

**Asia-Pacific Fishery Commission briefing note
Tsunami impact on fisheries in Thailand**

Tsunami fisheries impacts – Thailand

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The total fish production for all of Thailand (both Andaman Sea and Gulf of Thailand) in the year 2000 was estimated by DOF as 3.7 million mt. The total fishery involved some 826,980 fishers using approximately 17,295 DOF registered fishing apparatus from 53,538 Department of Harbours registered fishing vessels¹.

The marine catch was valued at some 49.40 billion baht or just over US\$1.1 billion in 2000 and accounts for some 2.77 million mt, or 79% of total fisheries production². Catch usage falls into the following categories: a) 52% food fish, b) 31% trash fish, and c) 17% squid and cuttlefish, shrimp, shellfish and others. It is reported (FAO Thailand Country Profile Web Page) that 31.7% of the total marine catch is taken in the Andaman Sea

FAO information in the Andaman sea fishery of Thailand³

FISHERY	LICENSED FISHING GEAR ⁴ 2000	FISHERS 2000	CATCH & VALUE 2000 (000s of mt & US\$ Millions Equiv Yr 2000)	CATCH & VALUE 1996 (000s of mt & US\$ Millions Equiv Yr 2000)
COMMERCIAL				
Trawl	1,017	9,143	490 mt / \$199.542	512 mt / \$250.925
Purse Seine	415	9,971	184 mt / \$58.713	291 mt / \$86.941
Gillnet & Entangle Net	57	436	1 mt / \$1.729	3 mt / \$2.489
Sub-Total	1,489	19,550	675 mt / \$259.984	806 mt / \$340.355
ARTISANAL				
Small gill net	194	388	28.439 mt / \$43.377	12.615 mt / \$21.903
Trap	10	20	4.662 mt / \$7.871	3.439 mt / \$5.098
Hook and Line	10	10	1.091 mt / \$1.,355	2.040 mt / \$1.414
Sub-Total	214	418	34.192 mt / \$52.603	18.094 mt / \$28.415
TOTAL	1,703	19,968	34.867 mt / \$312.587	18.900 mt / \$368.770

¹ Note that Department of Harbours licenses vessels (53,538 licensed as fishing vessels) while DOF licenses fishing gear (17,295 licensed in 2000).

² FAO Web Page, *Thailand Country Profile* (www.fao.org/fi/fcp/en/THA/profile.htm)

³ Statistics provided courtesy of the Department of Fisheries, Thailand via the FAO Questionnaire 2003.

⁴ Note the fact that DOF licenses fishing gear (17,295 in 2002), and DOH registers fishing vessels (54,538 2000) – the discrepancy between the two figures being significant. DOF figures are utilized as this is the only available recorded catch information.

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Web based information resources on tsunami and fisheries

For further information and updates on the tsunami and fisheries impacts see:

<http://www.apfic.org/> Asia Pacific Fishery Commission

<http://www.fao.org/tsunami/> FAO Tsunami website

<http://www.enaca.org> Network of Aquaculture Centres in Asia

<http://www.icsf.net> International collective in Support of Fishworkers

<http://www.bobpigo.org/> Bay of Bengal inter-governmental Organization

Fisheries impacts and current response

The priority of villagers in worst affected villages is the retrieval of their dead, however, even in the worst impacted villages there is also a need for households to get back to their livelihoods. This is probably a natural reaction to disaster and probably an important part of the ‘getting back to normal’ process. For fisherfolk, this means getting back on the water, although some have expressed the feeling that the unpredictable nature of the disaster has left them cautious and anxious about whether it will reoccur.

Ranong is one of the most under populated provinces, where over half of the labour force are from Myanmar. Other provinces such as Phangna also have significant numbers of migrant labourers from Myanmar. Many of these are employed in the fishery sector in: shrimp farms, shrimp hatcheries and larger fishing vessels.

