

APPENDIX I

Water and Sanitation Needs Assessment

Introduction

The data and figures in this appendix are translated from documents gathered in visits to provincial, district and sub-district offices, as well as villages. The original documents can be made available on request.

We have included our survey checklists as a matter of completeness and consistency. Empty fields in our checklists imply that the question has been answered by documents from a government office or village.

Suk Samran District – Tsunami Statistics

Suk Samran District is divided into:

- 2 Sub-districts
- 15 villages

The District has two SAOs:

- Kampuan
- Naga

Kampuan Sub-district

Kampuan Sub-district is divided into 7 villages.
There are 1,179 families in total.

Population:

- 5,482 (2,854 male and 2,628 female)

Moo No.	Village Name	Affected Family
1	Talay Nok	40 families
2	Nua	309 families
3	Kampuan	264 families
4	Phu Khao Thong	266 families
5	Suk Sam Ran	133 families
6	Don Kloy	48 families
7	Hat Sai Khao	115 families

Naga Sub-district

Naga Sub-district is divided into 8 villages.
There are 1,175 families in total.

Population:

- 5,445. (2,756 male and 2,689 female)

Moo No.	Village Name	Affected Family
1	Bang Man	276 families
2	Nah Pru	244 families
3	Bang Gluey Nok	177 families
4	Khuan Sai Ngam	107 families
5	Fai Tah	160 families
6	Lem Now	29 families
7	Rai Nai	107 families
8	Thung Thua	75 families

- **Income:** Most people earn their living in agriculture and fisheries
- **Religion:** 80% Muslim 20% Buddhist
- **Utilities:** Every village has electricity.
- **Transportation:** Villages are connected by concrete and macadamized roads. The Sub-districts, Districts and Provinces are connected by the Sai Petch Gasem Road.

Affects and Damage of Tsunami

The tsunami hit the Andaman coast of Suk Samran District in Ranong Province on December 26, 2004 at 09.45 am. The wave washed up the coast for 1.8 kilometers and greatly affected people's lives and assets in the area. Most of the 95% of affected people were involved in the fishing industry.

The tsunami affected area is comprised of:

- 2 Sub-districts
- 13 Villages

Kampuan Sub-district

Moo No.	Village Name	Affected Family	Population
1	Talay Nok	40	260
2	Nua	309	1,369
3	Kampuan	264	1,233
4	Phu Khao Thong	119	405
5	Suk SamRan	133	536
6	Don Kloy	4	235
7	Hat Sai Khao	115	515

Naga Sub-district

Moo No.	Village Name	Affected Family	Population
1	Bang Man	276	1,420
2	Nah Pru	244	1,114
3	Bang Gluey Nok	177	934
4	Khuan Sai Ngam	107	444
5	Laem Now	29	166
6	Thung Thua	75	372
Total			
	13 Villages	1,813 Families	Population: 8,396

Injured and Deceased

- 152 deceased - 87 males / 65 females
- 5 missing
- 126 injured
- 55 orphaned

Agriculture

- 75 people injured
- 1,277 Rais damaged

Livestock

- 87 injured
- 138 cows / buffaloes
- 289 sheep / goats
- 1,027 chickens
- 655 ducks

Fisheries

- 1,072 injured
- 652 Raising Aquatic Animals
- 442 boats
- Fishery Equipment (fishnet, fish-trap, floating basket, boat engine)

Housing

- 130 houses destroyed
- 33 houses damaged

Total 163 houses damaged

Public Property Affected

- 12 Roads
- 11 Water Sheds
- 4 Government Owned Properties
- 1 Schools
- 1 Coastal Resources Research Center
- 1 Health Center
- 1 Border Patrol Police Camp of Ta Lay Nok Village
- 1 National Park of Laem Son (Prapat)
- 1 National Park of Laem Son (Ta Lay Nok)

Impact of Survivors on the Mental Health

People have been hesitant to return to their previous occupations, such as fishing and fish farms because of their new found fear of the ocean. The government has attempted to increase security and educate the villagers about the tsunami so that they may have a better understanding about what happened and why.

Post-Tsunami Mental Health Report

Ban Talay Nok , Moo 1, Kampuan, Suk Samran

General Information

- Ban Talay Nok, Moo 1 has 64 families
- The population is 233 separated by religion
- 99% Muslim and 1% Buddhist
- The school has 32 students and 3 teachers
- The Health Center (at Ban Talay Nok) has 2 staff members

Post-tsunami Information

Area	Houses	Houses Damaged	Deceased	Students	Staffs / Teachers	Properties
Talay Nok Moo 1	37	27	44	8	1/1	27

Ban Tub Nua, Moo 2, Kampuan, Suk Samran

General Information

- Ban Tub Nua, Moo 2 has 309 families
- The population is 1,369 separated by religion
- 95% Muslim and 5% Buddhist

Post-tsunami Information

Area	Houses	Houses Damaged	Deceased	Properties
Tub Nua Moo 2	252	50	27	50

Ban Hat Sai Khao, Moo 7, Kampuan, Suk Samran

General Information

- Moo 7, Hat Sai Khao has 111 families
- The population is 510 separated by religion
- 95% Muslim and 5% Buddhist

Post-tsunami Information

Area	Houses	Houses Damaged	Deceased	Properties
Hat Sai Khao Moo 7	67	71	9	67

Kampan SAO Tsunami Statistics

Last Updated by SAO: February 18, 2005

Damages

Houses and other property

Moo	Village Name	Families	Whole Houses	Partial Houses	Other Properties
1	Talay Nok	49	22	-	-
2	Tub Nua	278	69	-	35
3	Kampan	180	-	-	37
4	Phu KhaoThong	208	-	-	129/4*
5	Suk Samran	131	-	-	2
6	Don Gloy	46	-	-	12
7	Hat Sai Khao	118	54	18	37

Deaths

Moo	Village Name	Families	Deceased	Widowed	Orphaned
1	Talay Nok	49	35	-	10
2	Tub Nua	278	24	-	20
3	Kampan	180	16	-	6
4	Phu KhaoThong	208	9	-	10
5	Suk Samran	131	1	-	0
6	Don Gloy	46	0	-	0
7	Hat Sai Khao	118	12	-	4

Summary of Tsunami Victims - Kampuan, Suk Samran, Ranong

Moo	Village Name	Families	Whole house	Partial House	Other Properties	Deceased	Widowed	Orphaned
1	Talay Nok	49	22	2	24	23	4	8
2	Tub Nua	278	68	-	36	17	3	10
3	Kampuan	179	-	-	34	19	3	7
4	Phu KhaoThong	227	6	2	89	9	5	11
5	Suk Samran	131	-	-	1	-	-	-
6	Don Gloy	-	-	-	6	-	-	-
7	Hat Sai Khao	118	51	16	37	11	3	4
	Total	-	147	20	227	79	48	44

Moo	School Name	Students	Deceased	Villages Attending School	Both Parent Deceased	One Parent Deceased
1	Talay Nok	22	7	1	1	8
2	Tub Nua	361	5	2,3,4,5,7	2	7
3	Kampuan	302	5	2,3,4,7	-	6
4	Damrongsatwittaya	307	-	1-7	2	-
5	Ban Suk Samran	133	-	5,6	1	1
6	Suk Samran		-	1-7	-	-

Summary of Tsunami Victims - Kampuan, Suk Samran, Ranong

Kampuan

List	M.1 Talay Nok	M.2 Tub Nua	M.3 Kampuan	M.4 Tah Klang	M.5 Suk Samran	M.7 Hat Sai Khao
Families	49	278	179	227	131	118
Families / fishermen	45	72	70	193	10	90
Population	188	904	1,233	899	377	515
Deceased	41	30	18	9	-	92
Injured	12	50	10	8	-	15
Houses destroyed	28	58	-	11	-	51
Houses partially damaged	1	4	-	6	-	18
Boats lost	-	21	-	19	1	41
Boat partial damaged	-	-	-	44	-	15
Engine destroyed	-	21	-	18	1	33
Engine partial damaged	-	9	-	15	-	1
Floating fisheries	-	-	240	๗.553 ๓.97	-	๗.18 ๓.8

Summary of Tsunami- Affected Students - Kampuan, Suk Samran, Ranong

List	Talay Nok school	Phu Khao Thong School	Kampuan school	Damrongsatwittaya school	Suk Samran school
Students affected	-	-	-	-	-
Deceased	7	5	5	-	-
Village number	1	2,3,4,5,7	2,3,7	1-7	1-7
Death of both parents	1	2		2	1
Death of one parent	8	7	6	-	1

**D-TRAC Water and Sanitation Checklist
SUB-DISTRICT OFFICES**

Province: RanongDate: 25/05/2006Sub-District Office: SAO KampuanDistrict: Suk SamranName of Person Interviewed: Somwang SunprasertPhone: 077 844 198 mobile: 04 062 8526

Email:

Questions:

Do they have a printout of general statistics on their tsunami-affected sub-district?		
	Yes	No
	x	
If not, ask the following:		
A. Population Affected:		
• Number of families		
• Male/Female breakdown		
• Age breakdown	-	
• Affected villages		
• Number of deaths		
• Number of injuries		
• Number of missing persons	-	

B. Livelihoods Affected:	
• Fisheries (crab, shrimp, shellfish farms)	
• Boats	
• Agriculture (farming, crops affected)	
• Tourism	
• Other	
How has the sub-district been handling general long-term tsunami relief and redevelopment within their jurisdiction? Ex. Do they have recovery programs, projects?	
<p>Short term</p> <ul style="list-style-type: none"> - Initial delivery of the injured to hospital and moving of survivors to a local center - Contact with government and non-governmental organizations to provide relief packs, clothes, food and medicine - Financial assistance to each family of 3,000 baht for each death (total of 109 deaths) - Rescue assistance with finding bodies with equipment provided by some non-governmental organizations and the government - Support with hope and morale for victims and survivors - Reconstruction of houses - Assistance with replacing boats and engines lost in the tsunami - Coordination of boat and engine repairs - Provision of fishing equipment - Reconstruction of basic public utilities such as household water supplies - Coordination with non-governmental organizations regarding temporary housing for tsunami victims and survivors - Contact with Labour Department of Ranong to provide jobs for those affected by the tsunami <p>Middle term</p> <ul style="list-style-type: none"> - Financial support for victims - Rehabilitation of local community infrastructure, such as telephone systems, canals, ports and areas of tourism - Assistance with finding alternative occupations for those who no longer wish to be fishermen 	

- Improvement of landscape for tourism, such as clearing beaches

Long term (3 years)

- Promotion of aquaculture as an occupation
- Building of a Tsunami Warning System Tower at the center of SAO Kam Puan Sub-district
- Coordination of a 24 hour communication system in the risk area
- Management of existing water resources such as dredging canals and provision of new resources where needed
- Rehabilitation of damaged natural resources and environment
- Promotion of scholarships and support to orphans who would otherwise have no chance to study long term
- Assistance with recreation of old jobs and creation of new jobs related to the community environment
- Project to build a port at Moo.7 Ban Had Sai Kao
- Project to repair the port at Moo.2 Tap Nua
- Project to repair the port at Moo.4 Phu Khao Thong
- Project to dredge the canal at Moo.1 Talay Nok
- Project to dredge the canal at Pak Klong Kluay Moo.4 Phu Khao Thong
- Project to build a public hall at Moo.1 Talay Nok

