

ACCELERATED DEVELOPMENT OF WATSAN FACILITIES IN CHITTAGONG HILL TRACTS DISTRICTS



Participatory Assessment Analysis Action (PAAA) approach: Pathway to improve the WATSAN facilities in Rangamati District

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We are very much thankful to the Department of Public Health and Engineering (DPHE) and Chittagong Hill-Tracts Development Board (CHTDB) of Rangamati for their cordial support to implement the PAAA in all stage.

We would like to express our utmost gratitude to Mr. Firoj Ahamed, Sub-Assistant Engineer, DPHE, Kawkhali, Rangamati, who worked hard for gathering in-depth data in the field. We are also grateful to the Para Worker for their cordial support to initiate PAAA in the villages. Finally, we would like to give special thanks to the villagers who gave their valuable time in this work.

Chapter One

INTRODUCTION

Community-based interventions aimed at improving access to safe water, sanitation and hygienic practices are known to have profound socio-economic effects on the lives of the target communities. In addition to its direct health benefits through reducing the incidences, duration and severity of diarrhoea, it enables women to participate more extensively in activities that would increase their household access to food, and also increase their presence in the home to care for the children and themselves.

Participatory Assessment Analysis and Action (PAAA) is one of the key strategies identified for community based planning approach. PAAA facilitates a bottom-up planning process. It is designed to create an environment for two-way communication between extension worker and service providers wishing to help communities improve their water supply, sanitation and hygiene practices and the community member themselves, both men and women.

A training manual on Participatory Assessment Analysis Action (PAAA) approach focusing on Water and Environmental Sanitation was developed to impart training of thana and grass-root level workers. Among others things, the manual was designed to enhance rapid assessment of what communities already known and do in relation to improved water supply, sanitation and hygiene practice. At the same time providing communities the opportunity to express their priority to change, and how they perceive this change can be brought about, contributing own resource in the process. The PAAA approach has been initiated at first in Rangamati hill tracts district for improving WATSAN facilities

Bangladesh has achieved considerable safe water supply coverage. A recent national survey (Progotir Pathe 1997) showed that 97 percent of the rural population have access to safe water within 150 meters. Improvements of sanitation are lagging behind improvements in water supply. According to the above mentioned survey, sanitary latrine coverage was estimated at 33% with disparities in hilly area. The situation in the three Hill Tracts districts especially for water supply coverage indicate far less achievements. Only 45% of the population have access to safe water supply facilities

Chapter Two

OBJECTIVES AND OUTPUTS

Objectives

The objectives of PAAA implementation in the field were as follows:

- To develop capacity of service providers for more effective services delivery through the PAAA approach.
- To conduct a baseline survey with active participation of communities, to determine priority behaviour and need assessment for improvement in sanitation, hygiene habits and water facilities using the PAAA approach.
- To strengthen the capacity at grassroots level through dialogue to enhance a better understanding of the causal-effect relationship of poor hygienic practice to enable communities plan and take responsible action.
- To develop a need-based plan for improving Water and Environmental Sanitation facilities in Rangamati district.

Outputs

- A training manual on PAAA, focussing Water and Environmental Sanitation was developed in both Bangla and English.
- Nine Sub Assistant Engineers of PHE and eleven Project Organisers of CHTDB were given TOT on PAAA approach.
- Three hundred thirty five para workers and thirty-two tube-well mechanics received training on data gathering techniques using the PAAA approach.
- PAAA was implemented in 22 unions under eight thanas of Rangamati district.
- Data from Khawkhali thana was collected to assess the needs and interventions in relation to WATSAN facilities.
- In-depth work was done at Ghagra union to know the community perception about safe water, environmental sanitation and hygienic practice.

Chapter Three

WATER AND SANITATION SITUATION ASSESSMENT

3.1 RANGAMATI DISTRICT

3.1.1. Basic statistics of the district

Name of thana	Name of union	No of mouza		No of para		Household	Population			Pop'n per functioning PWS ¹	Latrine ² coverage (%)
		Total	Covered	Total	Covered		Male	Female	Total		
Rangamati sadar	Kutubchari	3	3	25	25	908	2445	2353	4798	98	42
	Sapchari	3	2	27	10	505	570	581	1151	55	60
	Magban	4	3	36	21	556	1382	1300	2682	224	34
	Banduk Vanga	1	1	36	36	861	2321	2167	4488	75	65
	Balukhali	7	2	35	7	208	548	550	1098	47	37
Khawkhali	Ghagra	4	2	61	30	1226	3202	3081	6283	185	37
	Berbunia	2	2	40	37	1202	3095	3305	6400	26	2
	Kaiampai	1	1	10	10	526	1254	1165	2419	27	6
Rajasthan	Galachari	4	2	36	16	404	1107	970	2077	67	19
	Ganda	4	3	47	18	463	1082	985	2067	129	10
	Bangalhalia	1	1	13	11	788	1887	1541	3428	26	18
Kapta	Wagga	1	1	22	14	653	1657	1752	3409	378	14
	Chumarang*										
	Raikhali*										
Baghaichari	Baghaichari	1	1	13	11	1408	3792	3682	7474	88	12
	Marisha	1	1	17	17	1428	3623	3509	7132	41	30
	Rupakar	2	2	13	13	1140	3116	2974	6090	156	17
Barkal	Subalong	7	7	35	33	1203	3512	3433	6945	169	16
Longudu	Longudu*										
	Bagachatar*										
Belachari	Belachari	3	2	26	16	280	1570	1400	2970	110	17
	Kangrachari	4	3	22	12	230	1230	1090	2320	116	26
Total		53	39	514	337	13989	37393	35838	73231	67	22

Table 1 Basic statistics of the district

- Average population per hand pump = 67
- Average hygiene latrine coverage = 22

¹ Protected water source (PWS) = Ring-well protected (RWP), Shallow tube well (STW), Deep-set pump (DSP) and Infiltration Gallery (IG).

