Development of Reforestation Technique for Rehabilitating Mangrove and Research of Mangrove's Reductive Effect on Tsunami Disaster

H.Yamamoto, H. Koyama
The Kansai Electric Power Co., Inc., Osaka, Japan

Abstract

There exist extensive areas of abandoned shrimp farms in the coastal area of Southeast Asia, Most of those abandoned areas were formerly mangrove stands, but converted into shrimp farms resulting in a depletion of natural resources. It is reported that approximately 200 thousands hectares of mangrove forests were deforested in Thailand within the thirty years starting from 1961. Consequently, rehabilitating abandoned shrimp ponds into mangroves has been becoming a concerned social issue.

We, the Kansai Electric Power Co., Inc., is carrying out the development of reforestation technique for rehabilitating degraded mangrove ecosystems, collaborated with Ministry of Natural Resource and Environment, Thailand and our subsidiary company, the General Environmental Technos Co., Ltd., from 2000 in several coastal sites of Thailand.

Until now, we have found important treatments for rehabilitating abandoned shrimp ponds. Three treatments are effective for the rehabilitation, one is improving ground level so as to make water circulation freely, second is applying soil conditioners such as coconut fiber, shrimp waste. The third is choosing right species. Those treatments were proven to be effective as were shown in a relatively high percentage of survival rate and high growth rate.

Currently we are trying to develop planting mangrove in new mud flat areas where is thought to be difficult place for plantation due to a strong wind and a high wave. This trial will make a way to expand plantation area and to prevent severe coastal erosion in Thai Gulf.

In addition, we are researching mangrove's reductive effect on tsunami disaster in Thailand with the cooperation of Ministry of Natural Resource and Environment, Thailand. It is widely observed that the mangrove areas had relatively small damage at the event of the Indian Tsunami happened at 26th December 2004. Our research aims at identifying damage levels of tsunami more precisely analyzing satellite images combined with field investigation to clarify mangrove's protective role against tsunami attack..