What tsunami-affected areas are still in need of water and sanitation assistance:	Water	Sanitation
<ul style="list-style-type: none"> • Villages 	<p>Moo 5 Suk Samran - the village need a water system but they don't want to pay for the water because they already have a dam. They hold village meetings on the 5th of every month.</p> <p>Moo1 Talay Nok - have a dam but it leaks so the water volume is insufficient and not clean.</p> <p>Moo 4 - Water system project for Phu Khao Thong is ongoing. The water system at Tah Klang is not yet working and this is currently a problem as there is not</p>	

	<p>enough water from the dry season.</p> <p>SAO has garbage disposal problems as it is unable to burn the garbage because of polluting agricultural land.</p>	
<ul style="list-style-type: none"> Temporary camps 		
Continued... Needs:	Water	Sanitation
<ul style="list-style-type: none"> New permanent housing 	<p>Bangkok Bank currently building a large water system at Moo 7 Had Sai Kao costing 800,000 baht</p> <p>ARC Foundation are building a water system at Moo 2 Had Praphat costing 800,000 baht</p>	<p>-Had Sai Kao -Had Praphat have insufficient drainage systems</p>
<ul style="list-style-type: none"> Schools 		<ol style="list-style-type: none"> Kam Puan school needs more bathrooms Phu Khao Thong Moo 4 Talay Nok Suk Samran Damrongsatwittaya Moo 5
<ul style="list-style-type: none"> Preschools / Kindergarten 		
<ul style="list-style-type: none"> Health facilities 		

Do affected villages have water committees?	Yes	No
	X	
Who is the key contact for committee (ex. Village head)?		
Committee consists of representatives from: Moo 3 Kam Puan, Moo 4 Phu Khao Thong, Moo 5 Suk Samran who are responsible for taking care of the system and giving money to the SAO.		
Are village households required to pay monthly water tariffs? (ex. Does each household pay for metered water consumption on top of flat rates for well/borehole electricity?)		
Some households pay for their water through a meter per month. In Moo 3 Kam Puan, some households use well water and only pay for electricity to power a pump. But the water is not clean due to chemical pollution from insecticide use through local agriculture.		
How many children attend each affected school / preschool (remember – can be “affected” if children’s homes were lost, parents’ livelihoods affected, or one or both parents died in tsunami, etc)		
-		
How many toilets and sinks are in each affected school / preschool?		
-		
What other needs do these groups have that haven’t been addressed yet?		
Suk Samran Moo 5 - need help with sanitation issues from the municipal water system. The water comes from natural resources and in the dry season is not clean. Kam Puan Moo 3 – pumped water from well is used for human consumption but is not clean. The village had a municipal water system installed by The Public Relations Department which is no longer used. Kun Somwang is not sure if this is because the village has a problem with the water source, or because the villagers don’t want to pay every month.		
Does the sub-district office know of other aid organizations already working in the wat/san sector in their district?		

Yes
Aid organizations: names, projects, locations?
USAID - drainage system clean up in the market in Moo 3 Kam Puan. Public Relations Department – providing a water tank to hold 4000 litres. Bangkok Bank Moo 7 Had Sai Kao – building water system costing 800,000 baht. ARC Moo 2 Had Praphat – building water system costing 800,000 baht.
Is there standing water in the villages (i.e. puddles, pools of water)?
Moo 2 Had Praphat standing water in pools due to bad drainage Moo 3 Kam Puan standing water in the rainy season only and also due to blocked drains in the market Moo 7 Had Sai Kao standing water in pools due to bad drainage
Are stormwater drains kept clear in villages / schools / preschools?
Generally kept clear but some villages have problem only raining season. KlongKumphun Moo2, Nua, Moo 3, Kumphun, Moo5 Suksamran, Moo 6, Don Gloy, Moo7 Had Sai Khao
Do homes / school grounds, paths or roads experience flooding?
Not for long periods of time because of good natural drainage.
Is drainage water polluting existing surface/groundwater or causing erosion in villages, around schools?
Yes at Phu Khao Thong school – insufficient drainage of rainwater causes erosion to nearby roads.
Where does wastewater from villages / schools go and is it treated in any way?
Mainly straight to rivers and the ocean. Only 10% is treated from schools and health centers by using septic tanks.

**D-TRAC Water and Sanitation Checklist
VILLAGES**

Province: Ranong

Date: 25/05/2006

District / Sub-District: Kampuan, Suk Samran

Village Name and Number: Moo 4 Ban Tah Klang

Name of Person Interviewed: Munkasom Manod

Phone: 04- 061 4914

Other Contact Information:

Questions:

How did the tsunami affect your village? Were homes or fisheries destroyed?		
<ul style="list-style-type: none"> • Houses partially damaged • Fishing equipment lost • More than 20 deaths • Boats and engines damaged – assistance from We Love Thailand • Many people without a job • Habitat Foundation are rebuilding 46 houses in the village 		
What is your source of water?		
<ul style="list-style-type: none"> • Connecting pipe from Health Center costing 5 baht per unit. • Municipal water system is insufficient for the whole village. Everyone pays for the water but some who live further away from the source receive an irregular supply. • Water from the mountain dam is used for agriculture and household consumption. • Some families have well water. 		
How do you get water in the dry season?		
<p>1 barrel for household use costs 22 baht. To obtain free water from SAO, a truck sometimes has to be used at a cost of 200 baht for delivery.</p>		
Do you have a water committee?	Yes	No
	X	
Who is the committee's contact person? (Ask if we can speak to him/her.)		
<p>Village Committee: Head Villager is chief, 2 people are assistant chiefs, and another 5 village members.</p>		

SAO assist this village as they have no budget for repairs and maintenance.		
Are households required to pay monthly water tariffs (fees)?	Yes	No
	X	
If Yes, how do they pay? Ex. Each household pays for metered water consumption on top of flat rates for well/borehole electricity.		
Villagers pay per unit via a meter. Water is purchased in the dry season but the villagers do not have water storage tanks and they use rain water.		
Do you know how deep your well is?		
They dug a borehole in 1992 but the water was too salty to use and therefore there are no wells in the village.		
What is the well's water table?		
-		
How much deeper do you have to dig to reach water?		
-		
What do you need to improve the village or school's water system? Ex. – pipelines, water tanks, wells, boreholes, etc?		
<ul style="list-style-type: none"> - The villagers do not know how to fix the problem of insufficient and irregular water supply to the entire village. - They would like to be able to use the brackish water but are unsure if this is possible. - They need a water storage tank with a lid to prevent the infection of villagers with dengue fever. - There are 237 houses and a population of 700 people. There are only 7 water storage tanks and they only cost 800 baht each. 		
Which school do the children attend?		
Ban Phu Khao Thong has received a lot of help and the some students have received scholarships. Very satisfied with the new bathroom.		
How many students and teachers are at the local school?		
Teachers - estimated 8 Students - estimated 400 15 orphans		

How many toilets and sinks does the school currently have?
Where are the toilets located? Sinks located?
Is there standing water in the village? Ex. – puddles, pools of water
No. The water goes to the ocean naturally.
Are stormwater drains kept clear?
No.
Do homes, paths or roads experience flooding?
The part of the village closer to the ocean has no flooding but the part closer to the road does flood due to poor drainage.
Is drainage water polluting existing surface/groundwater or causing erosion?
No.
Where does wastewater go and is it treated in any way?
Into the ocean and some families has installed cement septic tanks underground.
Where does solid waste go? How is it managed?
Into the ocean and some families has installed cement septic tanks underground.
Does the village have access to incinerators or does it have a garbage pickup?
The part of the village close to road can use the SAO garbage pickup service at a cost of 30 baht per month. Some of the villagers who live closer to the ocean choose to burn their garbage, some throw into the ocean, and others pay for the SAO pickup.

**D-TRAC Water and Sanitation Checklist
VILLAGES**

Province: Ranong

Date: 30/05/2006

District / Sub-District: Suk Samran

Village Name and Number: Moo 1 Bang Man, Naga Sub-district

Name of Person Interviewed: Mhanman Hanjit, Assistant Head Villager

Phone: 077 822 024

Other Contact Information: --

Questions:

How did the tsunami affect your village? Were homes or fisheries destroyed?		
Fishing equipment was damaged such as floating fish nurseries.		
What is your source of water?		
Mountain dam – a problem during the dry season when there is no water there. ADRA provided 10 storage tanks to keep the water from the mountain.		
How do you get water in the dry season?		
From District Government delivery.		
Do you have a water committee?	Yes	No
	X	
Who is the committee's contact person? (Ask if we can speak to him/her.)		
SAO, Sareamhan Sutjit, Water Committee Chief		
Are households required to pay monthly water tariffs (fees)?	Yes	No
	X	
If Yes, how do they pay? Ex. Each household pays for metered water consumption on top of flat rates for well/borehole electricity.		
Charge per unit is 1 baht. The villagers responsible for the maintenance of all equipment to save money.		
Do you know how deep your well is?		
Some families have wells inside their property of about 9 meters deep and some families do not have a well. A long time ago, the village had a borehole from the District Public Health department, but the villagers had problems with payments of the electricity and the borehole fell into disuse.		

What is the well's water table?
How much deeper do you have to dig to reach water?
What do you need to improve the village or school's water system? Ex. – pipelines, water tanks, wells, boreholes, etc?
<p>This village has 2 canals that are useable but there is no budget for maintenance. There is a need to build a small dam 10 meters wide to take the water to a storage tank for use. Need for another 10 water tanks. Pipe needed to connect from the new dam to the storage tanks and then to the villagers. The villagers do not want a borehole because of the high cost of electricity every month.</p>
Which school do the children attend?
<p>Bang Mann school Kapur school Suk Samran school</p>
How many students and teachers are at the local school?
How many toilets and sinks does the school currently have?
Where are the toilets located? Sinks located?
Is there standing water in the village? Ex. – puddles, pools of water
No
Are stormwater drains kept clear?
Yes and drain to the ocean
Do homes, paths or roads experience flooding?
No.
Is drainage water polluting existing surface/groundwater or causing erosion?
No. The water drains naturally and does not cause erosion.
Where does wastewater go and is it treated in any way?
Septic tanks in each household.
Where does solid waste go? How is it managed?
Septic tanks in each household.

Does the village have access to incinerators or does it have a garbage pickup?

Some villagers burn their garbage, and some bury underground. SAO have prepared a truck to collect garbage but currently do not have anywhere to incinerate the waste.

APPENDIX II

Water and Sanitation Needs Assessment

Introduction

The data and figures in this appendix are translated from documents gathered in visits to provincial, district and sub-district offices, as well as villages. The original documents can be made available on request.

We have included our survey checklists as a matter of completeness and consistency. Empty fields in our checklists imply that the question has been answered by documents from a government office or village.