Department of Fisheries response to the tsunami impacts

The Thai Department of Fisheries has established a “Fisheries Rescue Centre” in Phuket (based at the Andaman sea fisheries research and Development Centre⁵). The centre is coordinating the collection of damage and loss information for the Department of fisheries from all five affected provinces. As the losses are registered with the Provincial fisheries offices, these are communicated twice daily to the Fisheries Rescue Centre (FRC).

Data collected is restricted primarily to the cases of lost or damaged fishery equipment (boats) and losses incurred in aquaculture holdings. The detailed information is listed by village and it is therefore possible to identify at sub-district (Tambon) and even village level (in some cases) where significant losses have been reported. This data set can therefore be used as an indicator to assist in identification of the most affected areas.

The loss information collated by DOF is not linked to other data at the national level – but this might be possible to undertake at the provincial level. There may be some need for support to the Provincial office responsible for this in the short term.

⁵ Address: 77 Sakdidej Rd., Amphur Muang, Phuket, 83000, Tel: +66-0-7639-1138 to 40 FAX +66-7-639-1139 afdec@phuket.ksc.com

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Whilst some information is related to claims of losses, the Provincial fisheries office is also collecting some village level information relating to losses.

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Districts and number of villages registering fisheries/aquaculture losses or damage

There are 74 affected sub-districts and a total of 386 villages that have reported losses for fisheries and/or aquaculture.

	Areas of losses	
	Sub-district	Village
Ranong	7	22
Meuang	2	11
Kapoe	2	7
Branch Dist. Suk Samran	3	4
Phangna	15	73
Takua Pa	4	11
Takua Tung	2	13
Tai Meuang	2	7
Koh Yao	2	14
Kuraburi	4	23
Meuang	1	5
Phuket	8	81
Meuang	6	42
Krathu	2	11
Tha Lang		28
Krabi	23	123
Meuang	6	34
Klong Thom	5	19
Neua Klong	4	18
Ao Leuk	3	16
Koh Lanta	5	36
Trang	12	51
Gantang	4	14
SikAo	3	12
Palien	3	13
Branch Dist. Haad Samran	2	12
Satun	9	36
Meuang	5	15
La Ngu	4	21
Thung Wah	3	10
Total	74	386

Targetting of impacted villages and households

DOF reported losses can be ranked according to the number of claims and this can be disaggregated to village level for most provinces (Satun, Trang, Krabi, Phang Nga, Phuket but not Ranong).

The large number of claims indicates serious impacts to fisheries or aquaculture livelihoods and is spread through all five affected provinces. If this information is coupled to village level information regarding loss of life and damage to housing (and any other available indicators) it will enable the ranking of villages into those that have been severely impacted and those where the impacts have been less severe or even minor (it is important to note here that this would not probably be a good targeting method for villages and households heavily dependent upon tourist services, since the tourist locations are focal, but those servicing the tourist sector may come from a wider area).

Villages severely affected could be focused on for a comprehensive package of interventions relating to livelihoods rehabilitation and community organization type activities. The interventions in these areas would require both short term mitigation response as well as longer term rehabilitation.

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Less affected villages (i.e. those which have incurred losses to fishing/aquaculture equipment but relatively limited impact on other structures and/or loss of life, could be grouped for more immediate assistance but that does not require intensive holistic type intervention.

Villages with very limited impact on equipment/fishing vessels/aquaculture facilities may be given low priority, but should still be subject to some form of cross-check or verification type activity, to ensure that there are not other deeper livelihood related issues that are not linked to the indicators used for the preliminary screening (i.e. villages with a high dependence on servicing the tourism sector).

It is clear that many larger scale operations may not have reported losses because they do not require compensation (i.e. the amount offered is quite limited relative to their losses and therefore not worth the administrative paperwork to make the claim).

Compensation system and rates

There is an established system for registering losses following a natural disaster (e.g. cyclones, floods and most recently tsunami). Losses or damage claims that may be eligible for government compensation are registered at the Provincial fishery office (and possibly at Amphur level if a fishery officer is present).