² Water seal latrine and dry pit latrine

3.1.2 Water supply status

Thana	Union	Pop'n	RWP			DSP			Tara			STW			IG			Total coverage		
			T	F	%F	T	F	%F	T	F	%F	T	F	%F	T	F	%F	T	F	%F
Rangamati sadar	Kutubchari	4798	20	16	80	6	3	50	41	30	73	-	-	-	-	-	-	67	49	73
	Sadchari	1151	16	13	81	-	-	-	17	8	47	-	-	-	-	-	-	33	21	64
	Magban	2682	15	11	73	-	-	-	1	1	100	-	-	-	-	-	-	16	12	75
	Banduk Vanga	4488	19	11	58	23	14	61	48	35	73	-	-	-	-	-	-	90	60	67
	Balukhali	1134	4	4	100	18	11	61	9	8	89	-	-	-	-	-	-	31	23	74
Khawhkali	Ghagra	6283	50	28	56	4	3	75	3	1	33	3	1	33	1	1	100	61	34	56
	Betbunia	6400	16	13	81	17	14	82	16	14	88	213	201	94	-	-	-	262	242	92
	Kalambati	2419	9	8	89	14	12	86	9	8	89	67	60	90	-	-	-	99	88	89
Rajasthali	Galachari	2077	13	13	100	16	9	56	8	6	75	3	3	100	-	-	-	40	31	78
	Gaunda	2067	10	8	80	9	6	67	2	2	100	-	-	-	-	-	-	21	16	76
	Bangalhalia	3428	18	11	61	33	15	45	52	45	87	71	61	86	-	-	-	174	132	76
Kaptai	Wagga	3409	20	9	45	-	-	-	-	-	-	-	-	-	-	-	-	20	9	45
	Chumarang*																			
	Raikhali*																			
Bagnaichari	Baghaichari	7474	14	5	36	101	71	70	1	1	100	-	-	-	-	-	-	117	77	66
	Marisha	7132	51	39	76	121	113	93	31	24	77	-	-	-	-	-	-	203	176	87
	Rupakan	6090	21	14	66	13	10	77	19	15	78	-	-	-	-	-	-	53	39	73
Barkal	Subalong	6945	45	28	62	35	6	17	36	7	16	-	-	-	-	-	-	116	41	35
Longudu	Longudu*																			
	Bagachatar*																			
Belachari	Belachari	2970	21	12	57	30	11	37	7	4	57	-	-	-	-	-	-	58	27	46
	Kangrachari	2320	22	9	41	34	9	26	7	2	29	-	-	-	-	-	-	63	20	32
Total		71433	384	252	66	474	307	65	308	211	68	357	326	91	1	1	100	1524	1097	72

Table 2.1 Protected water sources by functioning condition, type and union (F = Functioning, T = Total)

* Information is not available

3.1. 3 Water supply status: summary

Types of PWS	Total No	No of functioning	% of functioning	Service coverage ³
RWP	384	252	66	26
DSP	474	307	65	64
Tara	308	211	68	22
STW	357	326	91	25
IG	1	1	100	*
Total	1524	1097	72	137

Table 2 2 Protected water source by functioning condition and type (* = below 1%)

- 72% of the protected water source was found in functioning condition

³ RWP, STW, Tara, IG = 75 population / hand-pump

DSP = 150 population / hand-pump

$$\text{Water service coverage} = \frac{\text{No of functioning water service} \times \text{population per service}}{\text{Total population}} \times 100$$

3.1. 4 Sanitation Status

Thana	Union	Household	Water seal	Dry pit	Traditional pit	Hanging	Open defecation
Rangamali Sadar	Kutubchari	908	20	360	-	492	36
	Sapchari	505	25	280	-	158	42
	Magban	556	19	171	-	337	29
	Banduk Vanga	861	83	475	-	252	51
	Balukhali	208	27	29	-	152	-
Kawkhali	Ghagra	1226	23	-	510	318	375
	Belunia	1202	76	-	200	560	366
	Kalampati	526	42	-	209	275	-
Rajasthali	Galachari	404	45	30	102	104	123
	Gaunda	463	20	26	63	2	352
	Bangalhalia	788	90	50	150	103	395
Kaptai	Wagga	653	41	52	3	136	421
	Chitmarang*						
	Raikhali*						
Baghaichari	Baghaichari	1408	18	145	785	279	181
	Marisha	1428	212	213	701	17	285
	Rupakari	1140	74	123	656	13	274
Barkal	Subalong	1203	78	117	162	239	607
Longudu	Longudu*						
	Bagachatar*						
Belaichari	Belaichari	280	13	35	51	80	101
	Kangrachari	230	29	31	45	10	115
Total		13989	935	2137	3637	3527	3753
Percent			7	15	26	25	27

Table 3 Latrine coverage

* Information is not available

Chapter Three

WATER AND SANITATION SITUATION ASSESSMENT

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3.1.1. Basic statistics of the district