Kapoe District – Tsunami Statistics

Kapoe District:

- 5 sub-districts
 - 3 sub-districts affected
- 34 villages
 - 13 villages affected
- Population: 17,973
 - Female: 8,708
 - Male: 9,265

Muang Gluang Sub-district:

Moo	Village	Families	Population
1	Muang Gluang	3	12
2	Bang Ban	65	260
3	Sam Nak	111	444
4	Ao Kuey	75	300

Kapoe Sub-district:

Moo	Village	Families	Population
1	Dan	18	72
2	Huay Siad	1	4
5	Gong Si	3	12
7	Bang Pru Lang	1	4
8	Shi Me	25	100
10	Khok Chang	1	4

Bang Hin Sub-district:

Moo	Village	Families	Population
1	Cha Cree	15	60
2	Bang Hin	27	108
5	Klong Sai	3	12

Injuries and Deaths

Deaths:

- 7 deaths
 - 5 Females
 - 1 Male
 - 1 Foreigner

Missing:

- 78 people were missing right after tsunami
 - 77 were found
 - 1 still missing

Injured:

- 109 people

Farms

- 39 animal farms were affected

Fishing Industry

- 430 total cases
 - 177 fishing boats destroyed
 - Equipment

Houses

- 42 houses destroyed
- 46 houses partly damaged
- 50 wells damaged

**D-TRAC Water and Sanitation Checklist
DISTRICT OFFICES**

Province: Ranong

Date: 26/05/2006

District Office: Kapoe Office

Name of Person Interviewed: Sontaya Keawsri, Assistant District Officer

Phone: 07- 280 1955

Email: -

Questions:

	Yes	No
Do they have a printout of general statistics on their tsunami-affected district?	x	
If not, ask the following:		
A. Population Affected:		
• Number of families	348 families ,1,392 person	
• Male/Female breakdown		
• Age breakdown		

<ul style="list-style-type: none"> Affected sub-districts and villages 	Houses destroyed 42 Houses damaged 46 Wells damaged 50 Occupation fisherman Boats damaged Aquaculture
<ul style="list-style-type: none"> Number of deaths 	7 person Female 5 Male 1 Foreigner 1
<ul style="list-style-type: none"> Number of injuries 	109 people
<ul style="list-style-type: none"> Number of missing persons 	In the beginning 78 people found 77 people Still missing 1 person
B. Livelihoods Affected:	
<ul style="list-style-type: none"> Fisheries (crab, shrimp, shellfish farms) 	Fishing 430 cases Fishing boats 177 Equipment 253
<ul style="list-style-type: none"> Boats 	177 boats

<ul style="list-style-type: none"> • Agriculture (farming, crops affected) 	39 farm animals	
<ul style="list-style-type: none"> • Tourism 	Andaman Tree resort damaged Komain Villa partly damaged	
<ul style="list-style-type: none"> • Other 	Natural park damaged Health center partly damaged Bang Bane school partly damaged Road 15 road damaged Environment damaged	
How has the district been handling general long-term tsunami relief and redevelopment within their jurisdiction? Ex. Do they have recovery programs, projects?		
<p>Short term</p> <ul style="list-style-type: none"> • Assistance with equipment for occupation • Cost for investment 10,000 / person • Contact foundation etc. ADRA, Raks Thai , ARC for assistance and gave boats, engines, net • Clean up the well 50 well • Chief district support bag support life <p>Long term</p> <ul style="list-style-type: none"> • Promotion occupation Batik group at Bang Ben village • Promotion Shrimp paste one Tumbon on product (OTOP) 		
What tsunami-affected areas are still in need of water and sanitation assistance:	Water	Sanitation
<ul style="list-style-type: none"> • Villages 	Water system at Cha Cree school Ban Tah Yang Moo 3, Maung Klang, Kapoe the villagers have problem with water not enough in dry season and this villager fisherman have well but not deep	

• Temporary camps		
• New permanent housing	Complete Get too much help	Complete Get too much help
• Schools	<ul style="list-style-type: none"> • Cha Cree School Moo 1 Bang Hin have problems with water system dry season • Ban Samnak school Moo 3 Maung Glang this school when Tsunami come people leave here student about 400-500 students Bathroom not enough and damaged Now Kapur district got donate from Thai Red Cross make city water supply but still ongoing • Water resource from the mountain 	
• Preschools / Kindergarten		
• Health facilities		
Do affected villages have water committees?	Yes	No
		X
Who is the key contact for committee (ex. Village head)?		

<p>The law of government normally no committee if no water supply after get water supply committee take care about it and take money to SAO</p>		
<p>Are village households required to pay monthly water tariffs? (ex. Does each household pay for metered water consumption on top of flat rates for well/borehole electricity?)</p>		
<ul style="list-style-type: none"> • Pay water / month if metered water from city water supply • Pay for electricity if pump water from well • Ban Tah Yang Moo 3 free water the village have well but not enough not deep and the villager pay for electricity per month 		
<p>How many children attend each affected school (remember – can be “affected” if children’s homes were lost, parents’ livelihoods affected, or one or both parents died in tsunami, etc)</p>		
<p>How many toilets and sinks are in each affected school?</p>		
<p>What other needs do these groups have that haven’t been addressed yet?</p>		
<ul style="list-style-type: none"> • Water system for Moo 3 Ban Tah Yang • Bathroom for Ban Cha Cree School 		
<p>Does the district office know of other aid organizations already working in the wat/san sector in their district?</p>		
<ul style="list-style-type: none"> • Thai Red Cross • World Vision 		
<p>Aid organizations: names, projects, locations?</p>		
<ul style="list-style-type: none"> • Thai Red Cross water system at Moo 3 Ban Samnak, Moo 8 Ban Chi Mi ,Kapur subdistrict • World Vision support Tank at Moo 2 Ban Bang Bane ,Maung Glang sub-district 		
<p>Are ABDs or other government agencies (ex. _____)</p>	<p>Yes</p>	<p>No</p>

MENR, provincial authorities) working in wat/san sector in tsunami-affected districts?	X	
Govt. agencies: names, projects, locations?		
<ul style="list-style-type: none"> • District Government and SAO support water for the villager free when dry season • Department of water resource support high Tank Moo 2 Ban Bang Bane ,Muang Glang subdistrict • Thai Red Cross support water system Moo 2 Ban Bang Bane ,Muang Glang subdistrict • building water supply to Moo 4 Ban Muang Glang support water system from Department of public prosecution • Government support about water system because it is important . 		

**D-TRAC Water and Sanitation Checklist
SCHOOL**

Province: Ranong**Date:** 30/05/2006**Location:** Ban Cha Cree, Moo 1, Bang Hin, Kapoe**School Name:** Ban Cha Cree School**Name of Person Interviewed:** Hemawong Choosiri, Teacher and Villager**Phone:** 06 279 0270**Other Contact Information:** -**Questions:**

How did the tsunami affect the school? Were children's homes damaged or parents' livelihoods affected?		
Children's parents' occupations were affected. Their fishing boats, equipment and fisheries were damaged or destroyed.		
What is your source of water?		
Borehole with electric pump		
How do you get water in the dry season?		
<ul style="list-style-type: none"> ○ Receive delivery of water from SAO two times per week. ○ Normally water at school is enough, but the villagers stretch this supply by using the borehole pump located at the school when their mountain source is not enough. 		
Do you have a water committee?	Yes	No
		X
Who is the committee's contact person? (Ask if we can speak to him/her.)		
-		
Are households required to pay monthly water tariffs (fees)?	Yes	No
		X
If Yes, how do they pay? Ex. Each household pays for metered water consumption on top of flat rates for well/borehole electricity.		
Pay for the electricity that pumps the water		
Do you know how deep your well is?		
The current borehole is 32 meters deep, but since villagers are also using the school's water source, it is sometimes not enough		
What is the well's water table?		
15 meters		

How much deeper do you have to dig to reach water?
50 meters
What do you need to improve the village or school's water system? Ex. – pipelines, water tanks, wells, boreholes, etc?
<ul style="list-style-type: none"> ○ Dig new borehole located on school (government) property – this is the easiest solution in order to avoid land issues. ○ Cha Cree Village already has pipelines – need these lines to be connected to the newly-constructed borehole ○ Provide water filters ○ 4 large concrete water tanks are 40 years old – cracking, leaking, and falling apart. Will be knocked down in the near future—can easily be replaced. These tanks are identical to the ones we noticed at other schools.
Which school do the children attend?
<p>Ban Cha Cree School, Moo 1, Bang Hin, Kapoe</p> <p>Students are from:</p> <ul style="list-style-type: none"> ○ Ban Cha Cree, Moo 1, Bang Hin Sub-district, Kapoe ○ Moo 1, Naga Sub-district, Suk Samran District
How many students and teachers are at the local school?
<ul style="list-style-type: none"> ○ 132 students ○ 71 boys ○ 61 girls ○ 6 teachers
How many toilets and sinks does the school currently have?
<p>7 toilets in total:</p> <ul style="list-style-type: none"> ○ 5 are in working order, 2 have broken pipes ○ 1 sink with 4 taps (faucets) <p>There are two bathroom locations in the school:</p> <ul style="list-style-type: none"> ○ One side of the school has 3 toilets, but two are damaged from roots of a palm tree that are causing the pipes to break. The one toilet left is only used by the faculty. ○ The other side of school has 4 toilets, all in working order. These are for all 132 students. ○ Next to 4 working toilets is a urinal for younger boys <p>School can use 4 new bathrooms behind the preschool building so the young children don't have to walk from one side of school campus to the other to use</p>

the bathrooms. *See drawing
Where are the toilets located? Sinks located?
<ul style="list-style-type: none"> ○ Toilets are behind the main school buildings ○ Sinks are located centrally between the classrooms
Is there standing water in the village? Ex. – puddles, pools of water
No, water drains out to the ocean
Are stormwater drains kept clear?
Yes, drains are kept clear
Do homes, paths or roads experience flooding?
No
Is drainage water polluting existing surface/groundwater or causing erosion?
Water is draining properly and there is no erosion.
Where does wastewater go and is it treated in any way?
Wastewater goes to a well deep underground
Where does solid waste go? How is it managed?
Same as above
Does the village have access to incinerators or does it have a garbage pickup?
They have a well where they burn the garbage

**D-TRAC Water and Sanitation Checklist
VILLAGE**

Province: Ranong**Date:** 25/05/2006**Location:** Ban Kai Yan / Sam Nak, Moo 3, Muang Glang, Kapoe**Name of Person Interviewed:** Mean Chaecheon, Villager**Phone:** 077 843 040**Other Contact Information:** -**Questions:**

How did the tsunami affect your village? Were homes or fisheries destroyed?		
Some houses in the village were partially destroyed. Villagers' livelihoods were directly affected by the tsunami. Fishing equipment, engines, floating fisheries and over 100 fishing boats were damaged or destroyed.		
What is your source of water?		
One well		
How do you get water in the dry season?		
Villagers take their own trucks and 4 to 5 200-liter water containers to a retail establishment (like a gas station) to fill. Each truck pays 50 baht for the water, regardless of how many containers they fill.		
Do you have a water committee?	Yes	No
		X
Who is the committee's contact person? (Ask if we can speak to him/her.)		
-		
Are households required to pay monthly water tariffs (fees)?	Yes	No
	X	
If Yes, how do they pay? Ex. Each household pays for metered water consumption on top of flat rates for well/borehole electricity.		
Each family pays 20 baht per month to pay for the pump's electricity.		
Do you know how deep your well is?		
4 meters, but there is no water in dry season		
What is the well's water table?		
4 meters		
How much deeper do you have to dig to reach water?		