Boat owners (as listed on boat registration) must register the loss with the Registering district or province within 15 days in the area where the vessel was affected or the registered homeplace of the vessel owner. The Provincial fisheries office (or district fisheries office) must collate the documents and check for accuracy before sending to the Department of Fisheries within 120 days.

Typical documentary evidence required for compensation is the vessel registration document, or permission to fish document (in date). Since the majority of vessels that have been damaged or lost are in the small scale category, very few actually have registration documents. In this case alternative evidence of ownership may be considered/used as supporting evidence:

- Statement of ownership by the Provincial fisheries Office (stating the boat is repairable or beyond repair)
- Document of guarantee from a fishers association, farmers group, or fishery cooperative stating the owner is a member, or
- Sub-district headman (gamnan)
- Guarantee document from the village headman) may be accepted
- Record in the fishery survey,

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Compensation for fishing vessels

There are several categories of loss that are eligible for compensation:

- i) Support for the recovery of a vessel (i.e. refloatation, or movement of the vessel – since many have been swept some distance inland above the high tide mark).
- ii) Support for repairs to a damaged vessel
- iii) Compensation for vessel loss (or damaged beyond repair)

The levels of compensation have been announced recently (but it is uncertain whether these will be revised as further information emerges). Current rates are as follows:

Fishing vessel less than 10 metres length	Baht
Retrieval	10,000
Repair	20,000
Vessel lost	66,000
Fishing vessel less than 10 metres length	
Retrieval	25,000
Repair	70,000
Vessel lost	200,000

Compensation for fishing gear loss

Loss of fishing gear may be compensated (at a relatively low rate (about 3,000 baht per case). This is extremely difficult to assess unless the gear is assumed to have been associated with the vessel. In this was the vessel and the gear operated are assumed to be lost together. Small scale artisanal gears may be reconstructed (such as fish and crab traps). Larger gears such as nets will require purchase.

The tsunami wave destroyed a significant amount of fixed gears, (such as bamboo stake traps ‘pong pang’) that are actually illegal. There is an opportunity at this stage to limit the re-establishment of illegal fixed gears. However, in cases where fishers have lost boats, they may start to use lower cost gears (which may be illegal) that do not require a boat as a coping strategy. This should be taken into account.

Compensation for aquaculture holdings

Information regarding loss from aquaculture holdings does not appear to have been announced (verify), however the document made available to the mission, that contains the dates of compensation also includes rates for aquaculture. Compensation is payable in the case of:

- Loss of fish stocks 1,400 baht per rai (for a total area not exceeding 5 rai)
- Loss of shrimp and crabs 3,800 baht per rai (for a total area not exceeding 5 rai)
- Cases of culture of fish in a cage, cement tanks or other (e.g. aquarium fish, frogs, soft-shelled turtle,) compensated at 150 baht per square metre of production upto an area not exceeding 80 square metres.

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Reported fishing vessel losses by Province (detailed list in annex)

Vessels that have been reported lost or damaged are 1,127 large vessels (over 10 metres length) and 3,402 vessels (below 10 metres length). A crude approximation can be made in the case of the small fishing vessels that there is one vessel per family (i.e. approximately 3,402 small-scale fishing households have been affected).

For larger vessels the same approximation may not necessarily be applied as owners may have more than one vessel, although there are long tail boats that have a length of 10 to 12 metres. In several of the large harbours larger trawlers were damaged as there were many vessels in port at the time the tsunami struck.

A total of 597 vessels have been reported as retrieved either by the DOF or the by the owners themselves.

The costs of damage to vessels are variable and have not yet been estimated. This is because the actual compensation will depend upon the extent of the damage that has yet to be determined.

