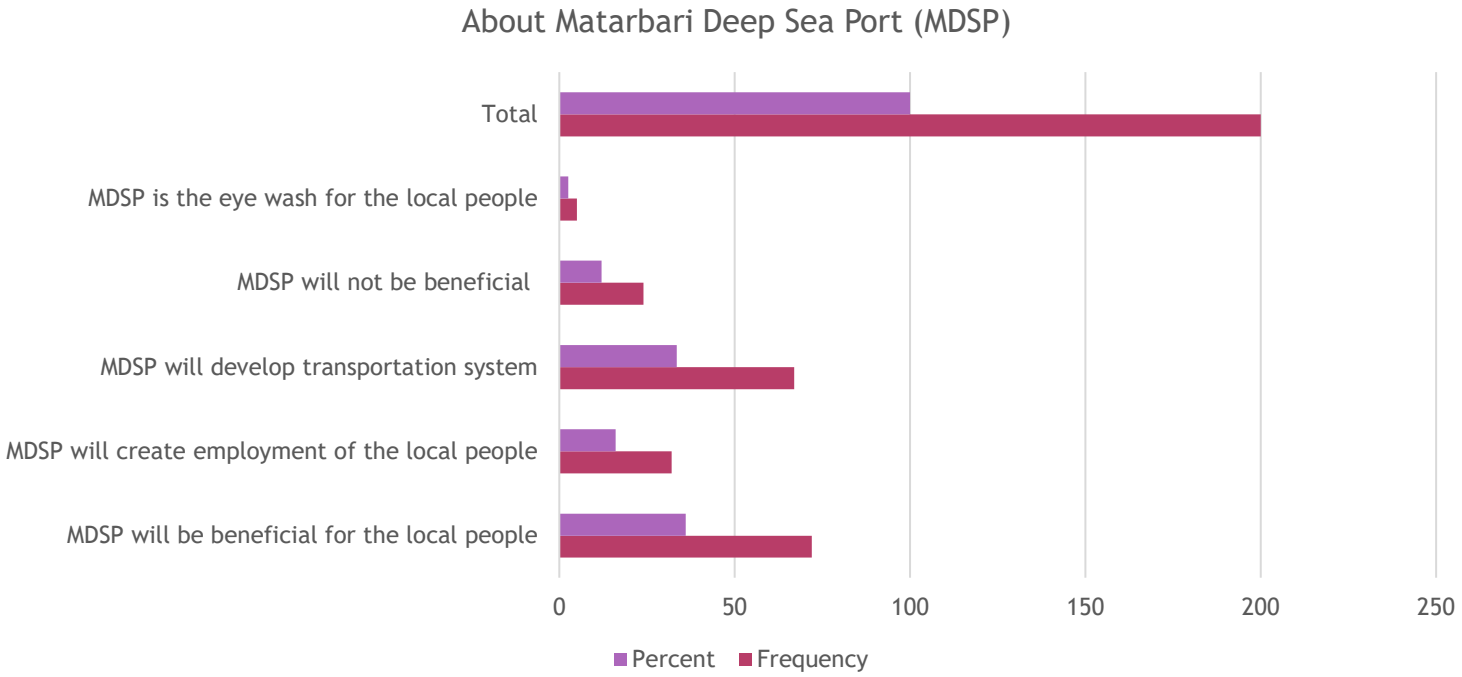

Graph 12 Response regarding the matarbari deep sea port (MDSP)

