

Royal Initiative Project: Coastal Fishery Resource Rehabilitation in Pattani and Narathiwat Provinces, Thailand

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Abstract

The Royal Initiative Project on Coastal Fishery Resource Rehabilitation in Pattani and Narathiwat Provinces of Thailand has been implemented during 2002-2015. Five (5) types of materials are used for ARs, *i.e.* 707 concrete pipes, 5318 concrete blocks, 881 used train cars, 590 used cars, and 25 used military tanks. These ARs were installed in 101 fish habitats in Pattani and Narathiwat Provinces (2 fish habitats used concrete pipes, 50 fish habitats concrete blocks, 30 fish habitats train cars, 18 fish habitats cars, and 1 fish habitat used military tank). In 2015, results of the monitoring and evaluation carried out through diving survey, fishing gear survey and income survey, showed that most artificial reefs are still in good condition but some are sinking. For artificial reefs using train cars, the walls and roofs had collapsed. A total of 188 fish species were found in the artificial reefs areas. Small-scale fishers from Pattani and Narathiwat Provinces fish around the artificial reefs using hook and line, threadfin bream fish trap, fish trap, and short-bodied mackerel gill net, earning total incomes that ranged from 14,275.38 to 110,064.71 Baht/month. The catch rate was 31.045 kg/boat while the average income was 47,371.20 Baht/month.

Introduction/Background Information

The Royal Initiative Project on Coastal Fishery Resource Rehabilitation in Pattani and Narathiwat Provinces in Thailand was launched in October 2001 (Siripech *et al.*, 2002; DoF, 2005), after which studies were conducted, and all related activities regularly monitored. Involved in the project were public agencies, universities, and the private sector. Such undertaking made it possible to learn more about

this important project that had already succeeded in raising the standards of living of fishers in the two provinces, and in restoring the natural wealth of the fishery resources. The achievements of the project have fully met the objectives that were graciously established by Her Majesty the Queen of Thailand in bringing to the Thai citizens effective solutions to their problems.

Activities/Results

This Royal Initiative Project had been implemented in Pattani and Narathiwat Provinces of Thailand from 2002 to 2014.

The materials used as artificial reefs (ARs) are shown in **Fig. 1**, while **Table 1** shows the number of materials that have been used as ARs in these provinces.



Fig. 1. Materials used as ARs in Pattani and Narathiwat Provinces, Thailand under the Royal Initiative Project during 2002-2014: (clockwise from upper left) concrete pipes, concrete blocks, train cars, military tanks, and garbage trucks

Table 1 Artificial reefs installed in Pattani and Narathiwat Provinces, Thailand through the Royal Initiative Project during 2002-2014

Year	Area	Concrete pipes		Concrete blocks		Train cars		Garbage trucks		Military tanks	
		Hab.	No.	Hab.	No.	Hab.	No.	Hab.	No.	Hab.	No.
2002	P	1	221	3	2,100	5	208				
	N	1	486	1	700						
2003	P			1	875	3	25				
	N			3	7,170	4	75				
2004	P			7	4,570	7	160				
	N			7	4,580	4	140				
2005	P			1	630						
	N			1	645						
2006	P			1	605			2	93		
	N			1	610			2	96		
2007	P			1	544			1	40		
	N			1	587			4	160		
2008	P			1	501						
	N			1	485						
2009	P			3	1,560						
	N			3	1,505						
2010	P			2	1,277	3	75	6	135		
	N			1	660	4	198	3	66	1	25
2011	P			1	549						
	N			2	1,103						
2012	P			2	1,016						
	N			1	522						
2013	P			2	987						
	N			1	515						
2014	P			1	502						
	N			1	520						
Total	P	1	221	26	15,716	18	468	9	268		
	N	1	486	24	19,602	12	413	9	322	1	25
Grand Total		2	707	50	35,318	30	881	18	590	1	25

Note: P - Pattani Province N - Narathiwat Province Hab.- Habitat No. – Number of materials

Objectives and Study Areas

1. Monitor the artificial reefs of the Royal Initiative Project in Pattani and Narathiwat Provinces in 2015
2. Survey the fishing gears used around artificial reefs in 2015
3. Survey the income of fishers operating around artificial reefs in 2015

The fishing areas covered two (2) villages in Pattani and Narathiwat, namely:

- (1) Bangkao M.1, Bangkao Sub-district, Saiburi District, Pattani Province
- (2) Bouengcharam M.10, Paiwan Sub-district, Takbai District, Narathiwat Province

Results

In early 2015, monitoring and evaluation were carried out in the study areas through diving

survey, fishing gear survey, and income survey. The results are as follows:

Diving survey

Most artificial reefs were still in good condition although some were sinking. However, for ARs built from train cars, the walls and roofs had

collapsed. A total of 188 fish species were found around the ARs (**Fig. 2** and **Table 2**).