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	Magban	4	3	36	21	556	1382	1300	2682	224	34
	Banduk Vanga	1	1	36	36	861	2321	2167	4488	75	65
	Balukhali	7	2	35	7	208	548	550	1134	49	37
Khawkhali	Ghagra	4	2	61	30	1226	548	550	1134	49	37
	Betbunia	2	2	40	37	1202	3202	3081	6283	185	2
	Kalampati	1	1	10	10	526	3095	3305	6400	26	6
Rajasthali	Galachari	4	2	36	16	404	1107	970	2077	67	19
	Gainda	4	3	47	18	463	1082	985	2067	129	10
	Bangalhalia	1	1	13	11	788	1887	1541	3428	26	18
Kaptai	Wagga	1	1	22	14	653	1657	1752	3409	378	14
	Chitmarang*										
	Raikhali*										
Baghaichari	Baghaichari	1	1	13	11	1408	3792	3682	7474	88	12
	Marisha	1	1	17	17	1428	3623	3509	7132	41	30
	Rupakari	2	2	13	13	1140	3116	2874	4256	109	17
Barkal	Subalong	7	7	35	33	1203	3512	3433	6945	169	16
Longudu	Longudu*										
	Bagachatar*										
Belaichari	Belaichari	3	2	26	16	280	1570	1400	2970	110	17
	Kangrachari	4	3	22	12	230	1230	1090	2320	116	26
Total		53	39	514	337	13989	37432	35738	71433		

Table 1 Basic statistics of the district

- Average population per hand pump = 65
- Average hygiene latrine coverage = 22

² Protected water source (PWS) = Ring-well protected (RWP), Shallow tube well (STW), Deep-set pump (DSP) and Infiltration Gallery (IG)

³ Water seal latrine and dry pit latrine.

3.1.2 Water supply status

Thana	Union	Pop'n	RWP			DSP			Tara			STW			IG			Total coverage		
			T	F	%F	T	F	%F	T	F	%F	T	F	%F	T	F	%F	T	F	%F
Rangamati sadar	Kutubchari	4798	20	16	80	6	3	50	41	30	73	-	-	-	-	-	-	67	49	73
	Sapchari	1151	16	13	81	-	-	-	17	8	47	-	-	-	-	-	-	33	21	64
	Magban	2682	15	11	73	-	-	-	1	1	100	-	-	-	-	-	-	16	12	75
	Banduk Vanga	4488	19	11	58	23	14	61	48	35	73	-	-	-	-	-	-	90	60	67
	Balukhali	1134	4	4	100	18	11	61	9	8	89	-	-	-	-	-	-	31	23	74
Khawhkali	Ghagra	6283	50	28	56	4	3	75	3	1	33	3	1	33	1	1	100	61	34	56
	Betbunia	6400	16	13	81	17	14	82	16	14	88	213	201	94	-	-	-	262	242	92
	Kalampati	2419	9	8	89	14	12	86	9	8	89	67	60	90	-	-	-	99	88	89
Rajasthali	Galachari	2077	13	13	100	16	9	56	8	6	75	3	3	100	-	-	-	40	31	78
	Gainda	2067	10	8	80	9	6	67	2	2	100	-	-	-	-	-	-	21	16	76
	Bangalhalia	3428	18	11	61	33	15	45	52	45	87	71	61	86	-	-	-	174	132	76
Kaptai	Wagga	3409	20	9	45	-	-	-	-	-	-	-	-	-	-	-	-	20	9	45
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	Raikhali*																			
Baghaichari	Baghaichari	7474	14	5	36	101	71	70	1	1	100	-	-	-	-	-	-	117	77	66
	Marisha	7132	51	39	76	121	113	93	31	24	77	-	-	-	-	-	-	203	176	87
	Rupakari	4256	21	14	66	13	10	77	19	15	78	-	-	-	-	-	-	53	39	73
Barkal	Subalong	6945	45	28	62	35	6	17	36	7	16	-	-	-	-	-	-	106	41	38
Longudu	Longudu*																			
	Bagachatar*																			
Belaichari	Belaichari	2970	21	12	57	30	11	37	7	4	57	-	-	-	-	-	-	58	27	46
	Kangrachari	2320	22	9	41	34	9	26	7	2	29	-	-	-	-	-	-	63	20	32
Total		71433	384	252	66	474	307	65	308	211	68	357	326	91	1	1	100	1514	1097	72

Table 2.1 Protected water sources by functioning condition, type and union (F = Functioning, T = Total)

* Information is not available

3.1. 3 Water supply status: summary

Types of PWS	Total No	No. of functioning	% of functioning	Service coverage ³
RWP	384	252	66	26
DSP	474	307	65	64
Tara	308	211	68	22
STW	357	326	91	25
IG	1	1	100	*
Total				

Table 2 2: Protected water source by functioning condition and type (* = below 1%)

- 72% of the protected water source was found in functioning condition

³ RWP, STW, Tara, IG = 75 population / hand-pump

DSP = 150 population / hand-pump

$$\text{Water service coverage} = \frac{\text{No. of functioning water service} \times \text{population per service}}{\text{Total population}} \times 100$$

3.1. 4 Sanitation Status

Thana	Union	Household	Water seal	Dry pit	Traditional pit	Hanging	Open defecation
Rangamati Sadar	Kutubchari	908	20	360	-	492	36
	Sapchari	505	25	280	-	158	42
	Magban	556	19	171	-	337	29
	Banduk Vanga	861	83	475	-	252	51
	Balukhali	208	27	29	-	152	-
Kawkhali	Ghagra	1226	23	-	510	318	375
	Betbunia	1202	76	-	200	560	366
	Kalampati	526	42	-	209	275	-
Rajasthali	Galachari	404	45	30	102	104	123
	Gainda	463	20	26	63	2	352
	Bangalhalia	788	90	50	150	103	395
Kaptai	Wagga	653	41	52	3	136	421
	Chitmarang*						
	Raikhali*						
Baghaichari	Baghaichari	1408	18	145	785	279	181
	Marisha	1428	212	213	701	17	285
	Rupakari	1140	74	123	656	13	274
Barkal	Subalong	1203	78	117	162	239	607
Longudu	Longudu*						
	Bagachatar*						
Belaichari	Belaichari	280	13	35	51	80	101
	Kangrachari	230	29	31	45	17	115
Total		13989	935	2137	3637	3527	3753
Percent			7	15	26	25	27