Cannot say. It depends how deep we must dig to get past brackish water to meet fresh water.
What do you need to improve the village or school's water system? Ex. – pipelines, water tanks, wells, boreholes, etc?
<ul style="list-style-type: none"> ○ Dig a deeper well ○ Water tank
Which school do the children attend?
Chonpattana School and Ban Sam Nak School (see D-TRAC interviews)
How many students and teachers are at the local school?
<ul style="list-style-type: none"> ○ Chonpattana School – 110+ students ○ Ban Sam Nak School – 400+ students
How many toilets and sinks does the school currently have?
Each school has facilities, but our village contact does not know how many toilets and sinks at each.
Where are the toilets located? Sinks located?
-
Is there standing water in the village? Ex. – puddles, pools of water
No water drains to the ocean.
Are stormwater drains kept clear?
Yes
Do homes, paths or roads experience flooding?
No
Is drainage water polluting existing surface/groundwater or causing erosion?
No, water in this village drains naturally out to the sea and there is no erosion
Where does wastewater go and is it treated in any way?
Wastewater is sent to a cement septic tank underground
Where does solid waste go? How is it managed?
Solid waste goes to a cement septic tank below the bathroom
Does the village have access to incinerators or does it have a garbage pickup?
Each family burns their own garbage.

Notes / Observations

The village well could easily be dug deeper and a water tank could be installed. It seems to be a simple solution that will be the answer to their water problems.

**D-TRAC Water and Sanitation Checklist
SCHOOL**

Province: Ranong

Date: 30/05/2006

School Name: Ban Sam Nak School

Location: Ban Sam Nak, Moo 3, Muang Glang, Kapoe

Name and Position of Person Interviewed: Juraiwan Manasuwan, Teacher

Phone: 077 843 344

Other Contact Information: --

Questions:

How many children attend the school? How many boys, girls, teachers? Ages?

Primary school has 430 students:

- 222 boys
- 208 girls
- 18 teachers
- 14 classrooms

How did the tsunami affect the school? Were children's homes damaged or parents' livelihoods affected?

Student homes were partially destroyed and their parents' livelihoods were affected, namely through the destruction of boats, fishing equipment, and floating fisheries.

What is your source of water?

- Pipes connect water from the mountain to the school
- The school has 8 cement tank water tanks but 3 are damaged

How do you get water in the dry season?

Water is delivered from the district government

Does the school pay for its water? If so, how?

- The school doesn't have a city water hydrant but it does have a borehole in which it pays the electricity for. Unfortunately, the water from the borehole isn't enough and silt from the hole has been getting into the water supply.

<ul style="list-style-type: none"> ○ At the time of interview, the Princess Sirinthorn Foundation was re-drilling the borehole.
Do you know how deep your well / borehole is?
<ul style="list-style-type: none"> ○ Borehole is 50 meters deep. ○ The water mixes with mud and silt when it is pumped out. There is a problem with the water being unclean; the school must wait two hours until its clear but they don't have a water filter, either.
What is the well's water table?
<ul style="list-style-type: none"> ○ Rainy season: 7 meters ○ Dry season: 15 meters
How much deeper do you have to dig to reach water?
Not sure, it depends on how deep fresh water is.
What do you need to improve the school's water system? Ex. – pipelines, water tanks, wells, boreholes, etc?
<ul style="list-style-type: none"> ○ Water Tanks ○ Need water tower to store delivered water that runs to the bathrooms. ○ 3 old, concrete rain water catchments need to be replaced ○ 8 more bathrooms
How many toilets and sinks does the school currently have?
<ul style="list-style-type: none"> ○ 12 bathrooms but 4 are unusable due to broken pipes and broken doors. ○ 3 sinks but 1 cannot be used because there is a problem with water system. (The sink used by preschool students is out of order when work is being done on the borehole.)
Where are the toilets located? Sinks located?
<p>Toilets are located behind the classrooms Sink are in front of the cafeteria as well as the classroom buildings</p>
Is there standing water in the village? Ex. – puddles, pools of water
Some of the school campus lies at the bottom of an incline from the main road. There are classroom buildings at the bottom, and after it rains, standing water accumulates, flooding some school buildings.
Are stormwater drains kept clear?
There are no stormwater drains; when it rains the water flows down the hill and sometimes floods the bottom floor of the classroom building.
Do buildings, paths or roads experience flooding?
Yes, just after it rains the dirt paths have puddles and there's flooding around the classroom buildings at the bottom of the hill.
Is drainage water polluting existing surface/groundwater or causing erosion?
The school dug its own shallow drainage ditch / canal for when it rains very hard. Since it was only dug out of the earth (without making it a concrete, permanent

system), the ditch fills in with dirt when it rains heavily and fails to work properly.
Where does wastewater go and is it treated in any way?
Cement septic tank
Where does solid waste go? How is it managed?
Cement septic tank building with bathroom
Does the school have access to incinerators or does it have a garbage pickup?
The school burns its garbage in a well. SAO's truck doesn't pick up the school's waste.

Notes / Observations
Although it wasn't requested by the school, it appeared to us that the school could use a proper drainage system to prevent future flooding and erosion.

D-TRAC Water and Sanitation Checklist SCHOOL

Province: Ranong

Date: 30/05/2006

School Name: Chonpattana School

Location: Ban Shi Me, Moo 8, Kapoe, Kapoe

Name of Person Interviewed: Suchira Jatturong

Phone: office: 077 891 191, mobile: 06 686 7847

Other Contact Information: -

Questions:

How many children attend the school? How many boys, girls, teachers? Ages?
<p><u>Primary school has:</u></p> <ul style="list-style-type: none"> <input type="radio"/> 109 students <input type="radio"/> 26 preschool students <input type="radio"/> 45 boys <input type="radio"/> 64 girls <input type="radio"/> 6 teachers
How did the tsunami affect the school? Were children's homes damaged or parents' livelihoods destroyed?
<p>Parent's livelihoods were destroyed or directly affected, namely through the destruction of boats, fishing equipment, and floating fisheries.</p>
What is your source of water?
<ul style="list-style-type: none"> <input type="radio"/> Current water source is SAO in the dry season and PVC pipes from the nearby mountain in rainy season (gravity-fed system). <input type="radio"/> Waiting for the Thai Red Cross to finish building a water system for Kapoe sub-district.
How do you get water in the dry season?
<ul style="list-style-type: none"> <input type="radio"/> Water is delivered by SAO <input type="radio"/> Every dry season, students from Peachaburi University camp at the school and hold activities for the villagers to teach them about protecting natural resources and water shortages in the dry season.
Do you know how deep your well / borehole is?
<ul style="list-style-type: none"> <input type="radio"/> The borehole is 40 meters (with pump and filter) but can't be used because there's lead and rust in the water and the pump is broken. The school principal said that the water is so bad that even with a filter, it isn't usable. <input type="radio"/> The school is currently using a gravity-fed water system from the nearby

mountain in the rainy season.
What is the well's water table?
-
How much deeper do you have to dig to reach water?
-
How many toilets and sinks does the school currently have?
6 toilets: <ul style="list-style-type: none"> ○ 2 are broken (pipes, doors broken) ○ 2 are very old (30+ years old) 1 Sink with 4 taps (faucets) → school can use an additional sink with 4 taps
Where are the toilets located? Sinks located?
<ul style="list-style-type: none"> ○ Toilets are located directly behind the classroom ○ Sinks are close to the cafeteria
Is there standing water on school grounds? Ex. – puddles, pools of water
No
Are stormwater drains kept clear?
The school doesn't have stormwater drains because it sits on top of a hill; the rainwater naturally drains down the hill and away from the school
Do buildings, paths or roads experience flooding?
No, but sometimes the field in front of the school experiences minor flooding
Is drainage water polluting existing surface/groundwater or causing erosion?
Drainage water does cause a bit of soil erosion in the rainy season, namely in front of the school around the field and parking area.
Where does wastewater go and is it treated in any way?
Wastewater from toilets goes deep underground
Where does solid waste go? How is it managed?
Same as above
Does the school have access to incinerators or does it have a garbage pickup?
There are a few ways the school takes care of its waste: <ul style="list-style-type: none"> ○ SAO takes garbage and either burns it or recycles ○ School burns its garbage in an old concrete well
What do you need to improve the school's water system? Ex. – pipelines, water tanks, wells, boreholes, etc?
<ul style="list-style-type: none"> ○ 2 existing bathrooms need to be fixed and the school can definitely use more toilets; a total of 8 bathrooms would be ideal ○ The school has five concrete rainwater catchments behind the classroom buildings; only 1 works, the rest are in disrepair → these can be replaced and provide the school with an excellent water source in the rainy season ○ 1 more sink with 4 faucets

Notes / Observations

The school is looking for a volunteer English Teacher.

Two water tanks located near the school cafeteria were donated by World Vision.

**D-TRAC Water and Sanitation Checklist
VILLAGES**

Province: Ranong

Date: 25/05/2006

District / Sub-District: Maung Glang / Kapoe

Village Name and Number: Ban Tah Yang Moo 3

Name of Person Interviewed: Mean Chaecheon

Phone: 077- 843 040

Other Contact Information:

Questions:

How did the tsunami affect your village? Were homes or fisheries destroyed?		
Affected about Occupation Fishing boat and equipment damaged for example: nets and engines Floating fish pens Damaged houses		
What is your source of water?		
1 well		
How do you get water in the dry season?		
Buy some water 50 baht per 1 truck (take truck to delivery) if somebody doesn't have a truck need to borrow from someone		
Do you have a water committee?	Yes	No
		X
Who is the committee's contact person? (Ask if we can speak to him/her.)		
Are households required to pay monthly water tariffs (fees)?	Yes	No
	X	
If Yes, how do they pay? Ex. Each household pays for metered water consumption on top of flat rates for well/borehole electricity.		
Pay for electricity pumping water each family 20 baht estimate 70 family 240 people the villager collecting money for bought a pump and outside the village Thai Red Cross support High tank and city water but in this village can't not use it in this moment the villager use water from well 4 meters and water not enough		
Do you know how deep your well is?		

