

A NARRATIVE STUDY ON MANGROVE ALLIANCE FOR CLIMATE (MAC) TO CO-ORDINATE WITH MEMBER COUNTRIES IN ASIAN CONTINENT

Author's Name: F. Hamja Maricar¹, Dr. D. Devanathan²

Affiliation:

1. Research Scholar, Department of Political Science and Public Administration, Annamalai University, Annamalai Nagar – 608 002, Tamil Nadu, India.
2. Professor and Head, Department of Political Science and Public Administration, Annamalai University, Annamalai Nagar – 608 002, Tamil Nadu, India.

Corresponding Author Name and Email ID: F. Hamja Maricar

advocatemaraicar@gmail.com

ABSTRACT

This study presents overview of Mangrove Alliance for Climate (MAC) to co-ordinate with member countries in Asian Continent. This study reveals how Mangrove Alliance for Climate (MAC) can able to help member countries and also reveals various types of mangrove forests across the globe and importance of mangroves. In general it protects coastal areas from Tsunami's storm sings and soil erosions due to their complex root system which despite sea wave energy. Sediment deposition is visible feature which arrests coastal eroson and sea water pollution. They are important sources of livelihood for communities found in and around mangrove forests. This study also reveals the challenges with mangrove conservations, and also reveals various significances such as trap and cycle various organic materials, chemical elements and important nutrients in the coastal eco-systems..

Keywords: Mangrove Alliance for Climate (MAC), Asian Continent

INTRODUCTION

Mangrove forests, also called mangrove swamps, mangrove thickets or mangle are productive wetlands that occur in coastal intertidal zones. Mangrove forests grow mainly at tropical and subtropical latitudes because mangroves cannot with-stand freezing temperatures. There are about 80 different species of mangroves, all of which grow in areas with low oxygen soil, where slow moving water allow fine sediments to accumulate.

Many mangrove forests can be recognised by there dense tangle of prop roots that make the trees appear to be standing on stills above the water. This tangle of roots allow the trees to handle the daily rise and fall of tides, which means that most mangroves get flooded at least twice per day. The roots also slow the movement of tidal waters, causing sediments to settle out of water and build up muddy bottoms.

Mangrove forests stabilize the coastline, reducing erosion from storm surges, currents, waves and tides. The intricate root system of mangroves also makes these forests attract to fish and other organisms seeking food and shelter from predators.

MANGROVE ALLIANCE FOR CLIMATE (MAC)

The Mangrove Alliance for Climate (MAC) is an initiative pioneered by the United Arab Emirates (UAE) and Indonesia. It was later joined by India, Sri Lanka, Australia, Japan and Spain.

During the Conference of Parties (**COP 27**) Climate Summit in Sham-El.Sheikh, Egypt, UAE and Indonesia announced the “Mangrove Alliance for Climate”.

- It includes UAE, Indonesia, India, Sri Lanka, Australia, Japan and Spain.
- It seeks to educate and spread awareness worldwide on the role of mangroves in curbing Global warming and its potential as a solution for climate change.
- However, intergovernmental alliance works on voluntary basis which means that there are no real checks and balances to hold members accountable.
- Instead, the parties will decide their own commitments and deadlines regarding planting and restoring mangroves.
- The members will also share expertise and support each other in researching and protecting coastal areas.

CONFERENCE OF PARTIES (COP) [UN CLIMATE CHANGE CONFERENCE]

The COP is the supreme decision-making body of the convention. All states that are the parties to the conventions are represented to the COP, at which they review the implementation of the convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the convention.

The COP meets every year unless the parties decide otherwise. The first COP meeting was held in Berlin, Germany in March, 1995. The recent **COP 28** was held in Dubai Dec 12, 2023.

As part of the initiative from **COP 28** Climate Change Summit. 10 mangrove trees are being planted for each visitors. More than 8,00,000 mangroves have been planted along Abu Dhabi's coastlines. This attracted more than 80,000 people from around the world for talks and conferences. The planted mangroves will help to absorb 170 tonnes of carbon dioxide from the atmosphere annually, Abu Dhabi Media official reported.

Dr. Al. Dhabari added, mangroves can also absorb upto four times more carbon than the trees in the Amazon forests, studies conducted by the Environmental Agency Department (EAD) also revealed the ability of mangrove trees in Abu Dhabi to store carbon at the rate of 0.5 tonnes per hectare per year which is equivalent to 8,750 tonnes of climate level and the energy consumption of 1000 homes a year.

Mangroves in Abu Dhabi support a wide range of bio-diversity and help protects sea grass beds and coral reefs from sedimentation.

AIMS AND OBJECTIVES

Since the Mangrove Alliance for Climate (MAC) to co-ordinate with member countries in Asian Continent. The mangrove forests are facing many challenges such as commercialisation of coastal areas by way of establishing aquaculture, coastal development.

The aims and objectives of the study.

- i) The members will also share, expertise and support each other in researching, managing and protecting coastal areas.
- ii) It seeks to educate and spread awareness on the role of mangroves curbing global warming and its potential as a solution for climate change.
- iii) Intergovernmental alliance works on a voluntary basis which means that there are no real checks and balances to hold members accountable.