Province	Areas of losses		Total Registered vessels		Vessels damaged/lost		Vessels retrieved	
			>10 m.	<10 m.	>10 m.	<10 m.	>10 m.	<10 m.
	Sub-district	Village	Large	Small	Large	Small	Large	Small
Ranong	7	22	587	1,408	191	297	13	27
Phangna	15	73	825	2,782	284	607	107	153
Phuket	8	81	574	676	476	636	157	41
Krabi	23	123	312	2669	147	775	1	44
Trang	12	51	626	2365	0	594	0	0
Satun	9	36	783	2172	29	493	5	49
Total	74	386	3,707	12,072	1,127	3,402	283	314

There is an important distinction between damage to vessels and actual loss (i.e. irreparable damage that requires replacement). In the case of replacement of the vessel, There may be issues of availability of vessels - the original wood that the vessels were constructed from may not be readily available and reconstruction of the original type of vessel may not be possible (or at least not quickly). Replacement with a fibreglass composite structure may not be useful or encounter some resistance from (if the design is not appropriate and due to the lightness of the vessels). Engines that power this design are typically diesel long tail engines these may be more favoured in place of 'modern' outboard engine (which run on petrol and may not be as robust or flexible as the original). There is a fibreglass version of the longtail boat that has been commissioned by an NGO working in Krabi province.

Tourist vessels (typically long tail fishing boats used for tourist purposes)

In the table above, numbers of vessels reported as lost or damaged for Phuket include 87 large tourist vessels and 76 small tourist vessels (converted fishing boats). These can be separated from actual fishing vessel losses. For other provinces all vessels reported are for fishery purposes.

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A separate list of tourism vessels is given in Annex 2 (typically small fishing boats that are used on day trips, carrying tourists to islands). The majority of these reported damaged or lost are in Krabi province (342 out of a total of 363). The total estimated damage (363 vessels) is 34 million Baht (average 94,000 baht per vessel – these are typically long tail boats).

A critical aspect of the tsunami impact in Thailand is the extent to which fisherfolk have left the fishery or reduced their dependence upon it, in favour of providing boat services to tourists. The tsunami has therefore had a double blow – in damaging the vessels that they would use for their livelihood as well as driving tourists away from these areas. Replacement or repair of these tourist vessels will not in the short term ensure that there are enough tourists to provide an income for these people. It might be expected therefore that a short term coping strategy will be to return to fishing, even though the income from this activity is far lower than that which is normally obtained from tourism.

An additional aspect of this is that families may be dependent upon tourism employment in a broader way such as servicing local hotels and the mobility of family members means that the impact will be felt over a wider area than that immediately damaged by the tsunami (e.g. women's employment in hotels).

Impact to fisheries infrastructure (e.g. harbours and jetty services)

A number of fishing harbours have incurred damage (the most significant being Ban Nam Kem). Reports are variable but it seems that there are : Ranong 8, Phangna 2 (or more) (Ban Nam Kem, Thap Lamu), Satun (Pak Bara) [this list is not complete].

Damage or loss of jetty services have not been reported as yet (e.g. fuel operations, ice-making and cold storage structures that are typically found at fish landing sites). Yet such land-based infrastructure will have been affected (in Ban Nam Kem – all services were completely destroyed, but this is an extreme example). Some of these facilities would be state owned or operated or possibly through cooperative type ventures. Many ventures would also be privately owned by entrepreneurs (i.e. not directly involved in fishery production).

An assessment would have to at last get a breakdown of the number of harbour sites that were directly impacted by the wave. There has been a great deal of minor damage in areas not in the actual path of the wave and this can be readily rectified and should not be a focus of intensive rehabilitation.

Harbour locations that have been severely affected should be verified with the Provincial fishery office.

Fish hatcheries

Few reports are available but a grouper hatchery in Sarasin Bridge Phuket was reported to have been damaged. The government stations are reported not to have incurred any significant damage.

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Fish cage culture operations

There are extensive reports of damage and loss to cultured fish operations in cages. Cage culture sites on the west Coast of Thailand are typically in the mouths of estuaries and seaward parts of delta and mangrove areas. These areas were exposed to the rapid rising waters and wave of the tsunami and their typically fragile construction resulted in the break up of some of the cages and loss or escape of the stocks.

