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# **ANNEX-1**

## **TOR AND ITINERARY**

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# **TERMS OF REFERENCE**

## **FOR CONSULTANCY OF UNICEF ASSISTED RURAL WATER SUPPLY AND SANITATION PROGRAMME ACTIVITIES**

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### **I. OBJECTIVE**

- 1) To review and evaluate the UNICEF assisted rural water supply and sanitation programme during the transition period, 1992-1996, where the programme shifted from a focus on emergency and rehabilitation to a participatory community action approach.
- 2) To make recommendations for future programme strategies and approaches within the framework of the Community Action for Social Development Programme and the UNICEF Strategies in Water and Environmental Sanitation and in line with the National Socio-economic Development Plan (1996-2000) and National Plan of Action for Nutrition (NPAN).

### **II. SPECIFIC TASKS**

- 1) Evaluate progress made in the UNICEF assisted Water and Sanitation programme since its last evaluation in 1992, assessing the following elements:-
  - ▶ appropriateness of civil engineering design
  - ▶ quantity and quality of work completed
  - ▶ operation and maintenance systems established
  - ▶ training of personnel and communities for sustainability
  - ▶ cost effectiveness
  - ▶ utilization of funds for the various elements of the project
  - ▶ whether target populations served
  - ▶ effectiveness of sanitation and hygiene related activities
  - ▶ overall potential for long-term project sustainability
- 2) Review the achievements in sectoral policy, programme approach and strategy of the UNICEF and the government agencies regarding WATSAN sector during 1992 to 1996 and make recommendations on follow up.
- 3) Assess community participation and gender balance issues in programme implementation, operation & maintenance of the UNICEF supported facilities.
- 4) Assess and analyse the present situation of the Rural Water Supply and Sanitation sector in Cambodia including coverage, needs assessment, community ownership, maintenance of the water supply and sanitary facilities, ways of mobilization and communicating/disseminating messages to grassroots for behavioural changes, involvement of local/community groups and leaders, Government's political commitment and resource mobilization for Water and Sanitation, and cost of Water and Sanitation facilities.

- 5) Assess existing WATSAN processes and systems for monitoring and recommend improvements.
- 6) Derive lessons and best practices which could be adapted for wider application. Factors to consider could include but no limited to cost-effectiveness, social consideration, environmental quality, technical appropriateness, reliability and effective use of facilities.

### III. EVALUATION AREA

The evaluation will be conducted in selected provinces receiving UNICEF assistance in WATSAN. For practical reasons the evaluation team may decide to restrict detailed field work to about 2 to 3 districts of 2 to 3 priority provinces where considerable numbers of project activities have been implemented. Special attention will need to be paid to the CASD focus provinces for 1997.

### IV. COMPOSITION OF THE CONSULTANT TEAM

The team will be formed of two water engineers who are familiar with the low cost appropriate technologies and is fully aware of supporting the need of software component in WES activities. A community organizer will be also included who is familiar with the gender issues and social mobilization activities to assess the current situation of community involvement in WES activities and to suggest further improvement.

One of team members will be selected as the Team Leader, and he/she will be responsible for overall management of the team and preparation of the final report.

### V. TIME SCHEDULE

The team will be required to complete the evaluation within 5 weeks. Preferable timing will be in the months of September and October 1997.

▶ ***Estimated Time***

Arrival, briefing and desk study	1 week
Field visits	2 weeks
Analysis of results	1 week
Debriefing and final report	1 week
<b>Total</b>	<b>5 weeks</b>

### VI. MANAGEMENT OF THE CONSULTANCY

- 1) The consultant(s) will report to Mr. Jamie Meiklejohn, CASD Project Officer and Dr. Festo Patrick Kavishe will be second officer, responsible for overall supervision. They will also make regular reports to Dr. Mao Saray (Director of the Department of Rural Water Supply) and Dr. Chea Samnang (Director of the Department of Rural Health Care).

- 2) The project staff responsible for WATSAN within CASD will be the liaison officer to the team on behalf of UNICEF. He will be responsible for:-
  - ▶ arrangement of consultancy orientation meetings, interviews with government counterparts & IO/NGO partners, and field visits;
  - ▶ support for timely completion of the consultancy reports;
  - ▶ dissemination of consultancy reports to appropriate authorities and arrangement of round-up and consultative meetings.
  - ▶ provide programme information, data, reference and resources available with UNICEF and counterpart agencies.
- 3) The Ministry of Rural Development (main government counterpart for Water and Sanitation activities) will nominate 3 officials to liaise with the team, and they will be responsible for protocol arrangements with government authorities.
- 4) UNICEF Phnom Penh will provide a vehicle for the consultant team for field trips and Office facilities (space, computer etc.) during the review period in Cambodia.
- 5) The consultant team will provide the following reports and documents to UNICEF.
  - ▶ A scheduled workplan for the review within first week of mission.
  - ▶ Progress report (in brief form) on every Monday.
  - ▶ Draft report (on start of final week)
  - ▶ Final report (on end of mission)
- 6) The final report will be sent to Dr. Mac Saray, the Director of the Department of Rural Water Supply and Dr. Chea Saranang, the Director of the Department of Rural Health Care of the Ministry of Rural Development.

## **VII. TERMS OF PAYMENT**

- 1) A remuneration will be provided as per below:
  - ▶ Team Leader US\$270 per working day.
  - ▶ Team Members US\$250 per working day for each.
- 2) In the Individual Contract with the consultants, the following clause will be included:

*“During the evaluation period, the Consultant will not be employed by any other organization.”*

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# ITINERARY EVALUATION TEAM

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1. **WEDNESDAY, 3 SEPTEMBER 1997** (Loes Bellaart, Foort Bustraan)
  - ▶ Meeting with Leo Goulet, CARERE WATSAN Officer
  - ▶ Collect and organize documents
  
2. **MONDAY, 8 SEPTEMBER 1997** (All)
  - ▶ Formal start of Evaluation
  - ▶ Briefing meeting with UNICEF, MRD Senior Staff and Evaluation Team (ET).
  - ▶ Prepare workplan for 6 weeks, including time off during holidays.
  - ▶ Arrange interviews with resource persons, in - and outside UNICEF
  - ▶ Collect and study documents
  
3. **TUESDAY, 9 SEPTEMBER 1997** (All)
  - ▶ Finalize travel plan for first field week
  - ▶ Meeting with Ms. Ros Sivanna (UNICEF-CD Assistant Project Officer)
  - ▶ Meeting with Mr. Ken Vath (Director Potable Water of Ministry of Mine)
  - ▶ Meeting with Mr. Louis O'Brien, Director PFD (Partners for Development)
  - ▶ Initiate/arrange for 2-3 additional survey teams for data gathering
  