Table 3: Latrine coverage

* Information is not available

3.1.5 Sanitation Status: summary

Types of latrine*	Latrine coverage	
	Household	%
Water seal	953	7
Dry pit	2137	15
Traditional pit	3637	26
Hanging	3527	25
Open defecation	3753	27

Table 4 Latrine coverage summary

- Notes. * Water seal latrine = Latrine is which made by sanitary ring and slab with water seal portion
Dry pit latrine = Hole latrine covered by bamboo and tree
Traditional pit latrine = Hole latrine without cover
Hanging latrine = Open defecation in a fixed place
Open defecation = Jungle/open place i.e no fixed place for defecation

3.2 KHAWKHALI THANA

3.2.1 Basic statistics

Union	No. of para	Household	Population (1997)			Population per functioning PWS ⁴	Latrine ⁵ coverage (%)
			Male	Female	Total		
Ghagra	30	1226	3202	3081	6283	185	2
Betbunia	36	1202	3095	3305	6400	26	6
Kalampati	10	526	1254	1165	2419	27	8
Total	76	2954	7551	7551	15102	41	5

Table 5: Basic statistics of the study area

- Average population per hand pump = 41
- Average hygiene latrine coverage = 5%

⁴ Protected water source (PWS) = Ring-well protected (RWP), Shallow tube well (STW), Deep-set pump (DSP) and Infiltration Gallery (IG)

⁵ Water seal latrine and Pit latrine

3.2.2 Water supply status

Union	Pop	RWP			DSP			Tara			STW			IG			Total coverage		
		T	F	% F	T	F	% F	T	F	% F	T	F	% F	T	F	% F	T	F	% F
Ghagra	6283	50	28	56	4	3	75	3	1	33	3	1	33	1	1	100	61	34	56
Betbunia	6400	16	13	81	17	14	82	16	14	88	213	201	94	-	-	-	262	242	92
Kalampati	2419	9	8	89	14	12	86	9	8	89	67	60	90	-	-	-	99	88	89
Total	15102	75	49	65	35	29	83	28	23	82	283	262	93	1	1	100	422	364	86

Table 6 1: Protected water sources by functioning condition and type F = Functioning

3.2.3 Water supply status: summary

Types of PWS	Total Number	No. of Functioning	% of functioning	Service coverage
RWP	75	49	65	24
DSP	35	29	83	29
Tara	28	23	82	11
STW	283	262	93	130
IG	1	1	100	*
Total	422	364	86	194

Table 6 2 Protected water source by functioning condition and type

- 86% of the protected water source was found in functioning condition

3.2.4 Sanitation status

Union	No. of Household	Water seal	Traditional pit	Hanging	Open defecation
Ghagra	1226	23	510	318	375
Betbunia	1202	76	200	560	366
Kalampati	526	42	209	275	-
Total	2954	141	919	1153	741
Percent		5	31	39	25

Table7 Latrine coverage

3.2.5 Sanitation status: summary

Types of latrine	Latrine coverage	
	Household	%
Water seal	141	5
Traditional pit	919	31
Hanging	1153	39
Open defecation	741	25

Table 8 Latrine coverage

- Average hygiene latrine coverage = 5%.
- Households had a tendency to use a fixed place for defecation = 75%

3.3 GHAGRA UNION

3.3.1 Basic statistics

Para	Household	Male	Female	Population	Pop per PWS	Latrene coverage
Jautha khamar	35	69	83	152	-	3
Zunumachara	81	190	214	404	202	9
Dewan para	45	122	111	233	78	7
Mohajon para	53	143	126	269	54	-
Chowdhury para	70	168	186	354	354	-
Kala bagan	52	132	135	267	89	2
Chela chara	28	89	64	153	153	-
Contractor para	82	207	202	409	205	1
Naya bangga	25	76	75	151	-	-
Puran poya para	24	72	64	136	-	-
Jautha bhagan	23	73	66	139	-	-
Talukder para	39	117	98	215	108	-
Bet chari	87	121	137	258	258	-
Shamuk chari	81	232	198	430	430	1
Narangi	28	67	64	131	131	-
Kachu khali	26	65	66	131	19	-
Haranghi muk	60	150	152	302	-	-
Pera chara	22	65	54	119	-	-
Noksha chari	22	75	75	150	150	-
Necha nij para	23	69	67	136	136	-
Upor nij para	22	64	69	133	133	-
Metigga chari	52	135	160	295	-	-
Noya para	25	74	73	147	-	-
Leva para	28	73	58	131	-	-
Harangi refugee para	45	115	112	227	227	2
Dhoza para	20	63	44	109	-	-
Buk chari	12	32	29	61	61	8
Chela chara	44	126	110	236	-	-
Badal chari	22	75	58	133	-	-
Bazar para	50	143	129	272	272	14
Total	1226	3202	3081	6283	185	2

Table 9: Basic statistics of the union

3.3.2 Socio-economic and demographic data

Age (year)	Male		Female		Total	
	No.	%	No.	%	No.	%
0 – 1	70	2	84	3	154	3
2 – 5	341	11	373	12	741	11
6 – 12	666	21	585	19	1251	20
13 +	2125	66	2039	66	4164	66
Total	3202	100	3081	100	6283	100

Table 10: Population distribution by age and sex (1997).