Impacted fish cage culture operations

	Owners affected	Area of cages affected (m²)
Ranong	583	827,008
Meuang	288	260,070
Kapoe	139	69,309
Branch dist suk sam ran	156	497,629
Phangna		87,194
Takua Pa		12,726
Takua thung		17,973
Tai Meuang		9,351
Koh Yao		26,653
Kuraburi		26,653
Meuang		7,812
Phuket	315	45,172
Meuang	174	29,893
Krathu	4	0
Glang	137	15,279
Krabi	359	74,108
Meuang	40	24,174
Klong thom	102	5,669
Neua Klong	50	26,532
Ao Leuk	107	12,213
Koh Lanta	60	5,520
Trang	393	19,554
Kantang	67	10,850
SikAo	139	6,192
Palien	163	2,272
Branch dist Haad samran	24	240
Satun	960	70,140
Meuang	343	5,760
La Ngu	617	58,859
Thung Wah		
Total	2,610	1,123,176

In Phuket, Krabi, Satun, Ranong and Trang there are reportedly 2,610 owners affected with a reported cage area of over 1,035,982 square meters (approximately 41,439 cages at average size of 25 m²). Phangna province have also a large area of cages impacted (87,000 m²). It is not clear whether these cages have been completely destroyed, completely lost the stock or have lost some stock. The current government estimate of the losses from aquaculture cages is approximately US\$92 million (3,803,000 Baht)

The compensation package for cage farms is rather low compared to the price of the cage and value of the stock. The compensation for an average cage (25m²) would be 3,750 baht and the total compensation allowable (maximum 80 square metres is 12,000 baht). This can be compared with the following approximate data for the cost of a cage and the stock contained:

- Typical cost to build a cage is about 16,000 baht per cage (25 m²) [verify]

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- Cage size range 16 to 36 square metres each (4x4, 5 x5 and 6x6 metres are typical sizes) and owners typically have several cages.
- Fish are stocked at 10-20 kg of fish per square metre (typical cage loading about 100-200 kg [verify this]).
- Value of fish contained is variable (about 120-160 baht per kilo of sea bass and 250-300 baht for grouper).
- The approximate value of the stock (if fully stocked and at harvestable size) would be 10,000 – 20,000 (sea bass) and 20,000 to 40,000 for grouper per cage (25m²). [verify this]
- The ratio of grouper to sea bass farms is about 80:20 [verify this]

Shrimp hatchery impacts

Most shrimp hatcheries were not damaged in the Haad Rawai and Chalong bay area of Phuket (southern bay) but there are reports of damage to water intakes (under sand filters etc.) being blocked by tsunami sediment and physical disturbances.

There has been complete destruction of shrimp hatcheries in the Khao Lak area of Phangna province. Some figures (based on area) are provided by DOF but they are almost certainly not complete (the mission observed at least 22 hatcheries destroyed in the Khao Lak / Ban Nam Kem area alone), these were mainly medium scale operations but one very large hatchery was also completely destroyed. The apparent compensation level offered (150 baht per square metre up to a total of 80 metres) is very low relative to the actual investment made in construction and operation of a shrimp hatchery (most of the damaged hatcheries observed had an area (concrete tanks) well in excess of 150 square metres).

The loss of the hatcheries in Phangna will affect supplies of post-larvae to the Thai shrimp industry, however in terms of overall number of the nations hatcheries that are out of commission, this is still a limited percentage.

Shrimp farms

There have been few *reports* of damage to shrimp farm operations. This probably because there are relatively few farms on the west coast of Thailand (as compared with the Gulf of Thailand coast) and the fact that many farms are not in the immediate coastal strip. Those farms that have been damaged are located in the immediate vicinity of the shore on low lying land. Very few shrimp farm operators have reported losses or damage for compensation (this may be because the compensation level offered is very low (3,800 Baht per rai) and is therefore not worth the claim.