4 meters but when dry season no water
What is the well's water table?
4 meters
How much deeper do you have to dig to reach water?
Can't say it depend to fresh water how deep if you dig it and met brackish water need to dig it more until see fresh water
What do you need to improve the village or school's water system? Ex. – pipelines, water tanks, wells, boreholes, etc?
Dig well more deep Water tank
Which school do the children attend?
How many students and teachers are at the local school?
How many toilets and sinks does the school currently have?
Where are the toilets located? Sinks located?
Is there standing water in the village? Ex. – puddles, pools of water
No, Water goes to the ocean
Are stormwater drains kept clear?
Yes .
Do homes, paths or roads experience flooding?
No
Is drainage water polluting existing surface/groundwater or causing erosion?
No, this village has no drains but water kept clear by natural and no erosion
Where does wastewater go and is it treated in any way?
Cement septic in the bathroom and wastewater underground
Where does solid waste go? How is it managed?
Cement septic in the bathroom
Does the village have access to incinerators or does it have a garbage pickup?

Each family burn by themselves

A P P E N D I X III

Water and Sanitation Needs Assessment

Introduction

The data and figures in this appendix are translated from documents gathered in visits to provincial, district and sub-district offices, as well as villages. The original documents can be made available on request.

We have included our survey checklists as a matter of completeness and consistency. Empty fields in our checklists imply that the question has been answered by documents from a government office or village.

Muang District – Tsunami Statistics

Last Updated by SAO: February 22, 2005

Damaged Area - 4 Sub-districts 17 Villages

Sub-district	Moo
Koh PaYam	1,2
Bak Nam	1,2,4,6
Ngao	3,4,5
Rad Cha Grud	1,2,3,4,5,6,7,8

Residents	Population	Families
Suffered	2,903	713
Affected	8,352	1,796

Lives

- Deaths -
- Injuries 11
 - Injured somewhere else but received care at the Ranong Hospital
- Missing 2
 - There were originally 4 missing
 - 2 found
 - Other 2 are still missing in Phang Nga and Krabi Provinces

Houses	Amount	Cost
Damaged Houses	32	746,000 Baht
Destroyed Houses	35	1,5600,000

Fishing Industry

Sector	Amount Damaged	Costs
Fish, Shrimp, Shellfish Farms	478	6,708,910
Tourism and Fishing Boats	189	4,248,800
Fishing Equipment	110	1,336,390
Total	384	12,294,100

Contact Information for Village Heads

Koh Payam Sub-district

Moo	Village Name	Contact person	Phone number
1	Baan Koh Payam	Mr.Somnuk Gimnigon (Chief of Subdistrict)	06 281 7625
2	Baan Koh Chang	Mr.Pirom Panmanee	07 783 3078

Haad Som Pan Sub-district

Moo	Village Name	Contact person	Phone number
1	Baan Thung Kah	Mr.Tawee Lowwittaya	09 022 4459
2	Baan Bang Sang Dee	Mr.Pramot Pahnood	01 084 0564
3	Baan Haad Som Pan	Mr.Tanapat Narinrak (Chief of Subdistrict)	09 473 1161

Sai Dang Sub-district

Moo	Village Name	Contact person	Phone number
1	Baan Sai Dang	Mr.Chanick Piranon	07 896 9909
2	Baan Hin Dad	Mr.Somdet Pattong (Chief of Subdistrict)	06 277 3650
3	Baan Nam Dok	Mr.Chorb Warasing	
4	Baan Bang Si Kim	Mr.Somsong Janpeng	077 847 7029

Bang Non Sub-district

Moo	Village Name	Contact person	Phone number
1	Baan Bang Non Nai	Mr.Surapon Pethcharat (Chief of Subdistrict)	06 278 9482
2	Baan Khao Prix Thai	Mr.Prapard Kotchasing	01 125 5321
3	Baan Bang Non Nok	Mr.Rawadee Sakrak	01 087 5508
4	Baan Lumm Tharn	Mr.Piboon Poonsukkhopiban	06 266 1574

Ngao Sub-district

Moo	Village Name	Contact person	Phone number
1	Baan Thung Ngao	Mr.Sangad Sawatnan	07 882 0125
2	Baan Ngao	Mr.Krit Tajow	06 281 7091
3	Baan Tah Chang	Mr.Surat Panchang (Chief of Subdistrict)	01 268 0857
4	Baan Lang	Mr.Wanchai Promnoi	09 587 6875
5	Baan Haad Sai Dom	Mr.Widet Prasert	01 363 4641

Bang Rin Sub-district

Moo	Village Name	Contact person	Phone number
1	Baan Bang Klang	Mr.Jerawat Sangsua	01 326 5603
2	Baan Bang Rin	Mr.Yanyong Chueynarong	06 272 1544
3	Baan Porn Rang	Mr.Udom Kaodee	07 784 8379
4	Baan Ranong Pattana	Mr.Lek Gongassa	01 892 5585
5	Baan Tah Pae	Mr.Panya (Chief of Subdistrict)	09 288 0708
6	Baan Mittapab	Mr.Suksan Nontigomon	01 970 1763

Pak Nam Sub-district

Moo	Village Name	Contact person	Phone number
1	Baan Sapan Pla	Mr.Jaroon Korsantikul (Chief of Subdistrict)	01 737 2683
2	Baan Koh Kon Dee	Mr.Narongdet Promkao	07 279 9304
3	Baan Hin Chang	Mr.Nikom Jullakat	01 895 8386
4	Baan Koh Sin Hai	Mr.Muck Dakrut	07 782 9034
5	Baan Khao Nang Hong	Mr.Saditpong Dontayapong	09 729 3884
6	Baan Koh Lao	Mr.Sommai Natsangkaew	09 875 8186

Rath Cha Krud Sub-district

Moo	Village Name	Contact person	Phone number
1	Baan La ong	Mr.Anan Romyen (Chief of Subdistrict)	09 648 2153
2	Baan Lang	Mr.Manop Sehpang	07 281 0488
3	Baan Rath Cha Krud	Mr.Songchai Tongkhan	01 270 5752
4	Baan Huay Nam Sai	Mr.Sathian Niyom	01 968 5856
5	Baan Nok Ngang	Mr.Prapid Sappasian	
6	Baan Klong Kong	Mr.Supanimit Bunkaew	
7	Baan Huay Pling	Mr.Mardsa Marnnom	07 375 520
8	Baan Ka Chud Pai	Ms.Sahleefah	09 729 7837

**D-TRAC Water and Sanitation Checklist
SCHOOL**

Province: Ranong

Date: 25/05/2006

School Name: Bang Glang School

Location: Bang Glang, Moo 1, Bang Rin, Muang

Name of Person Interviewed: Khun Wisit Janrungratsame, Director

Phone: 06 279 9776

Other Contact Information: --

Questions:

How many children attend the school? How many boys, girls, teachers? Ages?
92 primary school students: <ul style="list-style-type: none"> ○ 45 boys ○ 47 girls ○ 6 teachers ○ 60 migrants and 1 Burmese teacher
How did the tsunami affect your school? Were children's homes damaged or parents' livelihoods affected?
The school was indirectly affected by the tsunami. Students' parents have no jobs or low salaries. Some families have only one breadwinner.
What is your source of water?
A well that is 10-meters deep. The school must pay for the pump's electricity. In the dry season the well doesn't produce enough water.
How do you get water in the dry season?
<ul style="list-style-type: none"> ○ SAO and PAO deliver water to the school. ○ The school buys drinking water for students.
Does the school pay for its water? If so, how?
It pays a monthly electric bill for the well pump.
Do you know how deep your well is?
10-12 meters
What is the well's water table?
7-8 meters in the rainy season and no water in dry season.
How much deeper do you have to dig to reach water?
15 meters
What do you need to improve the school's water system? Ex. – pipelines, water tanks, wells, boreholes, etc?
<ul style="list-style-type: none"> ○ School needs to sink a borehole because the well does not get enough water and the pump is not efficient. ○ Will need pump and filter for the borehole.

<ul style="list-style-type: none"> ○ A pipeline is needed to link the water storage tank to the bathroom and cafeteria. The existing one is damaged from long-term use. ○ An additional water storage tank needed; the existing tank is very old.
How many toilets and sinks does the school currently have?
<ul style="list-style-type: none"> ○ There are 4 old existing bathrooms and last year 3 more bathrooms were provided by World Vision and the Jesuit Refugee Service. ○ One sink with 4 taps. ○ 4 more bathrooms are needed.
Where are the toilets located? Sinks located?
Behind the classrooms
Is there standing water on the school campus? Ex. – puddles, pools of water
Yes, however only during the rainy season. Soon after the rain stops, the water drains to the ocean.
Are stormwater drains kept clear?
Yes
Do school buildings, paths or roads experience flooding?
Yes, after it rains but the water drains to the ocean very quickly.
Is drainage water polluting existing surface/groundwater or causing erosion?
Yes. It is causing some erosion at the playground area.
Where does wastewater go and is it treated in any way?
The school has a pipe that routes water to the main road's water system.
Where does solid waste go? How is it managed?
Solid waste goes to a septic tank below the government-built bathrooms.
Does the school have access to incinerators or does it have a garbage pickup?
The students put garbage in bins and then SAO collects and burns it.

A P P E N D I X I V

Water and Sanitation Needs Assessment

Introduction

The data and figures in this appendix are translated from documents gathered in visits to provincial, district and sub-district offices, as well as villages. The original documents can be made available on request.

We have included our survey checklists as a matter of completeness and consistency. Empty fields in our checklists imply that the question has been answered by documents from a government office or village.

Thai Red Cross Tsunami Recovery Assistance Report - Ranong Province

Last Updated by SAO: 15 May, 2006

Tsunami-affected area, Ranong Province:

- 3 districts
- 10 Sub-districts
- 47 Villages
- 1,500 families
- 5,942 people:
 - 161 deaths: 155 Thai, 6 foreigners
 - 407 injuries: 374 Thai, 33 foreigners
 - 6 missing

Property Damage:

- 111 houses partially damaged
- 335 houses damaged
- 224 houses destroyed
- Damage valued at 35.07 million baht

Government Property:

- 5 schools – damage valued at 11,855,421 baht
- 2 health centers – damage valued at 6,803,105 baht
- Laem Son National Park – damage valued at 37.9 million baht
- Coastal Research Station – damage valued at 25 million baht

Fisheries:

- 840 boats damaged – loss valued at 33.8 million baht
- Aquaculture (shrimp, fish, shellfish farms damaged or destroyed) – 1,337 cases – loss valued at 182.7 million baht
- Fishing equipment destroyed – 97 cases – loss valued at 1.18 million baht
- 25 Dutch fishing boats damaged or destroyed – loss valued at 2.71 million
- 14 tourism boats damaged or destroyed

Agriculture:

- Total loss valued at 643,996.50 baht
- Total area affected – 1,565.13 Rai (1 Rai = 1,600 sq. meters)
- 147 cases – farms or sections of land damaged or destroyed

Livestock:

- Total loss valued at 3,486,000 baht
- Area affected - 1,565.13 Rai
- Cows / buffalo lost – 169
- Goats / sheep – 416
- Poultry – 2,380

Infrastructure:

- 10 bridges affected
- 8 concrete bridges damaged – valued at 7,689,000 baht
- 21 roads affected – valued at 400,000 baht
- 27 boat piers damaged – 9,247,000 baht

Other damages:

