World Bank Mangrove Program- Indonesia

Assessing the extent of coastal ecosystems and the changes in the area

Healthy oceans are a crucial aspect for a coastal dependent economy. It provides jobs, food and sustains economic growth. In order for there to be successful and sustainable growth, the management and protection of oceans and coastal communities are vital. A healthy ocean and coast is not limited to economic development but also to mitigate climate change. Mangroves and seaweed meadows protect coastal communities against natural disasters. Fishing and aquaculture supports livelihoods, and a thriving coastal ecosystem contributes to huge tourism revenue.

Since coastal communities and ecosystems boost development and act as a source of income they are severely threatened by human activity. Mismanagement and continuous unsustainable practices have brought coastal ecosystems to a brink. In light of the growing concern, Private Organizations, Banks, NGOs and Governments have tried implementing strategies to mitigate and reduce such uncontrolled practices by moving into what is known as the "Blue Economy".

Introduced specifically to developing countries, the Blue Economy is aimed at improving fisheries management; invest in sustainable aquaculture and the protection of key habitats. Thus restoring productivity of the oceans and returning billions to developing countries through economic development, job opportunities and food security. (The World Bank, Blue Economy https://www.worldbank.org/en/topic/oceans-fisheries-and-coastal-economies#1)

PROBLUE is a multi donor trust fund aimed at achieving a Blue Economy. "Housed at the World Bank it supports development of integrated, sustainable and healthy marine and coastal resources" (The World Bank, https://www.worldbank.org/en/programs/problue/overview)
Included in the list of countries, Indonesia the largest archipelagic country is too apart of the Blue Economy.

Introduction to the Oceans Multi-donor Trust Funds

The Indonesia Sustainable Oceans Program (ISOP) is a program introduced to help Indonesia transition into a Blue Economy. It is a collection of interrelated World Bank supported projects aimed at promoting sustainable and efficient management of marine and coastal areas for economic development, coastal livelihoods and a healthy ecosystem. The focus areas are supporting sustainable fisheries and coastal livelihoods, building healthy coastal and marine ecosystems and reducing marine pollution. The World Bank along with the Indonesian Government, local communities and several other parties contribute to the ISOP to develop knowledge, improve capacity and finance investment through four key funding projects.

Date of commencement and main fanciers

Under the ISOP a project called the Coral Reef Rehabilitation and Management Program (COREMAP) was established in 2014 focusing on protection of coral reefs. However the recent fund established in 2017 is the Oceans Multi Trust Fund (MDTF) at the request of the Indonesian Government.

MDTF's main funding partners are the Government of Norway and Government of Denmark with an initial contribution of US$ 2.26 million in 2017 and a further US$ 2.23 million in 2018. Government counterparts also support the project. The Ministry of Marine Affairs and Fisheries and the Coordination Ministry of Marine Affairs and Investment. Along with the implementation partner the World Resources Institute.

Main Objectives of MDTF

The project extends till 2022 and is aimed to provide technical assistance to implement policies, reduce marine debris and strengthen coastal resilience. (The World Bank https://www.worldbank.org/en/programs/indonesia-sustainable-oceans-program/overview). These set goals are to be achieved through improvement of coastal communities, sustainable livelihood practices and resuscitation of the ecosystem. The World Bank and partner authorities have been able to achieve these goals since its commencement. However there are hurdles that were identified.

Problems faced by ecosystems, livelihoods and mangroves

Key focus points of these projects in terms of livelihoods are to diversify ocean based business opportunities. Planning alternative income sources for communities that are dependent on aquaculture and tourism that harms coastal regions. Aquaculture such as shrimp ponds, seaweed farms and fishing are three of the main sources of income for coastal communities.

The communities involved in fisheries and aquaculture are poorer, who could benefit from additional finance. Supporting local business by providing access to finance and ability to build higher managerial capacity. The Indonesian Government, international development agencies and NGOs were implementing various approaches with the aim of diversifying, developing and introducing alternative livelihood strategies (Stacy, Gibson 2019).

Fishing contributes to a large portion of Indonesia's GDP contributing over US$ 26.9 billion in 2018. In order to keep up with this demand historical and ongoing overfishing has depleted nearly half of the country's wild fish stocks, leaving current and future productivity left undetermined in 2017. (The Asean Post, https://theaseanpost.com/article/indonesias-fisheries-not-managed-

efficiently#:~:text=Historical%20and%20ongoing%20overfishing%20has,and%20future%20productivity%20has%20).

A common problem faced for coastal communities are that they are outnumbered and under developed, to face competition of private sector companies that carry out fishing or aquaculture on a large scale. To cope with the increased demand more mangrove forest are cut down to make way for shrimp farms.