- Male-female ratio = 104 : 100
- Average family size = 5
- Children under 6 years = 14%

Literacy

- Adult female literacy rate = 38%
- Adult male literacy rate = 57%

Education (6 –12 years)

- Girl's school enrolment = 64%
- Boy's school enrolment = 71%

Occupation

- Households involved in agriculture = 81%
- Main cash crop = paddy and spices

Socio-economic condition

- According to the perception of the respondents 50% were considered poor, 41% belong in middle group and only 9% were wealthy (annex. 111).

Disease prevalence and treatment options

Sl no	Disease	Health service (%)				Month for high incidences of disease
		Modern medicine	Homeopathic	Traditional hiller	Home	
1	Diarrhoea <i>lamoni</i>	45	20	10	25	Mid Sept. – mid Oct. Mid Feb. – mid Apr.
2	Malaria <i>malpira/jor</i>	45	25	15	15	Mid Aug – mid Nov
3	Itching <i>khawjane</i>	40	25	15	20	Mid Sept – mid Nov Mid Feb – mid Apr
4	Hepatitis <i>rangga pira</i>	10	20	50	20	Mid Sept. – mid Nov Mid Feb – mid Apr
5	Hook worm <i>chila lac</i>	45	30	15	10	Mid Jan.- mid Aug
6	Pneumonia <i>seba kash</i>	40	20	20	20	Mid Dec – mid Feb
7	Eye infection <i>chauk pira</i>	40	25	20	15	Mid Aug – mid Oct

Table 11 Matrix ranking of perceived health service use

3.3.3 Water supply status

Para	Population	RWP		STW		Tara		DSP		IG		Total coverage			
		T	F	T	F	T	F	T	F	T	F	T	F	%F	
Jautha khamar	152	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zunumachara	404	4	2	-	-	-	-	-	-	-	-	4	2	50	
Dewan para	233	2	2	-	-	1	1	-	-	-	-	3	3	100	
Mohajon para	269	6	5	-	-	-	-	-	-	-	-	6	5	83	
Chowdhury para	354	2	1	-	-	-	-	-	-	-	-	2	1	50	
Kala bagan	267	4	3	-	-	-	-	-	-	-	-	4	3	75	
Chela chara	153	1	1	-	-	-	-	-	-	-	-	1	1	100	
Contractor para	409	2	1	-	-	-	-	-	-	1	1	3	2	67	
Naya bangga	151	-	-	-	-	-	-	-	-	-	-	-	-	-	
Puran poya para	136	-	-	-	-	-	-	-	-	-	-	-	-	-	
Jautha bhagan	139	-	-	-	-	-	-	-	-	-	-	-	-	-	
Talukder para	215	-	-	-	-	2	1	1	1	-	-	3	2	67	
Bet chari	258	6	1	-	-	-	-	-	-	-	-	6	1	17	
Shamuk chari	430	3	-	3	1	-	-	-	-	-	-	6	1	17	
Narangi	131	1	1	-	-	-	-	-	-	-	-	1	1	100	
Kachu khali	131	10	7	-	-	-	-	-	-	-	-	10	7	70	
Haranghi muk	302	1	-	-	-	-	-	-	-	-	-	1	-	-	
Pera chara	119	-	-	-	-	-	-	-	-	-	-	-	-	-	
Noksha chari	150	1	1	-	-	-	-	-	-	-	-	1	1	100	
Necha nij para	136	1	-	-	-	-	-	1	1	-	-	2	1	50	
Upor nij para	133	-	-	-	-	-	-	1	1	-	-	1	1	100	
Metigga chari	295	1	-	-	-	-	-	-	-	-	-	1	-	-	
Noya para	147	-	-	-	-	-	-	-	-	-	-	-	-	-	
Leva para	131	-	-	-	-	-	-	-	-	-	-	-	-	-	
Harangi refugee para	227	1	1	-	-	-	-	-	-	-	-	1	1	100	
Dhoza para	109	-	-	-	-	-	-	-	-	-	-	-	-	-	
Buk chari	61	1	1	-	-	-	-	-	-	-	-	1	1	100	
Chela chara	236	1	-	-	-	-	-	-	-	-	-	1	-	-	
Badal chari	133	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bazar para	272	1	1	-	-	-	-	1	-	-	-	1	1	100	
Total	6283	50	28	3	1	3	2	4	4	1	1	61	34	56	

Table 12. Para wise protected water source by working condition and type

3.3.4 Water supply status: summary

Types of PWS	Total No.	No of functioning	% of functioning
RWP	50	28	56
DSP	4	3	75
STW	3	1	33
Tara	3	1	33
IG	1	1	100
Total	61	34	56

Table 13: Protected water source by functioning condition and type.

- 56% of the protected water source was in functioning condition
- Maintenance is centrally controlled.
- 20% of the population use protected water source for drinking.
- 15% of the population use protected water source for cooking.
- 14% of the population use protected water source for washing.
- In 95 % households women collect water for all domestic purposes.

Reasons behind using surface water for drinking

- 65% of the population do not use protected water sources for drinking due to unavailability
- 5% of the population do not use it because they find bad smell in it.
- During survey it was observed that 10% of the population do not use it because it is not functioning.