- 1 dam – valued at 520,000 baht
- 3 protective walls – valued at 4,894,000 baht
- 1 water supply – valued at 350,000 baht
- Water-front pavilion – valued at 120,000 baht
- Muslim building – valued at 300,000 baht
- Hau Tong boat with engine – valued at 600,000 baht

Schools in Need of Water and Sanitation Assistance

- Koh Sin Hai School, Moo 4, Bak Nam Sub-district, Muang
 - 325 students
 - 13 teachers
 - 11 rooms
 - 30 students from Koh Ta Kut take 20 minute boat journey to study at Koh Sin Hai School
 - Contact: Chooli Ponsit, office phone: 077 829 034, mobile: 01 125 1424
- Ban Had Sai Dam, Muang District
 - 55 students
 - Contact: Sanchad Jinpat, office phone: 077 880 019, mobile: 04 053 9408
- Ban Talay Nok, Moo 1, Kampuan, Suk Samran
 - Contact: Supawadee Nakwichian, office phone: 077 829 203, mobile: 09 970 1097

Contact: Wiwat Wongtakun, Ranong School System
office phone: 077 84 8411, mobile: 01 084 1289

School Water Needs

1. Standard tanks
2. Pumps
3. Wells
4. Pipes throughout schools
5. Filters

Villages Requesting Water Assistance:**Ranong Thai Red Cross provided this information to the French Red Cross May 16, 2006**

- Ban Bang Man, Moo 1, Naga, Suk Samran
- Ban Na Pru, Moo 2, Naga, Suk Samran
- Ban Bang Kluay Nok, Moo 3, Naga, Suk Samran
- Ban Nai Rai / Kuan Sai Ngam, Moo 4, Naga, Suk Samran
- Ban Fai Tah, Moo 5, Naga, Suk Samran

Contact: Palad Amphur, Suphut Khumsompan – phone: 09 873 1385

**The Details for Determining Toilet Construction
Thai / American Red Cross for Schools in the Ranong Provincial Education Office 2006**

No	School Name	Location	Tel.	Director	Mobile	Type	Amount of			Toilet Am. '06			Type of The Requested Toilets				Total Cost	
							Cl	Te	St	SD	IP	N	Type	No	Cost	St		Cost
1	Baan Song Pee Nong	Village 1, Mamoo Subdistrict	077-846271	Viratch Promlit	07-266-2692	Preschool Primary school	8	9	124	8	0	8	604/45	1/4	247,000	4	8,000	255,000
2	Baan Klong Khor	Village 6, Ratchkood Subdistrict	077-828043	Kahda Sangpan	01-030 4709	Preschool Primary school	8	6	87	8	1	7	604/45	1/4	247,000	4	8,000	255,000
3	Thai Rat Wittaya 67 (Baan Na Hu)	Village 2 Nakah Subdistrict	077-828027	Thawat Juntanu	01-081 8767	Preschool Secondary school	15	11	431	15	8	7	604/45	1/4	247,000	4	8,000	255,000
4	Koh Sin Hai	Village 4, Bak Nam Subdistrict	077-829934 -5	Chulee Ponlasit	09-939 9537	Nursery-Secondary school	11	8	325	11	4	7	604/45	1/4		4	8,000	309,000
5	Bak Jun Wittaya	Bak Jun Subdistrict Kraburi district	077-846304	Bunkau Limskul	09-874 8033	Primary-High School	12	14	426	12	6	6	604/45	1/4	247,000	4	8,000	255,000
6	Baan Bang Rin	Village 2, Bang Rin Subdistrict	077-821460	Surahun Tianpai	01-273 7409	Preschool - Primary school	8	12	212	8	3	5	604/45	1/4	247,000	4	8,000	255,000
7	Baan Tah Chang	Village 3, How Subdistrict	077-811755	Niporn Petch kong	01-892 3230	Preschool - Primary school	8	11	306	8	4	4	604/45	1/4	247,000	4	8,000	255,000
8	Baan Hin Chang	Village 3, Bak Nam Subdistrict	-	Talerngsak Joktom	01-978 8970	Preschool-Secondary school	12	17	383	12	8	4	604/45	1/4	247,000	4	8,000	255,000
9	Baan Bang Klang	Village 1, Bang Rin Subdistrict	077-821541	Wisit Junrung-Rutsmee	06-279 9776	Preschool-Primary school	8	6	92	8	4	4	604/45	1/4	247,000	4	8,000	255,000
10	Baan Khajudpai	Village 8, Ratchkood	077-824205	Chavana Komkra	01-370 6237	Preschool - Secondary school	10	14	343	11	7	4	604/45	1/4	247,000	4	8,000	255,000
11	Baan Bang Hin	Village 2, Bang Hin Subdistrict	077-828037	Suleela Juntranu	01-895 3459	Preschool - Secondary school	18	16	563	18	14	4	604/45	1/4	247,000	4	8,000	255,000
12	Baan Nok Ngang	Village 5, Ratchkood Subdistrict	077-828017	SomponChauy songmuang	01-891 2597	Preschool - Secondary school	11	18	399	11	8	3	604/45	1/4	247,000	4	8,000	255,000
13	Baan Som Nuk	Village 3, Muang Kluang Subdistrict	077-843344	Sittichai Rakchoo	09-589 7173	Preschool - Secondary school	15	15	428	15	12	3	604/45	1/4	247,000	4	8,000	255,000
14	Baan Nah	Village 2, Baan Nah Subdistrict	077-890060	Smam Maneerat	06-596 4100	Preschool - Secondary school	11	11	302	11	8	3	604/45	1/4	247,000	4	8,000	255,000

15	Baan Bang Khun Peng	Village 2, Bang Pra Nua Subdistrict	077-899206	Urai Tim Po	01-894 4842	Preschool - Secondary school	11	12	215	11	8	3	604/45	1/4	247,000	4	8,000	255,000
16	Baan Plai Klong	Village 1, Nam Juad Subdistrict	077-891596	Sunun Taolek	-	Preschool - Secondary school	8	7	102	8	5	3	604/45	1/4	247,000	4	8,000	255,000
17	Thai Rat Wittaya 97 (Baan Bang Bon)	Village 5, Lam Laing Subdistrict	077-828034	Ponted Thepsit	01-927 8218	Preschool - Secondary school	15	8	514	15	12	3	604/45	1/4	247,000	4	8,000	255,000
18	Wat Suwan Keeree	Village 4, Bak Jun Subdistrict	077-846299	Prasert Poori- Sirikul	01-080 7392	Preschool - Primary school	8	12	234	8	5	3	604/45	1/4	247,000	4	8,000	255,000
19	Baan Had Jig	Village 5, Bak Jun	-	Manoot Aruncho-ok	07-269 8046	Preschool - Secondary school	12	13	356	12	10	2	604/45	1/4	247,000	4	8,000	255,000
20	Raviratbumrung	Village 5, Bang Pra Nua Subdistrict	077-880025	Prayot Auttakit-Jareern	09-876 3436	Preschool - Secondary school	11	14	272	11	9	2	604/45	1/4	247,000	4	8,000	255,000
21	Aek Sin Ratpattana	Village 2, Bang Non Subdistrict	077-821549	Surapun lawpoo	09-289 8090	Preschool - Primary school	8	9	132	8	7	1	604/45	1/4	247,000	4	8,000	255,000
22	Wat Hadsompan	Village 3, Hadsompan Subdistrict	077-821170	Veerapo-ng Mahapo	01-272 0892	Preschool - Secondary school	11	16	302	11	10	1	604/45	1/4	247,000	4	8,000	255,000

Details for Determining the need for Water Tank construction of Thai – American Red Cross

No.	School Name	Location	Tel.	Director	Mobile	Type	Amount of			Toilet Am. '06			Request List		
							Cl	Te	St	SD	IP	N	Type	Am.	Cost
1	Baan Had Jig	Village 5, Bak Jun	-	Manoot Aruncho-ok	07-269 8046	Preschool-Secondary school	12	13	356	1	0	1	Water Tank 9/9	1	230,000
2	Baan Nah	Village 2, Baan Nah Subdistrict	077-890060	Smam Maneerat	06-596 4100	Preschool-Secondary school	11	11	302	1	0	1	Water Tank 9/9	1	230,000
3	Baan Lam Laing	Village 1, Lam Laing Subdistrict	-	Sompong Srifah	01-084 9502	Preschool-Primary school	6	7	113	1	0	1	Water Tank 3.3	1	70,000
															530,000

Remarks* Cl = Classrooms , Te = Teachers , St = Students , SD = Standard
IP = In Place , N = Needed ,Am. = Amount , Si = Sink

**D-TRAC Water and Sanitation Checklist
DISTRICT OFFICES**

Province: Ranong

Date: 26/05/2006

District Office: Provincial Hall

Name of Person Interviewed: Bonchock Khunpetch, Secretary Thai Red Cross, Ranong. Wiwat Wongtakul, Provincial Education Officer

Phone: 09- 732 2472, 077- 848411, 01- 084 1289

Email: -

Questions:

Do they have a printout of general statistics on their tsunami-affected district?	Yes	No
	X	
If not, ask the following:		
A. Population Affected:		
<ul style="list-style-type: none"> • See Attached: • Number of families 		
<ul style="list-style-type: none"> • Male/Female breakdown 		
<ul style="list-style-type: none"> • Age breakdown 		
<ul style="list-style-type: none"> • Affected sub-districts and villages 		
<ul style="list-style-type: none"> • Number of deaths 		
<ul style="list-style-type: none"> • Number of injuries 		

<ul style="list-style-type: none"> • Number of missing persons 		
B. Livelihoods Affected:		
<ul style="list-style-type: none"> • Fisheries (crab, shrimp, shellfish farms) 		
<ul style="list-style-type: none"> • Boats 		
<ul style="list-style-type: none"> • Agriculture (farming, crops affected) 		
<ul style="list-style-type: none"> • Tourism 		
<ul style="list-style-type: none"> • Other 		
How has the district been handling general long-term tsunami relief and redevelopment within their jurisdiction? Ex. Do they have recovery programs, projects?		
The Provincial Office: - Gave financial support to assist with new occupations - Provided equipment such as boat engine - Repaired and rebuilt houses - Repaired public infrastructure such as roads - Provided clothes victims and survivors - Provided scholarships		
What tsunami-affected areas are still in need of water and sanitation assistance:	Water	Sanitation
<ul style="list-style-type: none"> • See attached: • Villages 		
<ul style="list-style-type: none"> • Temporary camps 		
<ul style="list-style-type: none"> • New permanent housing 		
<ul style="list-style-type: none"> • Schools 		

• Preschools / Kindergarten		
• Health facilities		
Do affected villages have water committees?	Yes	No
		X
Who is the key contact for committee (ex. Village head)?		
No committee at the moment but after a water system is installed, there will normally be a villagers committee of a maximum of 15 people.		
Are village households required to pay monthly water tariffs? (ex. Does each household pay for metered water consumption on top of flat rates for well/borehole electricity?)		
If the village uses a municipal water system, the household needs to pay per unit using a meter. Households using well water only, need to pay for electricity to power a pump.		
How many children attend each affected school (remember – can be “affected” if children’s homes were lost, parents’ livelihoods affected, or one or both parents died in tsunami, etc)		
3,200 students directly and indirectly affected by the tsunami in 3 Districts: Maung, Kapur and Suk Samran. The parents who were affected by the tsunami were mostly fishermen and after the tsunami they moved to another district to look for alternative work. Schools where students have been directly affected: <ul style="list-style-type: none"> • Talay Nok School • Koh Sin Hai School • Had Sai Dam School • Cha Cree School • Bang Pru, School Kapur • Lem Now School Schools where students have been indirectly affected: <ul style="list-style-type: none"> • Klongkong School Moo 6 Rad Cha Krud subdistrict, Maung, • Eakasinratchapattana School Moo 2 Bang Non, • Tah Ghang School Moo 3 Nhao • Hin Chang School ,Maung • Nok Ngan Moo 5 Rad Cha Krud subdistrict • Bang Klang School Moo 1 Bang Rin 		
How many toilets and sinks are in each affected school?		

