DEVELOPMENT OF REFORESTATION TECHNIQUE FOR REHABILITATING MANGROVE ECOSYSTEM' PROJECT EXPERIMENT IN ABANDONED SHRIMP POND AND NEW MUDFLATS -

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Coastal ecosystems in the tropics, including mangroves, coral reefs and continental shelves surrounding them, have been considered to play an important role in fixing and storing atmospheric CO2, while they are greatly valued in terms of biological diversity and rich resources.

However, coastal areas in the South East Asia have been under strong pressure for development and exploitation of resources. This includes clearing of mangroves, utilization of cleared mangroves for shrimp ponds, salt production, tin mining, construction of port and/or factory, extension of road and their subsequent abandonment.

Considering those circumstances, it is important to develop restoration techniques for mangrove ecosystems in order to contribute to global environmental conservation or regional conservation program. Therefore, in 2000, Royal Forest Department, Thailand, KANSAI and KEEC have started to develop restoration technique, in two different types of places, abandoned shrimp pond and new mudflats. The results indicated detail as following

1. Abandoned shrimp pond

Contrary to that mangrove could recover easier in extensive or traditional shrimp pond, mangrove recovery is more difficult in case of intensive shrimp pond. Experiment site where we conduct the experiment was heavily modified since abandonment. Since no blockage of wind and/or wave, abandoned site was deposited by sediment, led into the augmented ground level. This condition made so difficult water circulation that planted mangroves hardly survived. From the trials, circulation of water was recuperated then made possible planted mangrove survive. Moreover, some soil conditioners such as coconut fiber showed a good effect in initial growth stage of planted mangroves.

2. New mudflats

Retreating of coastal line caused by loss of mangroves is getting a serious problem in Thailand. Mangrove has a role of preventing coast against erosion. It was aimed at establishing preparing technique of plantation basement and at selecting available species for planting in mudflats. Even though adequate species were found for new mudflats, survival rate is quite low supposedly because of lower ground level and of wave attack specially in monsoon season.

Results of field experiment

Activity	*loaction*	*ha*	*spp*	End of planting	replanting	survival %	*mesure time*
Abandoned shrimp	Khanom	6	R.M	2001 Sep		94	2002 Sep
			B.C			95	
	Samuth Sakorn	6	R.M	2001 Sep	2001 Nov	93	2002 June
New mudflats	Khanom	7	R.M	2001 Nov	2001 Dec	50	2002 Jan
			R.A			35	
			A.M			60	
			A.A			60	
	Samuth Songram	7	A.A	2001 Aug	2001 Aug	0	2001 Oct
			S.C			>50	
			R.M			>30	
	Songkla	7	S.C	2001 Oct		50	2001 Oct

A.A -*Avicennia alba*
A.M -*Avicennia marina*
B.C -*Burguiera cylindrica*
S.C -*Sonneratia caseoralis*
R.A -*Rhizophora apiculata*
R.M -*Rhizophora mucronata*