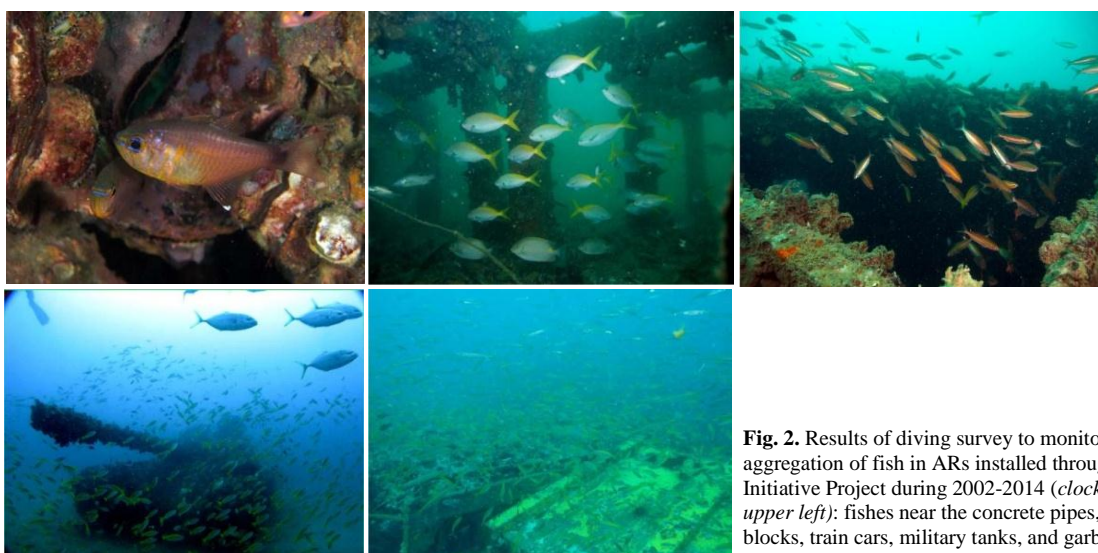


Fig. 2. Results of diving survey to monitor the aggregation of fish in ARs installed through the Royal Initiative Project during 2002-2014 (clockwise from upper left): fishes near the concrete pipes, concrete blocks, train cars, military tanks, and garbage trucks

Table 2. Number of fish species and fish family in different ARs in 2014

	Total	Concrete pipes	Concrete blocks	Train cars	Garbage trucks	Military tanks
No. of fish species	188	50	132	122	119	98
No. of fish family	55	23	46	39	40	36

Fishing gears survey

Small-scale fishers from Pattani and Narathiwat Provinces fish around the ARs using hook and line, threadfin bream fish trap,

fish trap, short-bodied mackerel gill net. The results are shown in **Table 3**.

Table 3. Catch rate (kg/boat) and income (Baht/boat) based on monitoring of ARs of different materials in 2014

Materials	Fishing gear	Catch rate (kg/boat)	Income (Baht/boat)	Income (Baht/month)
Concrete blocks	Hook and Line	19.32	1,838.21	36,764.28
	Threadfin bream fish trap	74.40	948.51	18,970.20
	Fish Trap	19.94	1,136.67	22,733.33
	Short-bodied mackerel gill net	59.22	5,329.62	106,592.31
Train cars	Hook and Line	19.41	2,109.88	42,197.58
Garbage trucks	Hook and Line	11.91	1,368.38	27,367.59
Military tanks	Hook and Line	18.55	1,127.50	37,233.40
	Fish Trap	17.40	1,416.00	28,320.00

Income survey

The results indicated that the total income ranged from 14,275.38 to 110,064.71 Baht/month. The catch rate was 31.045 kg/boat

while the average income was 47,371.20 Baht/month.

Lessons Learnt

The Royal Initiative Project on Coastal Fishery Resource Rehabilitation involved various stakeholders including the public agencies, universities, and the private sector. Through such undertaking, it was possible to learn more about this important project that has already succeeded in raising the standards of living of

fishers in the two provinces, and in restoring the natural wealth of the fishery resources. The achievements of the project have fully met the objectives that graciously established by Her Majesty the Queen of Thailand in order to bring to the Thai citizens, the effective solutions to their problems.

Recommendations and Way Forward

The Royal Initiative Project on Coastal Fishery Resource Rehabilitation in Pattani and Narathiwat Provinces succeeded in restoring fishery resources in the waters of these provinces. The Department of Fisheries has a duty to

monitor and install more ARs every year with the intention of attaining sustainability of the resources and improving the fishing communities' livelihoods.

References

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Siripech, A.; H. Somchanakij and S. Inchu. 2002. Evaluation of artificial reefs installed in Pattani Province. Technical Paper No. 12/2002, Marine Fisheries Division, Department of Fisheries, Thailand