Post-tsunami events in Peninsular Malaysia: intensification of R&D in mangrove establishment for coastal protection

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Abstract

The last tsunami that hit the region in December 24, 2004 has strengthened the image and perception of mangroves as a green belt that need to be critically preserved for coastal protection. Although the effectiveness of mangrove in protecting lives and properties depends very much on the distance from epicenter of tsunami, the presence of mangrove proved to be effective in reducing wave impacts during the last tsunami along coastal areas in northern parts of Peninsular Malaysia. Therefore, as part of the post-tsunami programs, the government initiated a special task force to re-examine the condition of mangrove along coastal areas especially those that are identified vulnerable to the future tsunami. Most of the coastal areas in the east and west coast of Peninsular Malaysia are subject to different degrees of erosion. Areas that are exposed to severe erosion found to be unstable in supporting mangrove vegetation and some form of hard-engineering structures, like geo-tube are necessary to alleviate strong wave actions. The placement of geo-tube of about 100 to 150 m seawards provides sufficient space of mudflat to be rehabilitated with mangroves. However planting of mangroves within these areas posed a lot of challenges since the substrate is very soft and liquid, incapable to support seedlings. The concept of planting in these areas is different from the normal planting practices in productive mangrove, where the muddy substrate is more stable to support seedlings and very often the planting strips are sheltered and surrounded by matured mangroves trees. The Forest Research Institute Malaysia (FRIM) was given the task to conduct research in trying to rehabilitate such areas with different species of mangroves. If successful, the area of 100 to 150 m mudflat will act as a buffer that offers additional protection to coastal areas besides the placement of goe-tube. The paper reports on research activities conducted by FRIM in trying to establish improved planting techniques that will enhance the survival of planted seedlings.

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