4. **WEDNESDAY, 10 SEPTEMBER 1997** (All)
  - ▶ Finalize travel plan for second field week
  - ▶ Meeting with Mr. Hem Sovannarith (UNICEF-CD Assistant Project Officer)
  - ▶ Meeting with Mr. Richard Puni (UNICEF Officer)
  - ▶ Meeting with Dr. Chea Samnang, Director of Rural Health Care Department, MRD.
  - ▶ Meeting with Dr. Yim Sam Oeun, Director of Community Development Department, MRD
  - ▶ Meeting with Ministry of Planning
  
5. **THURSDAY, 11 SEPTEMBER 1997** (All)
  - ▶ Evaluation Team session on strategic and programme issues
  - ▶ Synthesize WATSAN issues from CASD process
  - ▶ Prepare locations and details for field trip to Svay Rieng
  - ▶ Prepare locations for 2 survey teams
  - ▶ Determine points for field checklists
  - ▶ Collect and study documents
  
6. **FRIDAY, 12 SEPTEMBER 1997** (All)
  - ▶ Finalizing survey team checklists and identify locations
  - ▶ Meeting with H.E. Sous Kong, General Director of Planning, MRD
  - ▶ Weekly briefing session with UNICEF
  
7. **SATURDAY, 13 SEPTEMBER 1997** (Loes Bellaart, Foort Bustraan)
  - ▶ Test checklist for Hand Pumps and Latrines in Kandal and revisions
  - ▶ Continue on question lists for CASD provinces
  - ▶ Further develop issues

8. **SUNDAY, 14 SEPTEMBER 1997** (Loes Bellaart, Foort Bustraan)
  - ▶ Finalize field question lists
  - ▶ 0.5 days input
9. **MONDAY, 15 SEPTEMBER 1997**
  - ▶ Prepare field arrangements and travel to Svay Rieng (Loes B., Foort B.)
  - ▶ Meetings with CASD in Province and district (Loes B., Foort B.)
  - ▶ Attend meeting MRD and PDRD of 6 CASD provinces (Kumba K.)
10. **TUESDAY, 16 SEPTEMBER 1997**
  - ▶ Field visit to CASD village in Ang Ta So (Loes B.)
  - ▶ Field visit to latrine locations of National programme (Foort B.)
  - ▶ Travel to Svay Rieng and meet officials (Kumba K.)
11. **WEDNESDAY, 17 SEPTEMBER 1997**
  - ▶ Field visit to 1997 CASD village (Svay Teap, Svay Rieng province) - (Loes B.)
  - ▶ Field visit to 1996 CASD commune - technical issues (Foort B.)
  - ▶ Meetings Province/district and field visit to old wells in Svay Teap (Kumba K.)  
(have to cancel trip to Romeas Hek - flooding)
12. **THURSDAY, 18 SEPTEMBER 1997**
  - ▶ Organize data for FFP latrines and field visit to Ang Ta So and FFP village and travel to Prey Veng (Foort B.)
  - ▶ Provincial meetings and field visit to Ang Ta So and FFP village and travel to Prey Veng (Loes B.)
  - ▶ Field visit to Ang Ta So - new wells and travel to Prey Veng  
(have to cancel field visit to AKDEP locations - flooded, bad roads)
13. **FRIDAY, 19 SEPTEMBER 1997**
  - ▶ Province meeting and field visit to latrines and VHV training and back to Phnom Penh (Loes B.)
  - ▶ Meet AKDEP in office and field visit old wells (Peam Ro) and Prasac-3 and back to Phnom Penh (Foort B.; Kumba K.)
14. **SATURDAY, 20 SEPTEMBER 1997**
  - ▶ Enter data in computer (Kumba K., Foort B.)
  - ▶ Analyze issues and relevant documents
15. **MONDAY, 22 SEPTEMBER 1997**
  - ▶ Develop issues and group them
16. **TUESDAY, 23 SEPTEMBER 1997**
  - ▶ Finalize issues
  - ▶ Prepare details workplan for field visits
17. **WEDNESDAY, 24 SEPTEMBER 1997**
  - ▶ Travel to Kratie & Bttambang
  - ▶ (in Kratie) make detailed plan with PFD and PDRD

- ▶ (in Battambang) participate in CASD WATSAN training and meet PDRD officials.
- 18. THURSDAY, 25 SEPTEMBER 1997**
- ▶ (Kratie) meeting in district Chhlong: 1 vice PDRD, District 2 people (WA; MOH)
  - ▶ (Kratie) field visit Han Chey (old UNICEF wells, PFD wells, IRP, school latrines)
  - ▶ (Battambang) participate in CASD WATSAN training
  - ▶ (Battambang) field visit to survey existing wells
- 19. FRIDAY, 26 SEPTEMBER 1997**
- ▶ (Kratie) field visit (Iron Reduction Plants, School sanitation projects)
  - ▶ (Battambang) field visit with CASD WATSAN training
  - ▶ (Battambang) field visit to survey existing wells
- 20. SATURDAY, 27 SEPTEMBER 1997**
- ▶ Return from Provinces by boat or air
  - ▶ Organize field data
- 21. MONDAY, 29 SEPTEMBER 1997**
- ▶ Briefing with survey teams
  - ▶ Team meeting comparing issues from field
  - ▶ Prepare table of content for report
- 22. TUESDAY, 30 SEPTEMBER 1997**
- ▶ Field information and survey data analysis
- 23. THURSDAY 2 - FRIDAY 3, OCTOBER 1997**
- ▶ Survey data analysis
- 24. SATURDAY 4 - THURSDAY 9, OCTOBER 1997**
- ▶ Writing draft report
- 25. FRIDAY, 10 OCTOBER 1997**
- ▶ Preparation for debriefing & debriefing session with MRD
- 26. MONDAY 13 - TUESDAY 14 OCTOBER 1997**
- ▶ Start on Final version
- 27. WEDNESDAY, 15 OCTOBER 1997**
- ▶ Debriefing with UNICEF
  - ▶ Continuation with Final version
- 28. THURSDAY, 16 OCTOBER 1997**
- ▶ Continuation with Final version
- 29. MONDAY, 27 OCTOBER 1997**
- ▶ Final version submitted