The figures presented by the Phuket fishery Rescue centre indicate a large number of farmers affected in Trang (1,910) and Satun (1,274) however the are of reported loss is minimal (a total of about 179 rai). It is worth verifying that shrimp farms were not significantly affected.

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Shellfish concessions

These are principally cockle beds and green mussels, although in Phuket, there is also oyster and land based abalone operations that may have suffered some damage. The rehabilitation of these sites is probably not a major equipment issues but related more to restocking or reseeded and the time taken to get a new harvest.

Preliminary recommendations for action:

Short term

- Targetting and ranking of impact (utilize DOF losses information by village, Provincial records of other damage, NGO reports).
- Separate in to severe, medium and minor impacts
- Needs assessment – FAO mission and ensure liaison with Provincial fisheries officers and NGO's active in fisheries sector and fishing villages
- Establish a plan for support to affected communities
- Ensure that support does not duplicate government support or adds value
- Equipment replacement as a short term response, longer term community organization in fishing communities may be possible.

Short/medium term

- Enable access to small scale grants facility for communities that have organized (with UNDP?) – get NGO groups to assist communities to access these funds.
- Damaged hatchery operations most likely cannot be assisted as these require infrastructural rehabilitation and stock replacement.
- Damaged cage culture operations may be assisted as the government compensation package may be too low .

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Annex 1 : Records of vessels and reported damaged/lost vessels⁶ for the 5 tsunami affected provinces (current 15.00 5th January 2005)

Province	District (Amphur)	Areas of losses		Registered vessels		Vessels damaged/lost		Vessels retrieved	
				>10 m.	<10 m.	>10 m.	<10 m.	>10 m.	<10 m.
		Sub-district	Village	Large	Small	Large	Small	Large	Small
Ranong		7	22	587	1,408	191	297	13	27
	Meuang	2	11	445	843	51	87	2	6
	Kapoe	2	7	57	351	47	98		
	Branch Dist. Suk Samran	3	4	85	214	93	112	11	
Phangna		15	73	825	2,782	284	607	107	153
	Takua Pa	4	11	231	213	81	57	51	17
	Takua Tung	2	13	68	714	0	45	0	1
	Tai Meuang	2	7	144	102	119	157	49	67
	Koh Yao	2	14	133	576	11	206	5	63
	Kuraburi	4	23	190	518	11	206	5	63
	Meuang	1	5	59	659	73	139	2	2
Phuket		8	81	574	676	476	636	157	41
	Meuang	6	42	422	411	381	426	157	39
	Krathu	2	11	27	11	22	31	0	0
	Tha Lang		28	125	254	73	179	0	2
Krabi		23	123	312	2669	147	775	1	44
	Meuang	6	34	167	674	7	169	1	0
	Klong Thom	5	19	26	364	0	7	0	20
	Neua Klong	4	18	44	830	0	160	0	24
	Ao Leuk	3	16	55	345	12	34	0	0
	Koh Lanta	5	36	20	456	128	405	0	0
Trang		12	51	626	2365	0	594	0	0
	Gantang	4	14	577	1019	0	375	0	0
	SikAo	3	12	31	476	0	84	0	0
	Palien	3	13	7	463	0	25	0	0
	Branch Dist. Haad Samran	2	12	11	407	0	110	0	0
Satun		9	36	783	2172	29	493	5	49
	Meuang	5	15	460	1165	0	142	0	19
	La Ngu	4	21	323	1007	18	313	5	30
	Thung Wah	3	10			11	38	0	0
Total		74	386	3,707	12,072	1,127	3,402	283	314

⁶ Comments : Phuket province numbers include 87 large tourist vessels and 76 small tourist vessels (converted fishing boats). These can be separated from actual fishing vessel losses. For other provinces all vessels are for fishery purposes

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Annex 2 – Impacts on aquaculture production (information is incomplete and liable to change)