3.3.5 Key issues from community perspective

- 60% of the population said that non-availability of safe water is a very big problem in hilly areas
- 50% of the population complained about frequent break down of water supply facilities.
- Major reason for frequent break down was silting/choking of hand-pump.
- Some tube wells yield water with bad smell, taste and colours, which is mostly related to iron presence.
- 50% of the women mentioned that it is not comfortable for them if the water source is one kilometre away from them.
- 70% of the women mentioned that they use less water in summer when traditional source i.e , hand dig pit run dry and therefore have to walk long distance (≥ 1 km.) for alternative use.
- 30% of the women felt that if they have safe water near by, it would enable them to participate more extensively in activities that would increase their household access to food, and also increase their presence in the home to care for the children and themselves.
- 85% of the population felt if water was easily accessible, it would have been used for all domestic purposes.

- 30% of the population felt if water was easily accessible, it would have been used for home gardening.
- Community thinks break down of hand pump is related to over use i.e., 100 – 150 people per hand pump.
- 80% of the population think that it is very difficult as well as expensive to install a tube-well in a hilly area.
- 25% of the population think the major problem is that they have spent 1 to 2 hours for collecting water and walk 2 kilometres to water source.
- Ring well are located in flood plain and dirty water come up from near by garbage bin.
- There is nobody to do minor repair and, hence after six months to one year it became chocked-up
- Few case of vandalism's are reported dropping coin or small stone in ring well/tube well and it become non functioning.
- Few reported cases of difficulty with hand pump handle, especially the children experiences difficulty with the handle.

3.3.6 Proposed community response

- 70% of the population felt that if the government or any other agency set up tube well, the community can take care of it.
- 60% of the population said that they can provide labour for installation a tube-well and also they can help in mobilising local resource.
- 40% of the population agreed to contribute up to Tk.50 for first installation a tube-well.
- 70% of the population mentioned that they are ready to buy spare-parts if the tube-well become damage
- Community formed an 'action committee' for safe water in each para. Duties of the committee would be site selection, local resource mobilisation, supply labour and motivate people to take care of the tube-wells.

3.4 Sanitation

3.4.1 Sanitation Status

Para	Household	Water seal	Traditional pit	Hanging	Open
Jautha khamar	35	1	8	2	24
Zunumachara	81	7	62	1	11
Dewan para	45	3	35	-	7
Mohajon para	53	-	25	16	12
Chowdhury para	70	-	63	1	6
Kala bagan	52	1	14	-	37
Chela chara	28	-	12	4	12
Contractor para	82	1	51	15	15
Naya bangga	25	-	1	-	24
Puran poya para	24	-	8	10	6
Jautha bhagan	23	-	-	-	23
Talukder para	39	-	2	37	-
Bet chari	87	-	31	54	2
Shamuk chari	81	1	2	-	78
Narangi	28	-	3	15	10
Kachu khali	26	-	19	7	-
Haranghi muk	60	-	4	20	36
Pera chara	22	-	7	14	1
Noksha chari	22	-	13	9	-
Necha nij para	23	-	-	1	22
Upor nij para	22	-	10	5	7
Metigga chari	52	-	12	30	10
Noya para	25	-	9	1	15
Leva para	28	-	13	15	-
Harangi refugee para	45	1	9	20	15
Dhoza para	20	-	5	15	-
Buk chari	12	1	6	5	-
Chela chara	44	-	42	-	2
Badal chari	22	-	1	21	-
Bazar para	50	7	43	-	-
Total	1226	23	510	318	375

Table 14 Latrine coverage by para

3.4.2 Sanitation Status: summary

Types of latrine	Latrine coverage	
	Household	%
Water seal	23	2
Traditional pit	510	42
Hanging	318	25
Open defecation	375	31
Total	1226	100

Table 15. Latrine coverage summary

- Average hygiene latrine coverage = 2%.
- Households had a tendency to use a fixed place for defecation = 69%

- 95% children aged above 5 years of the households with water seal and hole latrine use those latrines for defecation

3.4.3 Latrine coverage vs socio-economic status

- 90% of the wealthy households habitudes with the use of any kind of latrine.
- 82% of the middle group households habitudes with the use of any kind of latrine.
- 43% of the poor households habitudes with open defecation.

3.4.4 Latrine coverage vs literacy status of head of household

- 88% of the households with literate household head had any kind latrine.
- 56% of the households with illiterate household head had any kind latrine.

3.4.5 Key issues from community perspective

- 80% of the households do not know about the significance of hygiene/sanitary latrine
- 50% of the population considered the slab and ring to be too expensive and out of their means.
- 50% of the population said that transportation of the ring and slab is also major problem in the hilly area, and there is high risk of breaking.
- 70% of the households having no latrine mentioned that they were poor and had no money to build a hygienic latrine.
- 60% of the water seal latrine users complain about the amount of water requires to clean it. In some cases people broke the water sealed portion of the latrine
- 10% of the population felt that the occurrence of diseases in number had increased, as they don't use water seal latrine
- 20% of the population feel it is more convenient to use the bush/jungle around homestead for defecation.
- Less than 1% of old age people still hold the traditional belief that it is improper to dig a hole for defecation as their this respects to their ancestors buried in the ground.
- 2% of the population considered their generations before had live even longer lives without the use of latrines.
- 15% of the population said that it is risky to use hole latrine in the rainy season as mud became lose.

3.4.6 Proposed community response

- 70% of the households agreed to give bamboo, tree, leaf and labour for the construction of the latrine.
- 30% of the households showed their willingness to spend up to Tk.50/per households for the construction of a latrine.
- 25% households suggest to set-up production centre at local level to minimised transport cost and chance of the breakage of ring and slab during transportation
- 80% of the population felt that they have less workload during the period of December to March and can construct the latrine with the involvement of the community.
- 50% of the population felt that if the low cost technology for hygiene latrine knowledge provided them through a demonstration, they would able to prepare it

- Community formed an 'action committee' for hygiene latrine in each para. Duties of the committee would be local resource mobilisation, labour supply and to motivate people to construct hygiene latrine.