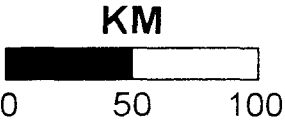
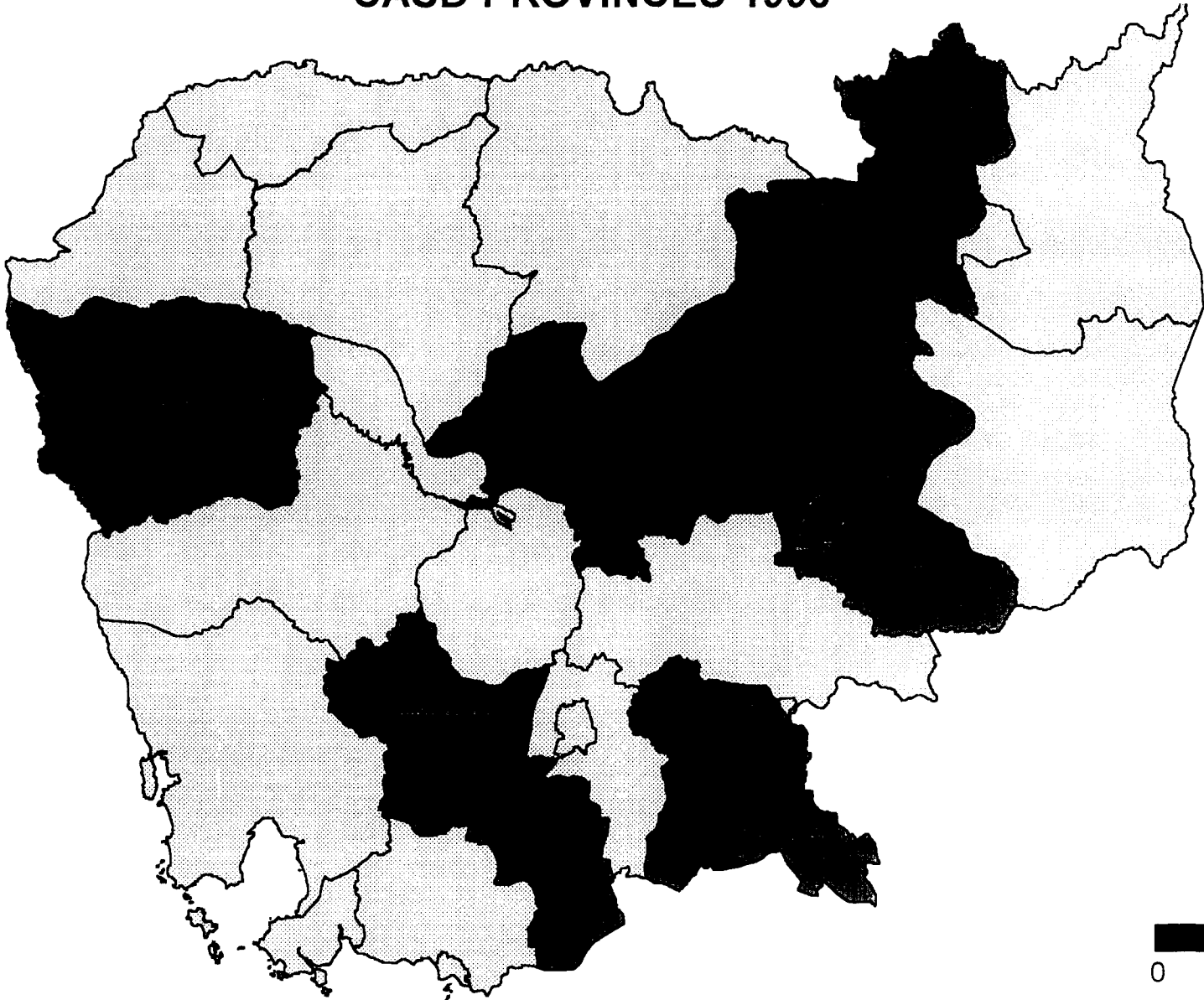
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# **ANNEX-2**

## **MAP OF CASD AREAS**

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# CASD PROVINCES 1998



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# **ANNEX-3**

## **REFERENCES**

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**ANNEX - III**

**DOCUMENT USED FOR THE EVALUATION**

#	TITLE	BY	DATE
1	UNICEF/OXFAM Evaluation Report on Rural Water Supply	OXFAM/UNICEF	Sep. 1992
2	Government/UNICEF Plan of Operations 1996-2000	UNICEF	1996
3	First Socio-Economic Development Plan	Ministry of Planning	1996
4	Public Investment Programme 1997-1999	Ministry of Planning	1997
5	Hygiene Education Strategies for region I for MOH, Thailand	Simpson Herbert, M WASH report No. 210	1987
6	UNICEF Strategies in Water and Environmental Sanitation	UNICEF	Apr. 1995
7	Multiple Indicator Cluster Survey	Ministry of Planning	1996
8	Investing in Nutrition in Cambodia, report or RETA study	Ministry of Planning	Oct. 1997
9	WES Technical Guidelines: Water handbook	UNICEF	Jun. 1997
10	1st Draft of Integrated RWSS programme implementation	UNICEF	1997
11	Sector presentation of Sanitation programme of RHC/MRD	PDRD/RHC	Jan. 1997
12	Motivating better hygiene behavior	UNICEF	1995
13	National Workshop on VLOM Hand pumps	B. Kjellerup	Feb. 1994
14	IRC Final Report of Kompong Chhnang integrated programme	IRC staff	Jul. 1996
15	Final Report NCCDP School sanitation, Vol. 1 and 2	NCCDP/AICF-USA	Nov. 1996
16	Progress Report on Iodine supply, NC Village Water System	NCCDP/AICF-USA	Jan. 1997
17	Final Report of School Sanitation, Banteay Meanchey	CONCERN	May 1996
18	First Report of UNICEF/GRET RWS, Kandal and Prey Veng	ACAPE/AKDEP	Aug. 1997
19	1997 CASD Frame for Project Plan of Actions and Budgets	UNICEF	Nov. 1996
20	Overall progress of CASD Programme, 1997	UNICEF	Dec. 1997
21	Towards a Better Future, Analysis of situation in Cambodia	UNICEF	1995
22	Facts for Life	UNICEF/Others	1993
23	Water and Hygiene Education Training	World Education	Mar. 1995
24	Notes on 2nd workshop on VDC strengthening	UNICEF	Aug. 1997
25	Assessment, Analysis and Action for Children and Women	UNICEF	1997