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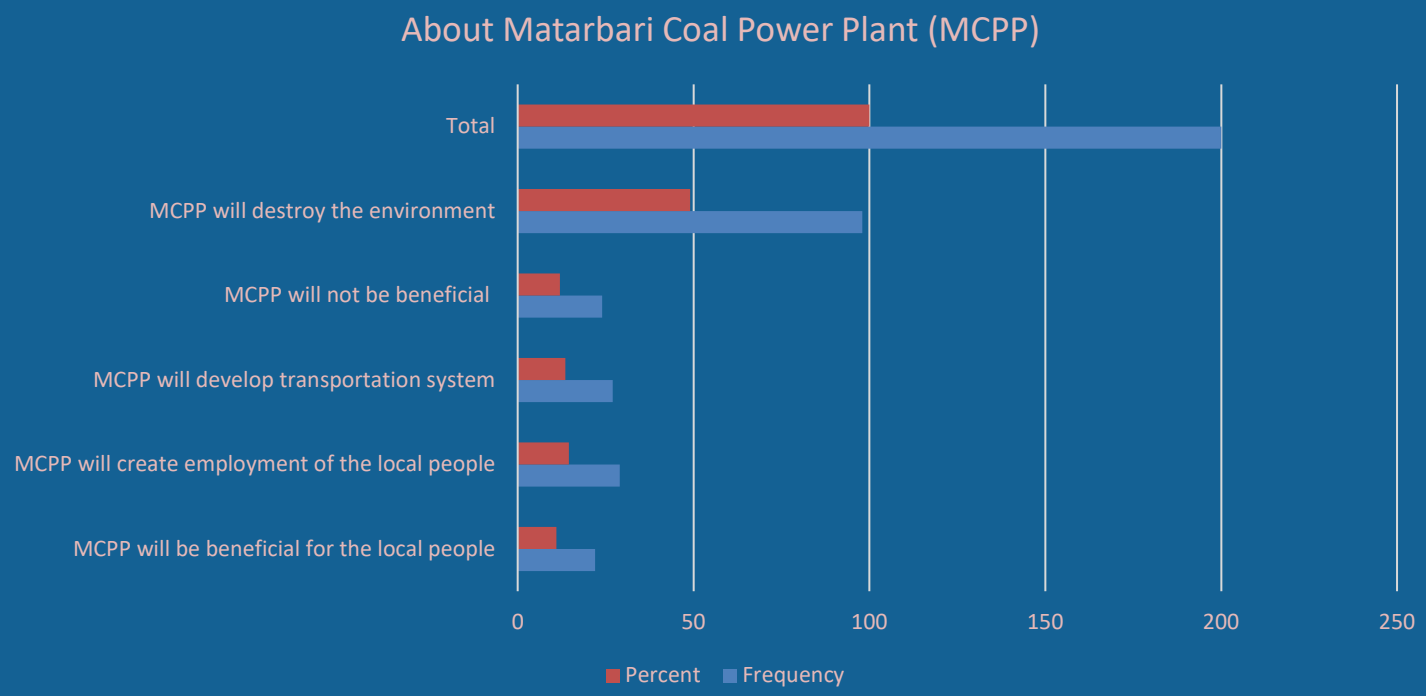

Graph 13 Response regarding the matarbari coal power plant (MCPP)

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Challenges for the Development of Marine Spatial Planning in Bangladesh

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The existing and institutional regimes for ocean governance have a lot of prospects, yet there are some challenges that are critically obstacles for the development of MSP.

1. The present legal and institutional regimes for ocean governance do not provide performance assessment through the monitoring and evaluation process.

2. The present legal regimes do not provide an integrated management. The present arrangements are sector-by-sector and not integrated and coordinated to each other.

3. There have no agencies for conducting necessary survey; data store centre; protection of the marine pollution, environment and ecosystem; and monitoring and evaluation of the management activities.

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Recommendations for the Development of Marine Spatial Planning in Bangladesh

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Based on the results and findings of this research works, the following recommendations for the development of MSP to achieve sustainable development and good governance of the ocean and coastal area of the Moheshkhali Island, Cox's Bazar, Bangladesh.

1. The new rules and regulations must establish an integrated, collaborative and independent management authority for the development and management of MSP.

2. The Government should adopt adequate provisions, clause and sub-clause under this rules and regulations for granting permission or giving license to the relevant authorities.

3. The Government should harmonize and materialize the current fragmented or sector-by sector regulations concerning the management of marine resources and services for cohesive and consistent legal regimes for MSP.

4. The Government should adopt a Marine Functional Zoning Plan for the development of MSP.

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CONCLUSION

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A Public Participation is important to collect spatially explicit information on respondent's values and management preferences at Moheshkhali Island. The Moheshkhali coast and marine environment is characterized by a multiplicity of values and preferences. The diversity of values and preferences suggests potential for conflict over management and permitted uses.

The present legal and institutional regimes for ocean governance, ocean management, and coastal management in Bangladesh have many steps and necessary provisions which are very close and relevant to the development and implementation of MSP.

THANK YOU