3.5.1 Hygiene practices

3.5.2. Hand-washing

- 6% of the household wash hand with soap and water before handling food.
- 94 % of the household wash hand with water before handling food.
- 3% of the household wash hand with soap and water after defecation.
- 3% of the household wash hand with mud and water after defecation
- 94 % of the household wash hand only with water after defecation.

3.5.3 Key issues from community perspective

- 40% of the population showed awareness about hand washing practices with soap and water after defecation but can not do as they are not economically well enough to buy a soap.
- 10% of the population feel that one of the main causes of affecting diseases is not washing hand with soap after defecation.
- 25% of the population think it is enough to wash hand only with water after defecation.

CONSTRAINTS, OBSERVATIONS, RECOMENDATIONS AND CONCLUSIONS

4.1 Constraints

- No brief was conducted for thana and UP officials prior to implementation. But it was not possible to do so at Rangamati.
- Union Parishad election at the time of implementation interrupted field operations.
- Certain areas are not accessible, by road due to poor road network. Due to security problem it was impossible to work in some areas in the afternoon.
- Language barrier.
- Low educational status of some para workers.
- Lack transport for para workers
- There was a lack of co-ordination between SAE and PO in some areas.
- There was political unrest in hill districts at the time of implementation and lack of security for conducting fieldwork in the remote and difficult areas.
- Implementation work concentrated only in CHTDB accessible area.
- Limited time for accomplishing task.

4.2 Observations

- Significantly high water service level are noted in Sapchhari, Balukhali, Betbunia, Kalampati, Geelachari, Bangalhalia union. As per government criteria population/hand pump = 75 for RWPI, Tara, STW, IG and 150 for DSP. However in Sapchhari, Balukhali, Betbunia, Kalampati, Geelachari, Bangalhalia union water service levels are 55, 49, 26, 27, 67, 26 respectively (Table. 1).
- It is observed that sanitary latrine coverage is much lower (2%) in Ghagra than it is others unions where coverage ranges from 6% to 65% (Table 1).

4.3 Recommendations and Conclusions

- Training service providers on PAAA approach is critical. If the training on PAAA is not imparted properly and trained by non PRA expertise, there might not be any tangible output from the PAAA process and has to be done professionally.
- Field workers to use this technique should have completed class eight level.
- Moral and supervisory support from district authorities could greatly enhance PW commitments and improve efficiency.
- Respective district level officials of UNICEF should be more involved with this work.
- Communities should be sensitised on safe water use, environmental sanitation and hygiene practices. Para workers and grassroots level workers of local NGO may be selected and trained for such a task.
- Committees should form at the thana/union level for implementation, monitoring and supervision. Persons/department/organisation who are involved with WES related activities and also experienced and devoted to accelerate the work should be included in this committee.

- Solicit relevant policy makers level support for this programme e.g, The Local Government Council (*Sthaneeya Sarker Parishad*).
- Any success story of a para or an area needs to be acknowledged and shared with others Also, concerned persons may be awarded with some incentive for encouragement.
- It is essential to review the total community process after six months. This will facilitate the development the implementation strategy further if required Since, community process is a new approach, close supervision/monitoring is required for the progress

METHODS AND MATERIALS

A.1.1 Area of work

- PAAA approach was implemented at 22 unions under eight thanas of Rangamati district. The study covered 337 paras, consisting of 13989 households with a population of 73231.
- This report illustrates the process of data analysis and planning, identifying interventions in relation to improvements in Water and Environmental Sanitation situation using the PAAA approach.
- Ghagta union of Khawkhali thana was selected as a for this in-depth work.

A.1.2 Instruments

A training manual on PAAA was developed based on Participatory Rural Appraisal (PRA). Selected methods were incorporated in the training (PAAA) manual after series of pre-planning meetings with respective government officials.

Following techniques were carried out for implementing PAAA at the field

- Physical and social mapping
- Household listing
- Household information card
- Wealth ranking
- Matrix ranking
- Seasonal calendar
- Priority ranking
- Data compilation
- Participatory action plan

A.1.3 Time frame

The activities were initiated from 13th October to 31st December 1997.

METHODS AND MATERIALS

A.1.1 Area of work

PAAA approach was implemented at 22 unions under eight thanas of Rangamati district. The study covered 250 paras, consisting of 13989 households with a population of 714333.

This report illustrates the process of data analysis and planning, identifying interventions in relation to improvements in Water and Environmental Sanitation situation using the PAAA approach.

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- Participatory action plan

A.1.3 Time frame

The activities were initiated from 13th October to 31st December 1997.

IMPLEMENTATION STRATEGIES

Field operations constitute the following elements:

- Training of the trainer (TOT)
- Training of the para worker/ tube-well mechanic
- Data collection with active community participation

A.2.1 Training of the trainers (TOT)

A total of 20 participants, nine Sub-Assistant Engineers from DPHE and eleven Project Organisers from CHTDB of Rangamati district were selected as district trainers. All these participants are drawn from the thana level administration. They are given a six day training of trainers (TOT) on “Community-based Planning using Participatory Assessment, Analysis and Action approach (PAAA)” to using on Accelerated Development of WASTAN Facilities in Chittagong Hill Tracts Districts. Training was conducted at CHTDB training room from 2nd November to 7th November 1997.

A.2.2 Objectives

- To introduce the PAAA concept as a plan tool.
- To familiarise them in different participatory rural appraisal (PRA) techniques
- To provide knowledge about data compilation and the development of a participatory plan of action.
- To develop the skills of a number of trainers who would in turn teach the PAAA approach through PRA techniques to the para workers/ tube-well mechanics or grassroots workers.