### ANNEX 3: DOCUMENTS USED FOR EVALUATION

No.	Title	By	Date
1	Unicef/Oxfam evaluation RWS	Oxfam/Unicef	Sep-92
2	Government-Unicef Plan of Operations 1996-2000	Unicef	1996
3	First Socio - Economic Develop Plan	Ministry of Planning	1996
4	Public Investment Programme 1997 - 1999	Ministry of Planning	1997
5	Hygiene Education strategies for region 1 for MoH, Thailand	Simpson Herbert, M WASH report no.210	1987
6	Unicef strategies in Water and Environmental Sanitation	UNICEF	Apr-95
7	Multiple Indicator Cluster survey	Ministry of Planning	1996
8	Investing in Nutrition in Cambodia, report of a RETA study	Ministry of Planning	Oct-97
9	WES technical guidelines: water handbook	UNICEF	Jun-97
10	1st draft of Integrated RWSS programme implementation	UNICEF	1997
11	Sector Presentation of Sanitation programme of RHC/MRD	PDRD/RHC	Jan-97
12	Motivating Better hygiene behaviour	UNICEF	1995
13	National workshp on VLOM handpumps	B.Kjellerup	Feb-94
14	IRC final report of K/Chhnang integrated programme	IRC staff	Jul-96
15	Final report NCCDP School sanitation , vol 1 & 2	NCCDP / AICF-USA	Nov-96
16	Progress report on Iodine suppl.NC Village Water system	NCCDP / AICF-USA	Jan-97
17	Final report School Sanitation Bantay Meanchey by Concern	Concern	May-96
18	First report UNICEF/GRET RWS Kandal/Prey Veng	ACAPE/AKDEP	Aug-97
19	1997 CASD Frame for Project Plan of Actions + budgets	UNICEF	Nov-96
20	Overall progress CASD 01-06/97	UNICEF	Jun-97
21	Towards a Better Future, Analysis of situation in Cambodia	UNICEF	1995
22	Fact for Life	UNICEF & others	1993
23	Water & Hygiene education Training	World Education	Mar-95
24	Notes on 2nd workshop on VDC strengthening	UNICEF	Aug-97
25	Assessment, Analysis and Action for children & Women	UNICEF	1997

**ANNEX-4**

**ORGANIZATION CHART**

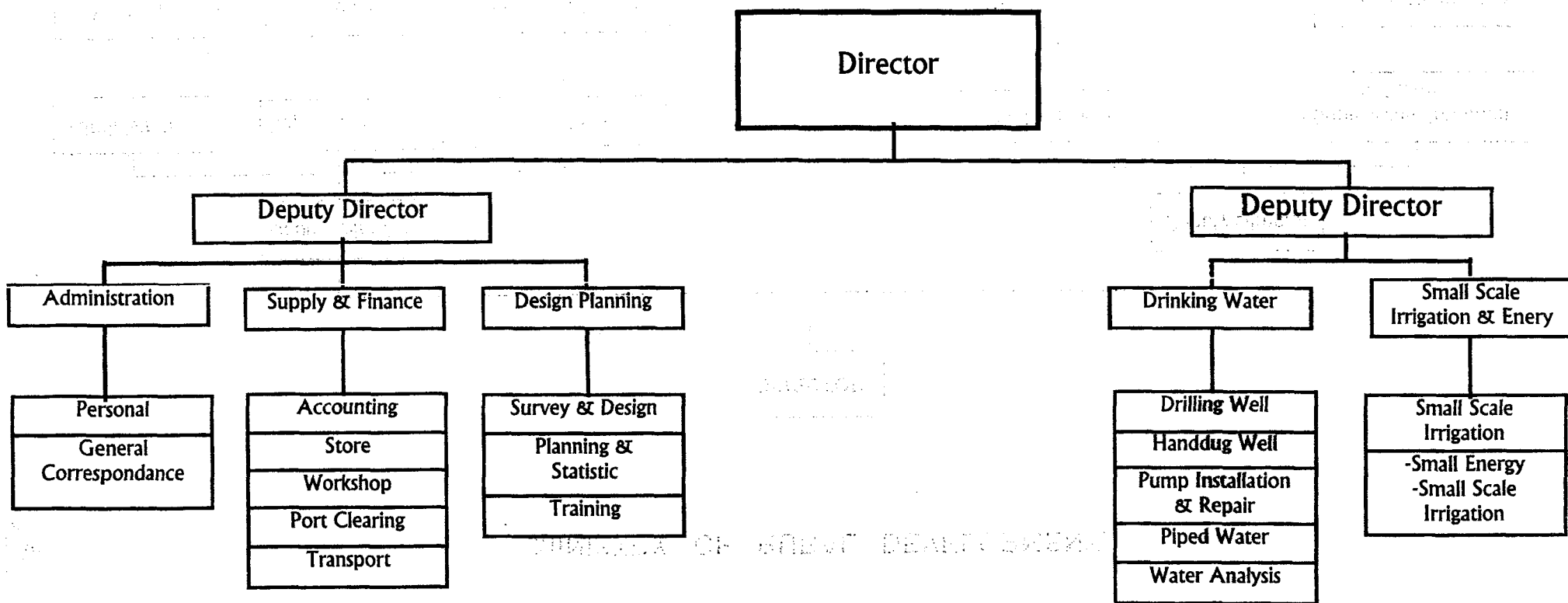
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**MINISTRY OF RURAL  
DEVELOPMENT**