Province	Amphur	Cage (m2)			Culture pond (rai)			Shellfish areas (rai)		
		Registered	Cases	Area (m2)	Registered	Cases	area lost	Registered	Cases	affected
Ranong			583	827,008						
	Meuang		288	260,070						
	Kapoe		139	69,309						
	Branch Dist. Suk Samran		156	497,629						
Phangna				87,194			60			
	Takua Pa			12,726			50			
	Takua Tung			17,973						
	Tai Meuang			9,351			4			
	Koh Yao			26,653			6			
	Kuraburi			26,653			6			
	Meuang			7,812						
Phuket		26,025	315	45,172	2,214	294	6	707	7	397
	Meuang	13,492	174	29,893	482.07	88	5	452	5	357
	Krathu	402	4		4.58	12				
	Tha Lang	12,131	137	15,279	1,727	194	1	255	2	40
Krabi		32,039	359	74,108	13,009	921	113	7,723		30
	Meuang	5,562	40	24,174	1,426	187	65	900		
	Klong Thom	8,827	102	5,669	2,073	250	5	1,500		
	Neua Klong	7,589	50	26,532	2,659	256				
	Ao Leuk	5,472	107	12,213	1,798	154	40	700		
	Koh Lanta	4,589	60	5,520	5,053	74	3	4,623		30
Trang		214,936	393	19,554	45,743	1,910				7
	Gantang	7,360	67	10,850	41,049	959				2
	SikAo	73,152	139	6,192	1,063	217				3
	Palien	132,800	163	2,272	2,277	521				2
	Branch Dist. Haad Samran	1,624	24	240	1,355	213				
Satun		34,360	960	70,140	1,393	1,274		8,909	17	-
	Meuang	15,488	343	5,760	880	467		8,909	17	
	La Ngu	18,872	617	58,859	512	807				
	Thung Wah			5,521						
Total		307,360	2,027	1,123,176	62,358	4,399	179	17,340	24	434

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Annex 3 - Table of reported losses/damage to tourist boats.

Province	District	Sub-district	Village	Vessels lost/damaged		
Krabi	Meuang			342	30,964,100	
				311	28,458,600	
	Meuang	Krabi yai		1	95,000	
	Meuang	Krabi noi	8	1	15,000	
	Meuang	Kao kram	5	1	60,000	
	Meuang	Yao tong	2	8	356,000	
	Meuang	Yao tong	3	1	60,000	
	Meuang	Yao tong	4	2	120,000	
	Meuang	Yao tong	6	2	75,000	
	Meuang	Klong prasong	1	12	700,000	
	Meuang	Pak nam		4	315,000	
	Meuang	Lai tai	2	1	145,000	
	Meuang	Lai tai	5	11	885,500	
	Meuang	Lai tai	6	17	1,071,000	
	Meuang	Ao nang	1	6	415,000	
	Meuang	Ao nang	2	16	2,787,800	
	Meuang	Ao nang	4	4	363,400	
	Meuang	Ao nang	5	2	192,000	
	Meuang	Ao nang	6	3	400,000	
	Meuang	Ao nang	7	69	6,873,200	
	Meuang	Ao nang	8	21	2,342,000	
	Meuang	Ao nang		3	266,000	
	Meuang	Ao nang	Ao nang long tail tourist boat coop		125	10,901,700
	Meuang	Nong talay	2	1	20,000	
		Koh lanta			5	400,000
	Koh lanta	Koh lanta yai	7	2	140,000	
	Koh lanta	Koh lanta yai	4	1	80,000	
	Koh lanta	Klong yang	2	2	180,000	
		Klong thom			4	220,000
	Klong thom	Hooa nam kAo	1	1	65,000	
	Klong thom	Klong pon	9	1	45,000	
	Klong thom	Klong pon	10	2	110,000	
		Ao leuk			6	460,000
Ao leuk	laem sak	2	2	130,000		
Ao leuk	laem sak	3	2	170,000		
Ao leuk	laem sak	5	1	80,000		
Ao leuk	Ao leuk	5	1	80,000		
	Neua Klong			16	1,425,500	
Neua Klong	daling son	3	5	395,000		
Neua Klong	daling son	5	4	525,000		
Neua Klong	Neua Klong	3	1	95,000		
Neua Klong	Klong kanan	3	1	90,000		
Neua Klong	sri bor yah	1	1	100,000		
Neua Klong	sri bor yah	2	2	210,000		
Neua Klong	sri bor yah	3	1	3,500		
Neua Klong	sri bor yah	8	1	7,000		
Phangna				19	2,874,000	
	Koh Yao			18	2,794,000	
Koh Yao	Koh Yaonoi	4	1	70,000		
Koh Yao	Koh Yaonoi	5	2	585,000		
Koh Yao	Koh Yaoyai	2	3	230,000		
Koh Yao	Koh Yaoyai	4	7	564,000		
Koh Yao	Phru nai	3	5	1,345,000		
	tai Meuang			1	80,000	
Tai Meuang	Sam sen	3	1	80,000		
Phuket				2	350,000	
	Meuang			1	150,000	
Meuang	Talad yai			1	150,000	
	Glang			1	200,000	
Glang	Thep kasetri	5		1	200,000	
				Number of boats	Cost of damage	
			Total	363	34,188,100	