A.2.3 Trainers training course module

Through out the course of the training, an attempt has been made to develop skills of the trainers, to successfully conduct similar training for field workers. The training was basically divided into three parts:

- Introduction to the PAAA approach
- Different steps of participatory techniques/PRA
- Practical field level operations

The following constitute the training approach:

- Lecture
- Clarification of different steps of the techniques
- Demonstration in the class room
- Group work
- Discussion
- Field work presentation
- For ice breaking and pace setting, some games were also arranged in the classroom
- Plan for the future implementation strategies

A.2.4 Comments

- Trainees participated actively during classroom demonstration, group work, fieldwork and presentation.
- In some cases, to have more clarity during training sessions, trainees also facilitated as trainers. This was essentially a confidence building measure for the trainees.
- The Household information card and monitoring sheet were reviewed in one of the sessions. Additionally, a checklist for priority was ranking developed. This checklist will be later used for identifying the problems and their solutions at the community level. However, the discussions gave special emphasis on water and environmental sanitation.
- The training helped the participants to develop their future activity plan. At the end of the session participants from DPHE and CHTDB sat together and prepared future implementation plans and submitted these to the district authorities.
- In the fieldwork, language was found to be a significant barrier to discussion with the community.

A.2.5 Training of para workers (PWs) and tube-well mechanics (TWMs)

Para workers and tube-well mechanics were selected from twenty-two different unions of eight thanas under Rangamati district. A total of 367 persons, of which 335 were para workers and 32 were tube-well mechanics participated in the three days training on PAAA at the union level office. One session was conducted in each union with 20 participants. One SAE and one PO were responsible to conduct the training for all unions under each thana. The first training session started on 11th November 1997 and the last, on 12th December 1997 (according to their work plan).

A.2.6 Objectives

- To increase knowledge about the importance of water and environmental sanitation.
- To more actively involve communities in identifying their own problems in a participatory manner.
- To empower communities to make informed decisions in response to their problems.

A.2.7 Training course module for PWs and TWMs

The training was basically divided into three parts:

- Introduction to the PAAA approach
- Different steps of participatory techniques/PRA
- Practical field level operations

The following constitute the training approach

- Lecture
- Clarification of different steps of the techniques
- Demonstration in the class room
- Group work
- Discussion
- Field work presentation
- For ice breaking and pace setting, some games were also arranged in the classroom
- Plan for the future implementation strategies

A.2.8 Comments

- Generally during the training of PWs and TWMs the trainers (SAEs & POs) imparted training on PAAA satisfactorily.
- Response from the PWs and TWMs was enthusiastic and encouraging
- It was observed that participants could grasp the methods of PAAA quickly.

A.2.9 Field level operations

On completion of the classroom exercise, on “Community-based Planning using Participatory Assessment, Analysis and Action approach”, para workers and tube-well mechanics initiated work in 250 paras under eight thanas.

The field exercise comprises the following:

- Rapport building with all social class in the community.
- Identification/ selection of focus group of six to eight interested persons.
- Preparation of physical and social mapping involving the community. Issues related to household, protected water source specifying functioning conditions, surface water source, latrine specifying whether water seal or pit or hole or hanging, road, culvert, educational and religious institutes, shops, cultivatable land, hills or other important landmarks etc. was discussed in detail and reflected in the physical and social mapping of the para. This mapping would be used to assess the need of the community specially in the context of water and environmental sanitation. This was also used to cross check data.
- Household listing, with specific identification for each in all paras.
- Completion of household information card. This provides details of the social, demographic, educational and behavioural aspects of the respective households.
- Collection of data on the socio-economic condition of the households, using the wealth ranking technique. This information could enhance resource mobilisation efforts.
- Listing of prevalent diseases and treatment behaviour using matrix ranking technique. Based on this information, it would be possible to identify prevalent waterborne diseases and appropriate/area specific health education message designed.
- Through a consultative process communities identified their problems and then prioritised them. Potential solutions to those problems were also identified. A committee was at this stage formed at para level to take responsibility for implementation of activities aimed at improving facilities.
- Developed a seasonal calendar identifying community's free time for both men and women, during which work on various issues related to water and environmental sanitation. Seasonal calendar also reflects period of severe out breaks of water related diseases could be addressed. Which enhance as effective planning for appropriate interventions.

A.3 WEALTH RANKING INDICATORS

1. Wealthy (*dhoni / bhalo chala*)

- ◆ Large homestead with tin roof house
- ◆ More than 5 acres cultivatable land
- ◆ Large number of livestock
- ◆ Don't require any credit
- ◆ Own business
- ◆ Own bamboo and tree garden
- ◆ Hold cash money
- ◆ Own rice mill
- ◆ Own jeep/chadher gari, auto rickshaw
- ◆ Service holder
- ◆ Have food security throughout the year

2. Middle (*motamoti / moddom*)

- ◆ Homestead with tin or thatch roof house
- ◆ Land ownership: 2 to 5 acres
- ◆ 3 to 5 number of livestock (goat, pig, cattle buffalo)
- ◆ Require Tk 2000 to Tk.5000 amount of credit
- ◆ Small business
- ◆ Few households are in employment
- ◆ Have food security half of the year

3. Poor (*gorib / daridra*)

- ◆ Only homestead with small thatch roof
- ◆ No cultivatable land
- ◆ No livestock
- ◆ Require credit to survive
- ◆ No garden
- ◆ No cash money
- ◆ Day labour
- ◆ Have food insecurity and food supply depends on day labour