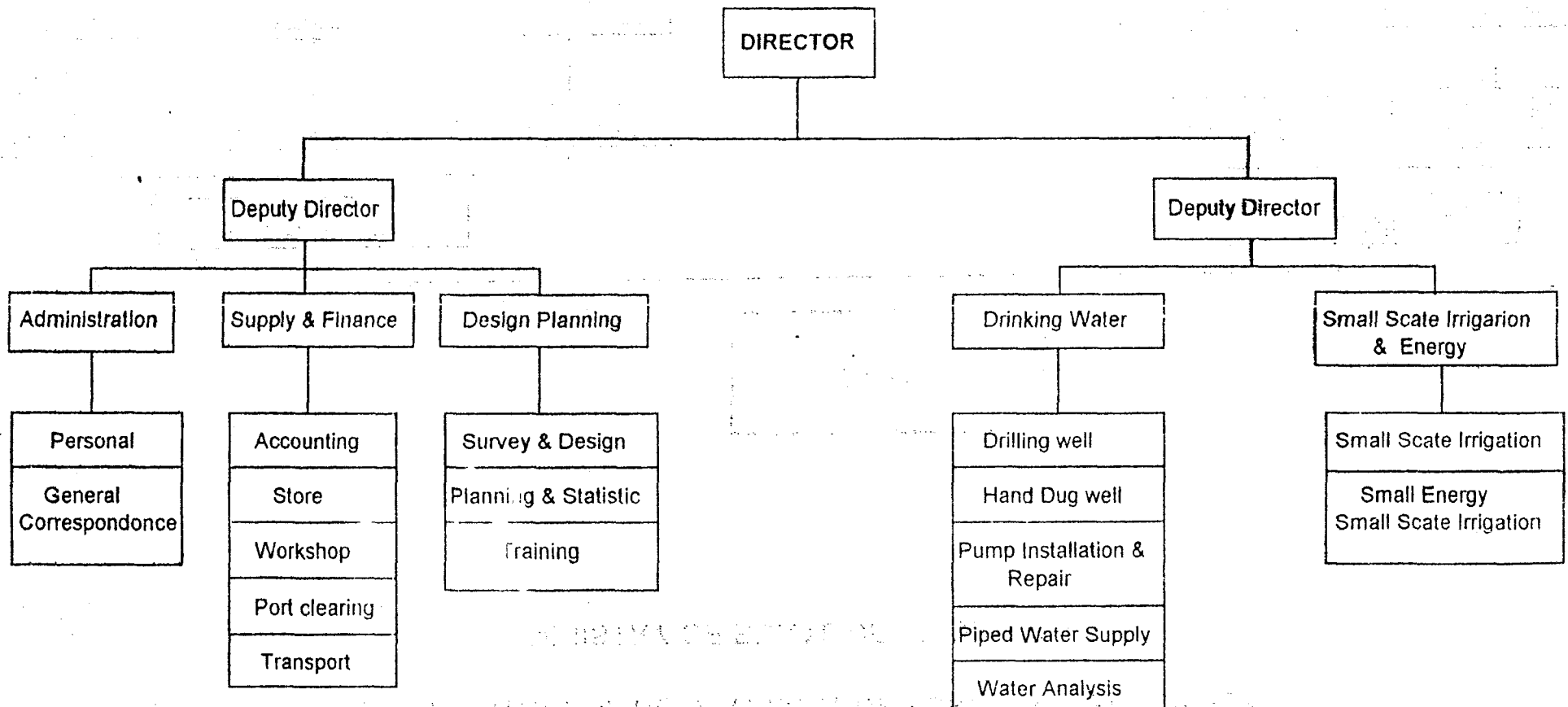
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ORGANISATION OF DEPARTMENT OF RURAL WATER SUPPLY

MINISTRY OF RURAL DEVELOPMENT



ORGANIZATION OF DEPARTMENT OF RURAL WATER SUPPLY  
MINISTRY OF RURAL DEVELOPMENT.





# **ANNEX-5**

## **WATSAN BUDGET ESTIMATES**

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**RESOURCE REQUIREMENTS FOR UNIVERSAL ACCESS TO  
WATER SUPPLY IN RURAL AREAS, 1996-2000**

Province	Total pop. to be covered 1996-2000 (000's)	Total number of water points required	Total Costs (US\$ 000's)
Banteay Meanchey	320	3,377	1,732
Battambang	409	3,750	2,392
Kampot	403	4,814	1,942
Kandal	623	6,405	3,263
Koh Kong	72	738	376
Kompong Cham	1,449	14,897	7,549
Kompong Chhnang	192	1,600	1,198
Kompong Speu	345	4,117	1,661
Kompong Thom	481	7,215	1,803
Kratie	120	1,269	601
Mondulhiri	18	9 schemes	90
Phnom Penh	0	0	0
Preah Vihear	83	904	437
Prey Veng	682	9,287	3,004
Pursat	169	1,408	1,056
Ratanakiri	70	35 schemes	350
Siem Reap	532	6,064	2,566
Sihanouk Ville	0	0	0
Stung Treng	57	554	310
Svay Rieng	341	4,733	1,429
Takeo	516	6,167	2,488
<b>Total</b>	<b>6,882</b>	<b>77,300</b>	<b>34,247</b>

**RURAL WATER SUPPLY INVESTMENT REQUIREMENTS, 1996-2000**

(US\$ 000's)

Technology	1996	1997	1998	1999	2000	Total
Hand-dug well	900	900	1,050	1,050	1,050	4,950
Dug/drilled well	1,182	1,125	1,310	1,310	1,310	6,187
Hand pump shallow well	1,688	2,250	2,250	2,250	2,250	10,688
Hand pump deep well	1,330	1,425	2,090	2,090	2,090	9,025
<b>Total</b>	<b>5,100</b>	<b>5,700</b>	<b>6,700</b>	<b>6,700</b>	<b>6,700</b>	<b>30,900</b>

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1972-1973

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1974-1975

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2018-2019  
2020-2021  
2022-2023  
2024-2025

# **ANNEX-6**

**CASD BUDGET  
1996 - 2000**

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## 1. UNICEF FINANCIAL ALLOCATIONS, 1996-2000

*(In thousands of US Dollars)*

Programmes	General Resources	Supplementary Resources	Total
Community Action for Social Development (YC601)	2,555	17,595	20,150
Health (YH602)	2,255	15,495	17,750
Basic Education (YE603)	1,800	17,500	19,300
Advocacy, Planning and Support (YT604)	1,750	10,750	12,500
Programme Support	3,190	360	3,550
<b>Total Country Programme</b>	<b>11,550</b>	<b>61,700</b>	<b>73,250</b>

## 2. UNICEF GENERAL RESOURCES, YEARLY

*(In thousands of US Dollars)*

Programmes	1996	1997	1998	1999	2000	Total
Community Action for Social Development (YC601)	581	531	481	481	481	2,555
Health (YH602)	581	456	406	406	406	2,255
Basic Education (YE603)	475	350	325	325	325	1,800
Advocacy, Planning and Support (YT604)	425	425	300	300	300	1,750
Programme Support	638	638	638	638	638	3,190
<b>Total Country Programme</b>	<b>2,700</b>	<b>2,400</b>	<b>2,150</b>	<b>2,150</b>	<b>2,150</b>	<b>11,550</b>