- iv) The parties their own commitments and deadlines regarding planting and restoring mangroves.
- v) To study the environmental background, structure and air pollution etc of the mangrove forests.
- vi) Examine the level of carbondioxide and other pollutions produced in the factories.
- vii) Analyse the whole concept of the factories related to air pollutions etc which causes harm to the human being.
- viii) To assess the damages of mangrove forests by way of commercialisation of coastal areas.
- ix) To study the excessive human intervention in the mangrove forests.

MEMBER COUNTRIES OF MAC IN ASIAN CONTINENT HOW BENEFITED FROM MAC

The member countries of MAC in Asian continent are i) India, ii) Indonesia, iii) UAE, iv) Egypt, v) Sri Lanka, vi) Malaysia, vii) Vietnam, viii) Japan, ix) Bangladesh, x) Pakistan, xi) Singapore.

- The Alliance will rise awareness about the role of mangroves as a “nature based solution to climate change”.
- The Alliance will be amplified at G20 summit was held in Nov.15 and 16, 2022 in Bali under the presidency of Indonesia.
- MAC seeks to scale up, accelerate conservation, restoration and growing plantation efforts of mangrove eco-systems for benefit of communities globally, and recognize the importance of eco-systems for climate change mitigation and adoption.
- India is home to one of the largest remaining areas of mangroves in the world - the Sunderban.
- It has years of expertise in restore of mangrove cover that can be used to aid global measures in this direction.
- The move is in the time with India’s goal to increase its carbon sink.

SIGNIFICANCE OF MANGROVES

Mangroves play a very important role in supporting the food web with molluscious and algee-filled substrate acting as a breeding ground for small fish, mud crabs and shrimps, this providing a livelihood to local fishermen.

- Mangroves in coastal areas started as a natural barrier against cyclones and thus prevent loss of life and property.
- Additionally, mangroves are very important with respect to carbon sequestration and storage. Mangrove plants store carbon from the atmosphere and reduce the impact of global warming.

- Studies have shown that mangrove forests can absorb four to five times more carbon emissions than landed tropical forests.
- Mangroves also play a very important role in sustaining and supporting the economic benefits that may accrue as a result of “BLUE ECONOMY”.
- Mangroves protect the coastlines from erosion and storm surges and provide a “nursery” for marine creatures.
- Mangroves trap and cycle of various organic materials, chemical elements and important nutrients in the coastal eco-system.
- They provide one of the basic food chain resources for marine organisms.
- They provide physical habitat and nursery ground for a wide variety of marine organisms, many of which have important recreation or commercial value.
- Mangroves also serve as stagross buffers by reducing wind and wave actions in shallow shore line areas.

SALIENT FEATURES OF MANGROVES

- Saline Environment: They can survive under extreme hostile environment such as high salt and low oxygen conditions.
- Low oxygen: underground tissue of any plant needs oxygen for restorations. But in a mangrove environment, the oxygen in soil is limited or nil.
- Survival in extreme conditions: with their roots submerged with water, the mangrove trees, thrive in a hot muddy, salty conditions that would quickly kill most plants.
- Vivipross: Their seeds germinate while still attached to the parent tree. Once germinated, the seedling grows into propagate.

IMPORTANCE OF MANGROVES

The following points mentioned are the importance of mangroves.

- i) They protect coastal areas from Tsunami’s storm surges and soil erosions.
 - ii) Sediment deposition is a visible feature which arrests coastal erosion and sea water pollution.
 - iii) Many fish species and other found breeds here.
 - iv) They are in an important source of livelihood for communities found in and around mangrove forests.
- Collection of honey
 - Tanning

- Wax
- Fishing
- v) They are carbon sinks.

CHALLENGES WITH MANGROVE CONSERVATION

- Commercialisation of coastal areas Aquaculture, coastal development, rice and palm oil farming and industrial activities are rapidly replacing these salt tolerant trees in the eco-systems they support.

- Shrimp farms

The emergence of shrimp farms have caused at least 35% of the overall loss of mangrove forests. The rise of shrimp farming is a response to the increasing appetite for shrimp in the United States, Europe, Japan and China in recent decades.

Temperature related issues

A fluctuation of ten degrees in a short period of time is enough stress to damage the plant and freezing temperature for even a few hours can kill some mangrove species.

- Soil related issues

The soil where mangroves are rooted poses a challenge for plants as it is severely lacking in oxygen.

- Excessive human intervention

During past changes in a sea level, mangroves were able to move further in land, but in many places human development is now a barrier that limits, how far a mangrove forest can migrate.

CONCLUSION

The present study has been carried out how Mangrove Alliance for Climate (MAC) can able to help member countries in Asian continent such as India, Indonesia, UAE, Egypt, Sri Lanka, Malaysia, Vietnam, Japan, Bangladesh, Singapore and Pakistan to identify common problems related to mangrove forests which has some impacts on global warming, climate change etc. This study can also reveals how the research on mangrove forests can help member countries to do research exchange programmes.

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