Initially in the 1960s cities such as Demak, Indonesia the coastal community had demand for rice, coconut and dry land crops. To support this production irrigation canals and drainage were built around the belt of mangroves leaving them intact. During this period of time these communities were rich. However when the green revolution sprung up the demand for rice fell, with a ban on fishing trawlers too, although demand for shrimp rose. Thus led to the transformation of paddy fields and mangrove forest to the building of shrimp farms. Unfortunately the frequent loss of shrimp due to diseases led to further destruction of the mangroves for more farms to be built. (World Bank Group, http://documents1.worldbank.org/curated/en/559541527663917051/pdf/Building-with-nature.pdf).

Out of the 300,000 hectares of land previously transformed for shrimp farms most of them were from mangrove forest. With only 40% of it in use in 2018. More than half of the shrimp farms carved out of mangrove forest have been left idle or abandon. In 1999 350,000 hectares of mangrove forest were cut down for shrimp farms to be constructed. This was recorded as the highest rate of mangrove deforestation recorded in the world by the World Bank in 2003 (Gokken, 2019, https://news.mongabay.com/2019/12/indonesia-shrimp-fisheries-mangroves-deforestation-aquaculture-farms/)

Factors such as these not only have put a strain on local communities that face a rising demand but also put a toll on the ecosystems and their sustainability.

Mangrove conversation as an independent aim under the MDTF

The MDTF does not touch on mangrove conservation as an independent topic but is included in the focus area of building healthy coastal and marine ecosystems. The aim is to strengthen coastal resilience through sustainable methods.

Although a pledge from the Indonesia's Marine and Fisheries Affairs Ministry has said to plant 1,800 hectares of mangroves by 2024 with 200 hectares of it in 2020 in attempts to ease the carbon emissions and preserve marine eco system (The Star, 2020 https://www.thestar.com.my/aseanplus/aseanplus-news/2020/07/26/indonesia-to-restore-mangrove-forests-to-cut-carbon-emission)

Aims to improve ecosystem management

The World Bank has identified strategies on how to improve and enhance livelihoods. The World Bank, https://www.worldbank.org/en/programs/indonesia-sustainable-oceans-program/priority-themes#2). Increasing livelihood opportunities such as providing advance income-supporting activities. These include training, capacity building and payments for ecosystem services.

Improve catch quality and reduce post harvest loss. According to the Asean Post (2019) more than US$ 7 billion worth of seafood is lost due to wastage and mismanagement. With strategies to revive Indonesia's fisheries and rejuvenate abandon shrimp farms the World Bank has also come up with the strategy to increase access to local and international fish markets.

In terms of sustainable strategies to improve the ecosystem the World Bank has implemented increasing spatial planning and monitoring. This means to provide knowledge on the environment and educate communities on how to use resources in a sustainable manner.

Sustainable capture fisheries. It has been highlighted over the several years that Indonesia's fisheries have been exploited causing depletion in fish stocks. Transitioning into more sustainable fishing practices by analyzing investments and changes that need to take place.

Protecting coastlines by rejuvenating mangroves, seaweed beds and coral reef rehabilitation are all strategies being implemented.

An important factor that has also been considered is the valuation of the coastal ecosystem. Through the gathering of data and information from various sources the World Bank is able to educate stakeholders on the effects of their actions. This includes understanding the economic and socio-economic factors that affect coastal communities, ecosystems and private sector and Government.

In the recent past there have been attempts to mend coastal ecosystem negligence. Climate change has taken a sever toll on mangroves through rising sea levels and changes in temperature. Affecting the fish stocks and large amounts of sea erosion and damage to coastlines. (Gilman et al, 2008). Educating stakeholders and introducing mechanisms to counter these issues are by providing knowledge; finance and coordination that are included in the World Bank's focus points. By connecting with the relevant stakeholders and building of awareness Indonesia will be able to maximize its coastal-based economic revenue.

References

World bank, Indonesia sustainable oceans program- https://www.worldbank.org/en/programs/indonesia-sustainable-oceans-program/overview#:~:text=Established%20in%202017%20at%20the,debris%20and%20strengthen%20coastal%20resilience.

World Bank ISOP Presentation http://pubdocs.worldbank.org/en/682391588971824481/ISOP-Introduction-Feb-FINAL.pdf

Natasha Stacy, Emily Gibson *et al,* 2019 https://link.springer.com/article/10.1007/s40152-019-00142-5#Sec4

Eric Gilman *et al,* 2008 https://www.sprep.org/att/IRC/eCOPIES/Pacific_Region/315.pdf