## 3. UNICEF SUPPLEMENTARY RESOURCES, YEARLY

*(In thousands of US Dollars)*

Programmes	1996	1997	1998	1999	2000	Total
Community Action for Social Development (YC601)	3,539	3,514	3,514	3,514	481	17,595
Health (YH602)	2,969	3,094	3,144	3,144	3,144	15,495
Basic Education (YE603)	3,500	3,500	3,500	3,500	3,500	17,500
Advocacy, Planning and Support (YT604)	2,075	2,075	2,200	2,200	2,200	10,750
Programme Support	72	72	72	72	72	360
<b>Total Country Programme</b>	<b>12,155</b>	<b>12,255</b>	<b>12,430</b>	<b>12,430</b>	<b>9,397</b>	<b>61,700</b>

#### 4. TOTAL UNICEF RESOURCES, YEARLY

*(In thousands of US Dollars)*

<b>Programmes</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>Total</b>
Community Action for Social Development (YC601)	4,120	4,045	3,995	3,995	3,995	20,150
Health (YH602)	3,550	3,550	3,550	3,550	3,550	17,750
Basic Education (YE603)	3,975	3,850	3,825	3,825	3,825	19,300
Advocacy, Planning and Support (YT604)	2,500	2,500	2,500	2,500	2,500	12,500
Programme Support	710	710	710	710	710	3,550
<b>Total Country Programme</b>	<b>14,855</b>	<b>14,655</b>	<b>14,580</b>	<b>14,580</b>	<b>14,580</b>	<b>73,250</b>

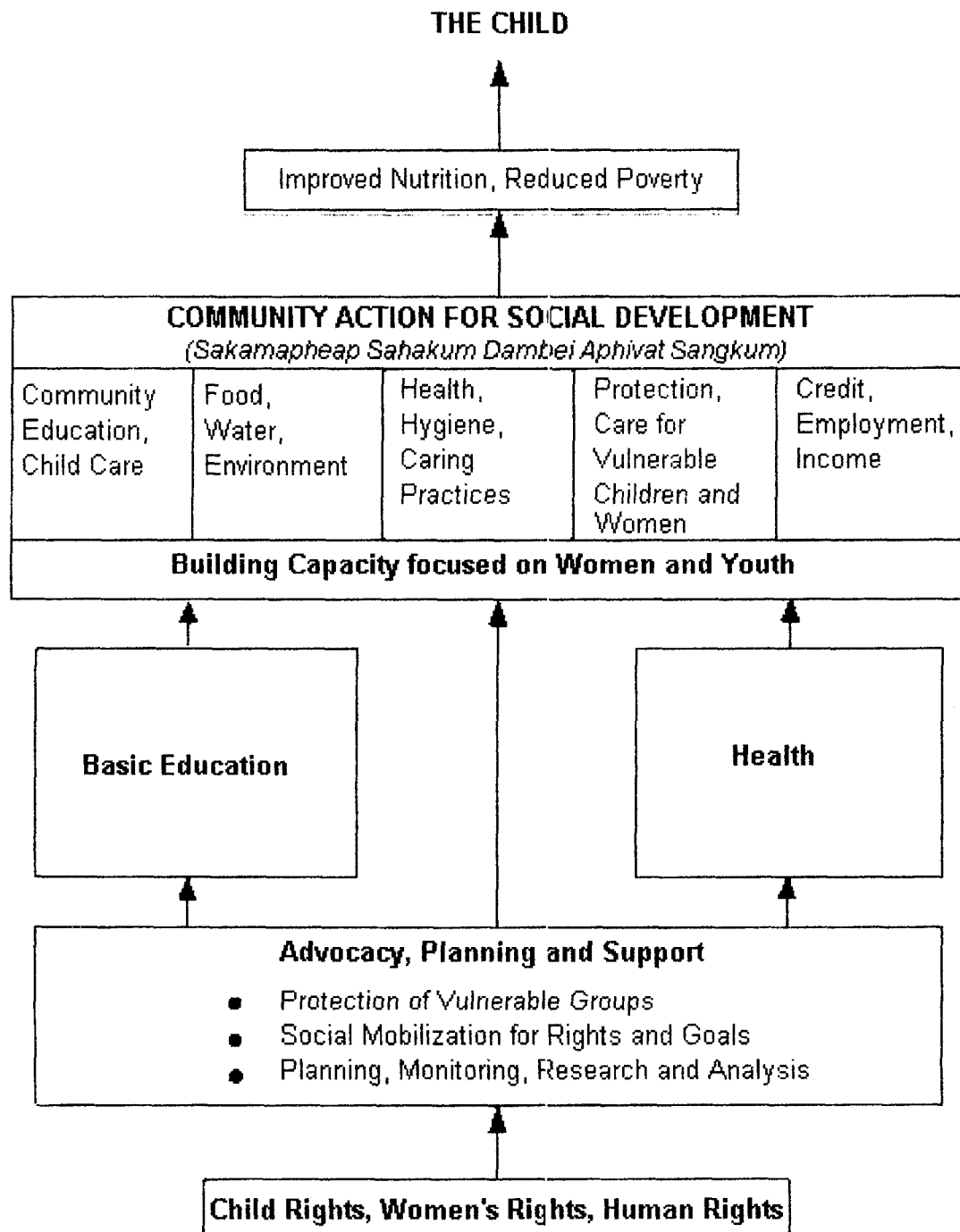


# **ANNEX-7**

## **CASD PROGRAMME STRUCTURE**

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## Programme Structure



# Administrative Procedures

10/10/2010

10/10/2010

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# **ANNEX-8**

## **CASD PROVINCIAL DETAILS**

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## 1. CASD COVERAGE IN 1996

S/N	Province	Number			Number of Population			Number of household	Remarks
		D	C	V	Total	Female	< 5 chil.		
1	Svay Rieng	2	4	43	26,547	13,785	3,961	5,290	<5 = 14.92% of total population
2	Battambang	1	3	28	38,716	21,010	4,812	7,525	<5 = 12.43% of total population (not no. of HH, but families)
<b>Total: 2 provinces</b>		<b>3</b>	<b>7</b>	<b>71</b>	<b>65,263</b>	<b>34,795</b>	<b>8,823</b>	<b>12,815</b>	

### 1.1 Percentage of CASD Coverage

	Number				Population			Number of Household	Remarks
	P	D	C	V	Total	Female	< 5 Chil.		
National #	22	170*	1,544*	12,738*	10,702,000	5,583,000	2,011,000	1,434,068	< 5 = 13.40%
Total of CASD coverage	2	3	7	71	65,263	34,795	8,823	12,815	
% of CASD coverage	9.09%	1.76%	0.45%	0.56%	0.61%	0.62%	0.44%	0.89%	