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Annex 3

Tasks to be added to FAO consultant TOR.

- Contact CODI (for the outcome of the NGO meeting and the intended follow-up action. Summarize the report
- Contact NGO Coord , Wildlife Fund Thailand, YadFon and other NGO's active in the five provinces.
- Request access to the assessment information that they are currently developing. Summarize the important needs that have been determined.
- Cross check the NGO information with the Provincial information on affected areas and the DOF information on villages where losses to fisheries and aquaculture impacts have occurred.
- Look at this combined analysis and try and develop a ranked series of impacted villages that warrant support in the fisheries sector.
- Liaise with the Phuket Fishery Rescue Centre and share the information with them.
- Participate in the 17th January meeting to be arranged by CODI.

Contacts in fisheries in affected provinces

- Hassenai Kongkeo :Fisheries consultant to FAO on tsunami impact assessment in Thailand & advisor to NACA. (065445410)
- Khun Niwat : Coordinator of Phuket fisheries rescue Centre (076-391-515)
- Prulai Nootmorn: Chief of survey & analysis of aquatic resources and fisheries status. (076-391-138 to 40 ; mobile 01273-5837
afdec@phuket.ksc.co.th)
- Khun Vichien, Director of Phuket Fisheries Centre (01-3297215)

NGO contacts:

These are the contacts that we have in South Thailand:

- Mr Pakpoom (01-8026131) – He works for NGO Coord and is close to the Southern Fisherfolk Federation of Thailand
- Mr Wichosak – tel: 01-9564290 – He is the General Secretary of the fisherfolk Federation
- Mr Banjong – tel: 01-4795213 – He is the Director of the Southern Coastal Zone Project (he works closely with the Federation)

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- Andaman Sea Fisheries Development Center (AFDEC) 77 Sakdidej Road, Ao Kham, 83000 Phuket Director PAolo Montaldi Email: montaldi@loxinfo.co.th , a_montaldi@hotmail.com (+66 076 391138 +66 076 391140 Fax: +66 076 391139)

Fisheries

- Win Latt (consultant Ranong): (66-77) 830 417, (66) 01 737 0745 , 01 476 3945 aquabco@cscoms.com - could do assessment for southern Myanmar and also perhaps impacts on Burmese migrants in fisheries and shrimp culture in Ranong.
- Heiko Seilert (EU Charm Project Krabi) 01 909 2422 heiko_seilert@hotmail.com
- Jate Pimoljinda (Krabi/Phangna) work (66-7) 569 5149 to 51 mobile (66) 01 892-5706 jpafdec@phuket.ksc.co.th

Shrimp hatcheries / farming:

- Pornlerd Chanrathchakool (Bangkok/Phuket): 016440554
- Matthew Briggs (consultant - Phuket): 078083544
- David Garriques (CP Ltd. Bangkok/ Phuket):