

Economic value of ecosystem services by Mangrove Planting Project

Tokio Marine Holdings, Inc. (President and Group CEO: Satoru Komiya) proudly announce that Tokio Marine & Nichido Fire Insurance Co., Ltd. (President: Shinichi Hirose, hereinafter “TMNF”) commissioned a survey to Mitsubishi Research Institute, Inc. (President: Takashi Morisaki) and received a survey report that the cumulative total value of ecosystem services generated by TMNF’s mangrove planting project for 20 years (from April 1999 to March 2019) amounted to approximately US\$1,206 million according to an internationally recognized methodology.

Tokio Marine Group will continue to promote value creation initiatives through providing Mangrove-based Solutions in collaboration with various stakeholders including non-governmental and non-profit organizations* and contribute to the creation of a safe, secure and sustainable future.

(*) Action for Mangrove Reforestation (ACTMANG), OISCA International, and International Society for Mangrove Ecosystems (ISME)

1. Background / Methodology

TMNF has been continuing Mangrove Planting Project since 1999, and planted 10,930ha (cumulative total) of mangroves in nine countries in the Asia-Pacific region by the end of March 2019. It has achieved “Carbon Neutral*” status for 10 consecutive years since fiscal 2009 in its domestic business activities.

In recent years, methods for evaluating the value of “nature blessings” such as biodiversity and ecosystem services by experts have progressed, and the efforts of the companies to evaluate values of social value creation projects are focused.

Therefore, TMNF follows methodologies such as “Millennium Ecosystem Assessment” and “The Economics of Ecosystems and Biodiversity (TEEB)” developed through international initiatives on ecosystems and biodiversity, evaluated the value of ecosystem services created by mangrove planting between April 1999 and the end of March 2019.

* “Carbon neutral” state means that CO₂ emitted in the course of business activities is equivalent to the volume of CO₂ removed or reduced by way of use of natural energy, the retirement of carbon credits and mangrove tree planting.

2. Result of trial calculation of value generated by mangrove planting project

The results of a trial calculation evaluating the value created by mangrove planting are as follows.

Ecosystem services	Economic Value
1. Mangrove products harvests	Approximately US\$145 million
2. Support to off-site fisheries productivity	Approximately US\$361 million
3. Coastline stabilization and erosion control	Approximately US\$258 million
4. Shelter against extreme weather (damage mitigation)	Approximately US\$128 million

5.Wastewater treatment, sediment trap and prevention of saline intrusion	Approximately US\$302 million
6.Carbon sequestration (climate change mitigation)	Approximately US\$12 million
Cumulative Total	Approximately US\$1,206 million

3. About various other benefits

By mangrove planting, in addition to the quantitative evaluation described above, the improvement of local people's lives, the reduction of disaster damage, and other various benefits have been generated for the local community and global society, such as climate change mitigation.

Improving the lives of local people	About 1.41 million people live in and around the planted area, and about 140,000 people depend on marine resources obtained from mangrove forests as the main source of income and employment. It also affects approximately 300,000 people employed in non-fishery production activities related to mangrove fisheries and approximately 600,000 people who are engaged in the production of fishing gear, shipbuilding and maintenance related to mangrove fisheries.
Mitigating disaster damage	At least about 1.94 million people are protected by mangroves from storms, storm surges, erosion, salt water ingress, water pollution, and more.
Mitigating the impact of climate change	People around the world are benefiting from mangroves and their soil storing approximately 1.25 million tons of carbon dioxide.

Tokio Marine Group strives to resolve social issues through promoting all-employee-participative value creation initiatives in collaboration with various stakeholders and contribute to the achievement of SDGs from now on.