P = Province,

D = District,

HH = Household

C = Commune,

V = Village,

Chil. = Children

\* = UNTAC electoral data of 1992,

## 2. CASD COVERAGE IN 1997

S/N	Province	Number			Number of Population			Number of household	Remarks
		D	C	V	Total	Female	< 5 Chil.		
1	Svay Rieng	4	9	92	56,939	30,178	8,307	11,353	<5 = 14.59% of total population
2	Battambang	1	3	28	38,716	21,010	4,812	7,525	<5 = 12.43% of total population (not no. of HH, but families)
3	Kompong Thom	1	2	29	26,056	12,572	3,355	4,536	<5 chil. estimation of 16% of total population
4	Prey Veng	3	3	28	27,202	14,407	3,869	4,808	<5 = 14.32% of total population
5	Takeo	2	3	50	38,008	19,662	6,256	7,034	<5 chil. estimation of 14.46% of total population
6	Kompong Speu	1	2	37	12,853	6,725	2,609	2,556	- < 5 chil. estimation of 20.30% of total population (not # of HH, but families)
<b>Total: 6 provinces</b>		<b>12</b>	<b>22</b>	<b>264</b>	<b>199,774</b>	<b>104,554</b>	<b>29,374</b>	<b>37,812</b>	

## 2.2 Percentage of CASD Coverage

	Number				Population			Number of household	Remarks
	P	D	C	V	Total	Female	< 5 chil.		
National number	22	170 *	1,544*	12,738*	10,702,000	5,583,000	2,011,000	1,434,068	< 5 = 13.40%
Total of CASD coverage	6	12	22	264	199,774	104,554	29,374	37,812	
% of CASD coverage	27.27%	7.05%	1.42%	2.08%	1.86%	1.87%	1.46%	2.64%	

P = Province,

C = Commune,

\* = UNTAC electoral data of 1992,

D = District,

V = Village,

HH = Household,

Chil. = Children



**SUMMARY OF THE LIST OF CASD TARGET VILLAGES IN 1997/1998**

Province		District		Commune		#. of villages
1	Battambang	1	Battambang	1	Ta Meun*	10
				2	Chrey*	10
				3	Bansay Treng	08
<b>SUB TOTAL (1)</b>						<b>28</b>
2	Kompong Speu	1	Samrong Tong	1	Khtum Krang	17
				2	Tang Krouch	20
<b>SUB TOTAL (2)</b>						<b>37</b>
3	Kampong Thom	1	Kampong Svay	1	Kampong Svay	12
				2	Trapeang Russey	17
<b>SUB TOTAL (3)</b>						<b>29</b>
4	Prey Veng	1	Ba Phnom	1	Boeung Preah	14
			Kampong Trabek	1	Thkov	7
			Kanh Chriech	1	Chong Ampil	7
<b>SUB TOTAL (4)</b>						<b>28</b>
5	Svay Rieng	1	Kampong Ro	1	Thnot	11
				2	Ampil	10
				3	Trass*	13
		2	Romeas Hek	1	Andong Trabek*	6
				2	Ang Taso*	12
				3	Doun Sor	11
		3	Svay Chrum	1	Svay Thom*	12
				2	Romeang Thkol	9
				3	Sambou	8
4	Svay Teap	1	Romeang Thkol	9		
		2	Sambou	8		
<b>SUB TOTAL (5)</b>						<b>92</b>
6	Takeo	1	Doun Keo	1	Roka Krao	14
			Tram Kak	1	Leay Bou	25
				2	Trapeang Thom Cheung	11
<b>SUB TOTAL (6)</b>						<b>50</b>
<b>GRAND TOTAL</b>						<b>264</b>

*NB: \* 1996 villages*

B

# **ANNEX-9**

## **HAND PUMP SURVEY FORMS AND RESULTS**

B

# HAND PUMP MONITORING SHEET

(No., \_\_\_\_\_ Date: \_\_\_\_/09/97)

## 1. GENERAL DATA

Monitor name: \_\_\_\_\_

Province: _____	Well no.: _____
District: _____	Built in: _____
Commune: _____	Pump: _____
Village: _____	Users: _____

## 2. HAND PUMP (TECHNICAL)

**BY OBSERVATION**

Description	A	B	C	Remarks
2.1 Water provision	normal	little	no water	
2.2 Pumping	easy		difficult	
2.3 Platform condition	good	some cracks	broken	
2.4 Platform cleanness	clean	bit dirty	dirty	
2.5 Drainage channel	good	short/broken	nothing	
2.6 Water around platform	no	bit	lot	
2.7 Water quality	good	medium	bad	
2.8 Is there a fence?	yes		no	

*Other Observations:* \_\_\_\_\_

## 3. HAND PUMP (SOCIAL)

**BY ASKING USERS OR NEAREST HOUSEHOLD**

Description	A	B	C	Remarks
3.1 Persons in Well committee	men, women	only men	no one	
3.2 Was a caretaker selected	yes		no one	
3.3 Site selection by	uses < \$25	chief	drill team	
3.4 User contribution	< \$25	\$25-\$50	> \$50	
3.5 Used for drinking/cooking	yes		no	
3.6 Used for bathing/washing	yes		no	
3.7 Used for animals	yes		no	
3.8 Used for gardening	yes		no	
3.9 Repair training received	yes		no	
3.10 Pump breakdown	never	1-3 times	>3 times	
3.11 Do they have tools to repair	yes		no	
3.12 Know where to buy spares	yes		no	
3.13 Who repaired pump	village	province	PNP	
3.14 Time till repair was done	< 1 week	1-2 weeks	> 2 weeks	
3.15 H/E training received	more times	1 time	no	

*Other Observations:* \_\_\_\_\_

## SUMMARY OF ANALYSIS HAND PUMP SURVEY

### Introduction

Forms were prepared at the end of the first week of the Evaluation and it was explained to the survey staff (2 SAWA Cambodia staff and 3 Government counterpart staff) how to fill them in. SC staff were going to execute a small survey each in a different Province and the government counterparts would join up with the Evaluation Team. On the following Saturday morning both were tried out in Kandal Province, with the Evaluation Team leader, to provide practice for the SC staff and to pretest the forms. After this some questions were changed and copies were made.

A survey of this nature was not originally included in the evaluation, but came up at the first week by the Evaluation Team as being necessary to be able to say something on the existing facilities. The forms were therefor kept simple and answers were put in categories, to make the analysis easier.

### Questions deleted

During the analysis it became clear that some questions were still not completely understood by some of the surveyors or their supervisors and they could not be used anymore.

**Question 2.2 & 2.4:** The question was mend to give an indication on the condition of the pump, but in the end there was too much bias and it was also filled for broken pumps.