What other needs do these groups have that haven't been addressed yet?		
<p>Koh Sin Hai school, and Pak Nam school, Koh Lao - need water and sanitation systems installed. The village also needs connection to the municipal water system.</p> <p>Klongkong school Moo 6 Rad Cha Krud subdistrict, Maung - bathroom damaged and no sinks so replacements are needed.</p> <p>Eakasinratchapattana school Moo 2 Bang Non - water system and drainage insufficient.</p> <p>Bang Klang school Moo 1 Ban Rin - this school has 100 migrant students . The bathroom needs repairing.</p> <p>Tah Chang school Moo 3 Ngao subdistrict – needs not specified</p> <p>Ban Hin Chang Moo 3 Bak Nam subdistrict – needs not specified</p> <p>Nok Ngarng school Moo 5 Rad Cha Krud subdistrict – needs not specified</p>		
Does the district office know of other aid organizations already working in the wat/san sector in their district?		
<p>Department of Water Resource</p> <p>Department of Provincial Administration</p> <p>Thai Red Cross</p>		
Aid organizations: names, projects, locations?		
<p>Department of Water Resource – Assist with water system and water storage tank.</p> <p>Thai Red Cross – Installed borehole at Kapur Moo 3, Sam Nak, Muang Gluang subdistrict.</p>		
Are ABDs or other government agencies (ex. MENR, provincial authorities) working in wat/san sector in tsunami-affected districts?	Yes	No
	X	
Govt. agencies: names, projects, locations?		
<p>SAO helping villagers with the support of the District Office in the province.</p> <p>Department of Water Resource – Assist with water system and water storage tank.</p> <p>Department of Provincial Administration</p>		

**NGO SURVEYS
& SUPPLEMENTS**
Water and Sanitation Needs Assessment

Introduction

The data and figures in this section are translated from documents gathered in visits to provincial, district and sub-district offices, as well as villages. The original documents can be made available on request.

We have included our survey checklists as a matter of completeness and consistency. Empty fields in our checklists imply that the question has been answered by documents from a government office or village.

Contact information

The following information is for contacts without survey reports

Andaman Coastal Research Center for Development, Kasetsart University, Suk Samran District –

Ajan Sumpot, Director

Phone: 09 973 1229

CARE / Rak Thai, Khuraburi, Phang Nga –

Anchalee Ponklaing, Project Coordinator

Office: 076 491 603

Mobile: 09 206 1214

North Andaman Tsunami Relief, Khuraburi, Phang Nga –

Bodhi Garret, Director

Mobile: 01 787 7344

Email: relieffund@inet.co.th

Ministry of Environment and Natural Resources (MENR), Bangkok –

Khun Somsak Isarankura, Senior Policy and Planning Analyst

Mobile: 0 6167 7692

Office: 0 9969 7027

Email: somsak@dgr.go.th

Addendum

Ban Talay Nok, Moo 1, Kampuan, Suk Samran

Village mentioned by:

IUCN
NATR

Ban Tub Nua / Hat Prapat, Moo 2, Kampuan, Suk Samran

Village mentioned by:

IUCN

Ban Tah Klang / Phu Khao Thong, Moo 4, Kampuan, Suk Samran

Village mentioned by:

CARE / Raks Thai

Ban Hat Sai Khao, Moo 7, Kampuan, Suk Samran

Village mentioned by:

IUCN
NATR

Ban Laem Now School, Moo 6, Naga, Suk Samran

Village mentioned by:

IUCN
NATR

Ban Cha Cree, Moo 1, Bang Hin, Kapoe

Village mentioned by:

CARE / Raks Thai

Klong Kong School, Moo 6, Rad Cha Krud

Village mentioned by:

Ranong Thai Red Cross

Tah Chang School, Moo 3, Ngao

Village mentioned by:

Ranong Thai Red Cross

Nok Ngarnng School, Moo 5, Rad Cha Krud

Village mentioned by:

Ranong Thai Red Cross

D-TRAC Water and Sanitation Checklist NGOs / AID ORGANIZATIONS

Province: Ranong

Date: 25/5/06

District: Suk Samran

Name of Organization: USAID Post Tsunami Sustainable Coastal Livelihoods Program, Asia Institute for Technology (AIT), University of Rhode Island, University of Hawaii

Name of Persons Interviewed: Sumon (Kung) Sangkaew, Field Coordinator and Chris Dunbar, Field Site Manager

Phone: Chris Dunbar: office: 07 784 4286, mobile: 09 505 6698

Email: Chris Dunbar: cjdunbar@gmail.com

Questions:

Where are you operating in the tsunami-affected areas?

Kampuan Sub-district, Suksamran District:

Moo 1 - Ban Talay Nok

Moo 2 - Ban Tab Nua / Hat Prapat

Moo 3 - Ban Kampuan

Moo 4 - Ban Phu Khao Thong / Ta Klang (actually the name of a street in Phu Khao Thong)

Moo 7 - Ban Hat Sai Khao

Are you involved in water and sanitation projects in the tsunami-affected areas?

Yes	No
X	

If Yes, what water and sanitation projects are you currently working on?

Drainage projects – cleaning storm drains as “cash for work”, Kampuan Sub-district:

- Moo 1 – Ban Talay Nok
- Moo 2 – Ban Tub Nua / Hat Prapat
- Moo 7 – Hat Sai Khao

Waste management – recycling programs are in different phases; teaching villagers how to sort plastics, bottles, etc, in order to reduce input to the sub-district dump (which is feared to be contaminating a nearby wetland.)

Mr. Dunbar's side-note: The SAO has a design for a municipal waste disposal

facility, but AIT doesn't think it will solve the problem of water contamination. There needs to be further study and a real plan.

Engineers Without Borders has conducted an initial assessment to develop a better design. The facility is sited near a wetland and is inappropriate but an engineered solution may be an option. Further study and assessment is needed.

AIT is also working in conjunction with the public health officer at the district health office to help train locals to become volunteer health workers in their villages:

- Moo 1 – Ban Talay Nok
- Moo 2 – The village at Hat Prapat
- Moo 3 – Ban Kampuan
- Moo 4 – Ban Phu Khao Thong / Ta Klang

USAID has also provided 29 1,000 liter household water storage tanks for the village at Hat Prapat, Moo 2.

What projects have you already completed?

-

Do you know of any other current or past water and sanitation projects in any of the tsunami-affected districts?

Yes – see next question

Can you provide names, projects, and locations of other organizations involved in water and sanitation?

American Refugee Committee (ARC) – water systems → used to be in Suksamran District but maybe now in Bang Ban, Muang Gluang, Kapoe.

Mr. Dunbar's side-note: Gary Dahl from ARC was just down to Hat Prapat to hand over the water system. He knows the problem with salt intrusion due to over-pumping because the shrimp farm is using the same system. The village will contact the shrimp farm owner and insist that they install a meter and pay the same rate as the villagers. Stay tuned for more in the next few days... (31/5/06)

Do you work with government offices or partner organizations?	Yes	No
	X	

If Yes, which ones?

USAID coordinates with village heads, SAOs, and district offices.

Do you see a need for additional water and sanitation assistance in the area?	Yes	No
	X	
If so, where?		
A water source (tap) accessible in each village when individual house faucets break.		
Moo 1 – Ban Talay Nok – no water filters for system Raywut Hanjit is the village head and key contact. Mobile: 04 629 7760		
Are there specific problems in villages, schools, preschools, health offices, etc, such as standing water and drainage issues, flooding, erosion, pollution of surface water, and water shortages?		
<p>Mr. Dunbar provided the following information during a phone interview:</p> <p>All villages in Kampuan Sub-district:</p> <p>Moo 1 – Ban Talay Nok:</p> <ul style="list-style-type: none"> • Water storage systems need repair – water tower needs maintenance and two food-grade 1,000 litre storage tanks • Need pipelines and supply lines to go underneath road to connect two sides of the existing system <p>Moo 2 – Ban Tub Nua / Hat Prapat:</p> <ul style="list-style-type: none"> • Tower was installed by American Refugee Committee (ARC) along with a deep well to provide water to the reconstructed village at Had Prapat. • Existing conflict –:A shrimp farm is also using the system and has not installed a meter Due to overuse the well is drawing in brackish water in the dry season. <p>Possible solution:</p> <ul style="list-style-type: none"> • Dig a deep well up the hillside– there are currently no plans to build another well. • Force the shrimp farm to install a meter and pay for the water they use • Engineers without Borders (EWB) has conducted an initial assessment and survey for the village and are developing a plan. Monsoon rains cause regular and profound flooding in the village and cause backflow of septic system water into houses. This is a major health concern, and EWB has deemed it of the highest priority • SAO has designed a system but the design is marginal due to budget constraints. A more effective design will come from EWB and they are seeking funding for this project. <p>Moo 3 – Ban Kampuan:</p> <ul style="list-style-type: none"> • Several of the cover plates for the village market water drain have 		

broken and fallen into the system. This, along with plastics, sediment and organic debris from the market enter the system and clog the drains. There is currently no treatment for this problem. The USAID Project has conducted cash-for-work projects to clear the system but it is not sustainable.

- SAO said it would provide the cover plates, but hasn't yet.

Possible solution: Provide cover plates and treat organic waste from the market system.

- Village household water system needs filtration and additional storage.
- Several people have mentioned the need for waste water treatment, most likely in the form of a constructed wetland.

Mr. Dunbar mentioned other needs in Ban Kampuan:

- The Islam religious school needs to improve the bathroom.
- The Rotary-funded Kamphuan Learning Center adjacent to SAO was constructed last month without a bathroom, 400,000 baht, oops...

Moo 4 – Phu Khao Thong / Ta Klang:

- Habitat for Humanity is installing a water main for Ta Klang.
- There are 64 houses located there – partly in mangrove forest.

Moo 7 – Hat Sai Khao:

- Has a good water source but need storm drains in the reconstructed tsunami village. Monsoon rains cause regular and profound flooding in the village and cause the backflow of septic system water into houses. This is a major health concern.
- Engineers Without Borders has conducted an initial assessment and survey for the village and are developing a plan. This is their highest priority and they are currently seeking funding for this project

**D-TRAC Water and Sanitation Checklist
NGO / AID ORGANIZATION**

Province: Ranong

Date: 25/5/06

District: Office for Tsunami Recovery located in Khuraburi, Phang Nga

Name of Organization: World Conservation Union (IUCN)

Name of Person Interviewed: Khun Somsak Soonthornnawaphat, Thailand Program Manager

Phone: 02 662 4061 x123, mobile: 01 754 4548

Email: somsak@iucnt.org

Questions:

Where are you operating in the tsunami-affected areas?

Laem Son National Park – start May, 2006 (just starting, so not yet familiar with village needs)

- Involved in conservation projects and rehabilitation – tree (mangrove) nursery and livelihoods assistance

Ranong Province – working with communities in Laem Son National Park

- Partners include 1. Laem Son National Park, and 2. Mr. Sumpot, Andaman Coastal Research Center for Development, Kasetsart University. Phone: 09 973 1229

Are you involved in water and sanitation projects in the tsunami-affected areas?	Yes	No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes, what water and sanitation projects are you currently working on?

-

What projects have you already completed?

-

Do you know of any other current and past water and sanitation projects in the tsunami-affected districts?

No, but can name some locations of tsunami-affected villages. See next question.

Can you provide names, projects ,and locations?

Tsunami-affected village locations: Hat Sai Khao, Ban Gluey Nok, Hat Prapat, Bang Talay Nok, Laem Now		
Do you work with government offices or partner organizations?	Yes	No
	-	-
If Yes, which ones?		
-		
Do you see a need for additional water and sanitation assistance in the area?	Yes	No
If so, where?		
-		
Are there specific problems in villages, schools, preschools, health offices, etc, such as standing water and drainage issues, flooding, erosion, pollution of surface water, and water shortages?		
-		

Notes / Observations

Khun Somsak could not really tell us anything specific to water and sanitation because his project just got funding to move into communities in Laem Son National Park. He did, however, provide the names of some tsunami-affected villages and two documents – 1. Laem Son National Park map, and 2. Participatory Rapid Assessment of Tsunami-Affected Villages, Ranong, June 2005.

- Contacts provided: Kumpulan SAO member → Khun Sontaya 09 289 0013
- Referred us to NATR and AIT → we followed-up with AIT – informally spoke with Kung and got to speak with Chris Dunbar on phone (he was at workshop in Bangkok). He provided me with excellent info on villages and NGO participation. Have been in contact via email for follow-up.

**D-TRAC Water and Sanitation Checklist
NGO / AID ORGANIZATION**

Province: Phang Nga

Date: 24/05/2006

District: Kuraburi Office

Name of Organization: Save Andaman

Name of Person Interviewed: Nukul

Phone: 01- 752 1926

Email: prakry03@yahoo.com

Questions:

Where are you operating in the tsunami-affected areas?		
<ul style="list-style-type: none"> <input type="radio"/> Phang Nga Province <input type="radio"/> Ranong Province <input type="radio"/> Phuket Province <input type="radio"/> Trang Province 		
Are you involved in water and sanitation projects in the tsunami-affected areas?	Yes	No
	X	
If Yes, what water and sanitation projects are you currently working on?		
<p>Save Andaman is currently planning a future project at Koh Muk, Trang Province.</p> <p>A project based at Koh Por (Koh Lanta, Krabi Province) has already been completed.</p>		
What projects have you already completed?		
Koh Por, Koh Lanta - Krabi Province		
If No, do you know of current and past water and sanitation projects in any of the tsunami-affected districts?		
Adventist Development & Relief Agency (ADRA)		
Can you provide names, projects ,and locations?		

<ul style="list-style-type: none"> ○ Save Andaman - Krabi ○ Save Andaman - Trang ○ Adventist Development & Relief Agency (ADRA) 		
Do you work with government offices or partner organizations?	Yes	No
	X	
If Yes, which ones?		
<p>Save Andaman works with private companies and the following NGO's:</p> <ul style="list-style-type: none"> ○ Adventist Development & Relief Agency (ADRA) ○ Raks Thai ○ World Vision ○ Serb Foundation 		
Do you see a need for additional water and sanitation assistance in the area?	Yes	No
		X
If so, where?		
-		
Are there specific problems in villages, schools, preschools, health offices, etc, such as standing water and drainage issues, flooding, erosion, pollution of surface water, and water shortages?		
<p>No specific information given.</p> <p>He advised that we speak to the individual district health centers to find out more regarding the needs of health offices.</p>		

Notes / Observations
<p>Nukul was not able to provide further information because he does not have detailed knowledge of the work being completed in the Ranong Province.</p>

D-TRAC Water and Sanitation Checklist NGO / AID ORGANIZATION

Province: Ranong

Date: 25/05/2006

District: Suk Samran

Name of Organization: Habitat for Humanity

Name of Person Interviewed: Autachai Longleak

Phone: 077- 893 098

Email: --

Questions:

Where are you operating in the tsunami-affected areas?

Building houses at:

- Tah Klang, Moo 4, Kampuan, Suk Samran, Ranong Province
- Khao Lak, Khuk Khak sub-district, Phang Nga Province
- Huey Maipai, Thung Maprao sub-district, Phang Nga Province
- Bang Niang, Khuk Khak sub-district, Phang Nga Province
- Pruteaw, Bang Naysi sub-district, Phang Nga Province
- Koh Nok, Thung Maprao sub-district, Phang Nga Province
- Tah Chat Chai, Mai Kao sub-district, Phuket Province
- Koh Si Reh, Rat Sah Dah sub-district, Phuket Province

Are you involved in water and sanitation projects in the tsunami-affected areas?

Yes	No
X	

If Yes, what water and sanitation projects are you currently working on?

Ban Tah Klang, Moo 4, Kampuan– ongoing project to build a total of 79 houses including bathrooms and septic tanks in each. Public Health department provided consultation on sanitation techniques.

What projects have you already completed?

He didn't know because the interviewee had just started working here.

If No, do you know of current and past water and sanitation projects in any of the tsunami-affected districts?

- Moo 7 Had Sai Kao - The Thai Air Force built 50 houses with bathrooms including connection to municipal water system.
- Moo 7 Had Sai Kao – Sirinthron Foundation built 17 houses with bathrooms including connection to municipal water system.
- Moo 7 Had Sai Kao - Nursing Council built 17 houses with bathrooms including connection to municipal water system.

<ul style="list-style-type: none"> ○ Moo 3 Bang Kluay Nok – ADRA built 7 houses with bathrooms including connection to municipal water system. 		
Can you provide names, projects, and locations?		
See above.		
Do you work with government offices or partner organizations?	Yes	No
	X	
If Yes, which ones?		
<ul style="list-style-type: none"> ○ Bank of Ayudhya ○ World Concern ○ Public Health Department ○ Head Villagers ○ SAO 		
Do you see a need for additional water and sanitation assistance in the area?	Yes	No
	X	
If so, where?		
<p>Ban Phu Khao Thong, Moo 4 will soon have a large water system installed. Bang Gluay Nok and Damrongsatwittaya school need help with water issues. Non-government funded Muslim school (studying on Saturday and Sunday only) has no bathrooms or water supply and needs connection to a water system.</p>		
Are there specific problems in villages, schools, preschools, health offices, etc, such as standing water and drainage issues, flooding, erosion, pollution of surface water, and water shortages?		
<ul style="list-style-type: none"> ○ Ban Tah Klang, Moo 4 - no bathrooms or water supply at the Muslim school. During the dry season the villagers have problems with having no water. The mosque has 4 bathrooms but no water supply. ○ Tab Nua / Hat Prapat, Moo 2 - far from the natural water resource. 		

**D-TRAC Water and Sanitation Checklist
NGO / AID ORGANIZATION**

Province: Ranong

Date: 24/5/06

District: ADRA regional headquarters located in Khuraburi, Phang Nga

Name of Organization: Adventist Development and Relief Agency (ADRA)

Name of Person Interviewed: Todd Bruce, Regional Coordinator - South

Phone: office: 076 491 967, mobile: 07 080 0134

Email: crdp.fm@adra.or.th

Questions:

Where are you operating in the tsunami-affected areas?		
All water-related projects: Ranong, Phang Nga, and Krabi Provinces, and one location in Ta Cha Chai Village, Phuket		
Are you involved in water and sanitation projects in the tsunami-affected areas?	Yes	No
	✓	
If Yes, what water and sanitation projects are you currently working on?		
Attached is a list of current project locations. In Ranong, ADRA is only involved in gravity-fed systems (water from the hills). Last dry season there was an inadequate supply of water for one month; minimal water flow.		
What projects have you already completed?		
Attached is a list of completed projects.		
Do you know of any other current and past water and sanitation projects in the tsunami-affected districts?		
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Can you provide names, projects ,and locations?		
AIT – Kampuen Sub-district, Suk Samran District (AIT is located in ABD office) : has project in multi-sector program – livelihoods, health/hygiene		
Do you work with government offices or partner organizations?	Yes	No

	✓	
If Yes, which ones?		
<ul style="list-style-type: none"> • ADRA takes water samples from boreholes to be tested at a government office in Phuket. However, this relationship is more like “buying a service” for water testing than an actual inter-agency partnership. • ADRA <i>does</i> partner with Phang Nga Water Department by providing them with information. • Partnership with World Concern – ADRA is planning to drill 10 boreholes but must wait until villages are identified by World Concern. This will take place predominantly in Naga Sub-District, Suk Samran District. Drilling is only one component of World Concerns multi-sector program; they plan to implement health and livelihood support programs. Their proposal has been funded and village assessments will begin in July, 2006. 		
Do you see a need for additional water and sanitation assistance in the area?	Yes	No
	X	
If so, where?		
<p>School water supply needs do exist – can’t name villages off-hand, though.</p> <p>Water systems in schools are old → time for replacing and making improvements.</p> <p>“Latrines aren’t really an issue.” – Todd Bruce</p>		
Are there specific problems in villages, schools, preschools, health offices, etc, such as standing water and drainage issues, flooding, erosion, pollution of surface water, and water shortages?		
Todd Bruce will talk with field staff about issues in villages, schools, etc and be in touch with Jackie Dyer at D-TRAC.		

Notes / Observations
<p>Most villages listed in ADRA’s D-TRAC report were indirectly affected. ADRA’s criteria for assistance is based on the following:</p> <ol style="list-style-type: none"> 1. directly tsunami-affected. 2. indirectly affected (livelihoods) 3. temporary shelters <p>Some villages said their water “changed” after the tsunami – quality, color, odor, and quantity all changed to some extent. How accurate the information ADRA received from villages is questionable, but the organization still provided assistance.</p> <p>Bang Kayah, Khuk Khak, Ta Kuapa, Phang Nga:</p>

Starting in June 2006, ADRA will build a water tower and provide water tanks to the Surrathani Province – sponsored homes.

ADRA has already hooked up water connections from the main system to the King – built homes. It also connected the water tower to the main water system.