**Question 3.1:** The question was mend to give an answer on the existing Water point committees and their composition, but too many times this question was answered positively when only some users themselves took responsibility or when there was a VDC only.

**Question 3.2:** Similar to question 3.1, that almost all answers given were yes, because always someone feels responsible for the pump and may have been involved when the pump was installed; but question was put to find out how many formal caretakers were appointed by water point committees.

**Question 3.3:** Because procedures for site selection for the existing wells were very different, this was too difficult to fill in properly; for the private wells drilling teams asked around who wanted a well; some users had money and pointed to a place; other times people cam together and only the ones who contributed could point to a place.

**Question 3.9:** Here only formal training was mend, but some surveyors also included the informal one, whereby one of the future users joined the installation team during pump installation.

**Question 3.13 & 3.14:** This was filled also mostly when no breakdown had occurred; also there was a lot of guessing by the surveyors, because they could not meet the people who knew the exact situation.

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
B1	1992	India	15	A	B	B	A	B	C	A	A	A	C	A	A	A	A	B
B10	1994	VN6	1	A	A	A	A	A	C	B	C	C	A	C	B	C	C	C
B11	1994	India	20	A	A	A	A	A	A	C	A	A	A	A	B	C	A	C
B12	1994	India	30	A	A	B	A	A	C	C	A	A	A	A	B	C	A	A
B13	1994	Afridev	15	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A
B14	1992	VN6	25	A	B	B	B	A	C	A	A	A	A	A	C	A	A	C
B15	1994	India	20	A	A	B	A	A	C	B	A	A	A	A	A	C	C	C
B16	1994	India	20	A	A	B	A	A	C	A	A	A	A	A	A	C	C	C
B17	1992	India	30	A	B	B	A	A	C	A	A	A	A	A	B	A	A	B
B18	1994	India	40	A	A	B	B	A	C	B	A	A	A	A	A	C	C	C
B19	1994	India	50	B	C	C	B	A	C	B	A	A	A	A	B	C	C	C
B2	1993	India	20	A	A	A	B	A	C	A	C	A	A	A	A	A	A	B
B20	1994	India	50	A	A	B	A	A	C	B	A	A	A	A	A	C	C	C
B21	1996	India	HOS	A	B	B	A	A	C	B	A	A	A	A	B	C	C	C
B23	1994	Afridev	20	A	A	A	A	A	C	B	A	A	A	A	A	A	A	B
B24	1992	India	15	A	B	B	A	A	C	B	A	A	A	A	A	C	A	C
B25	1992	India	20	A	C	B	B	A	C	A	A	A	A	A	B	C	C	C
B26	1992	India	20	A	C	C	A	A	C	A	A	A	A	A	A	C	C	C
B27	1992	India	SCH	A	C	C	B	A	C	B	A	A	A	A	A	C	C	C
B28	1992	VN6	8	A	B	A	B	A	C	C	A	A	A	A	C	A	A	C
B29	1992	VN6	20	C	B	B	A	A	C	B	C	C	C	C	C	C	A	B
B3	1995	India	35	A	B	B	A	A	C	C	A	A	A	A	A	A	A	B
B30	1992	VN6	PAG	A	A	A	A	A	C	C	A	A	A	A	C	A	A	B
B31	1992	India	8	A	C	B	A	A	C	A	A	A	A	A	B	C	C	C
B32	1992	India	SCH	A	B	B	A	A	C	C	A	A	A	A	A	C	C	C
B33	1995	India	10	A	C	A	C	A	C	B	A	A	A	A	B	C	C	C
B34	1995	India	24	A	A	A	B	A	C	C	A	A	A	A	A	C	A	B
B35	1995	India	25	A	A	A	A	A	A	C	A	A	A	A	A	C	C	C
B36	1995	India	15	A	B	A	A	A	A	C	A	A	A	A	A	C	C	C
B37	1995	India	PAG	A	B	A	A	A	C	C	A	A	A	A	A	C	C	C
B38	1995	India	27	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
B39	1994	India	15	A	B	A	A	A	C	C	A	A	A	A	A	C	C	B
B4	1995	India	25	A	A	B	A	A	C	B	A	A	A	A	A	A	A	B
B40	1994	India	15	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
B41	1994	India	30	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
B42	1994	India	15	A	B	A	A	A	C	C	A	A	A	A	A	C	C	C
B43	1994	India	15	A	B	A	A	A	A	C	A	A	A	A	A	C	C	C
B44	1994	India	15	A	B	A	A	A	A	C	A	A	A	A	A	C	C	C
B5	1995	India	15	B	B	A	A	B	C	B	C	C	C	C	B	C	C	C
B6	1995	India	15	A	B	A	A	A	C	C	A	A	A	A	A	C	C	B
B7	1994	India	8	A	A	B	A	A	A	B	A	A	A	A	A	C	C	C
B8	1994	India	15	A	C	B	C	A	C	B	A	A	A	A	C	C	C	C
B9	1994	India	15	A	A	A	A	A	A	B	A	A	A	A	A	C	A	C
K1	1995	VN6	40	A	A	A	B	B	C	B	A	A	A	A	A	A	A	B
K10	1993	India	30	A	A	A	A	A	C	B	A	A	A	A	A	C	C	C
K100	1989	India	10	A	C	B	B	A	C	A	A	A	A	A	B	A	A	C
K11	1993	India	35	B	A	A	B	C	C	A	A	A	A	C	C	C	C	C
K12	1988	India	10	A	B	B	B	A	C	A	A	A	A	A	B	C	C	C
K13	1993	India	30	A	A	A	A	A	C	A	A	A	A	A	A	A	A	C
K14	1993	India	10	A	B	A	A	A	C	A	A	A	A	A	A	C	C	C
K15	1993	India	40	A	B	B	B	C	C	A	A	A	A	A	A	C	C	C
K16	1993	India	20	A	A	A	A	A	C	A	A	A	A	A	B	A	A	C
K17	1995	VN6	20	A	A	A	A	A	A	B	A	A	A	A	A	C	C	C
K18	1993	India	25	A	A	A	B	B	C	A	A	A	A	A	A	C	C	C
K19	1991	India	10	B	B	A	B	A	C	A	A	A	C	A	B	C	C	C
K2	1995	Afridev	30	A	A	A	B	B	C	B	A	A	A	A	A	C	C	C
K20	1993	India	5	A	A	A	A	A	A	A	A	A	A	A	A	C	C	C
K21	1989	India	20	A	A	A	A	A	C	A	A	A	A	C	B	C	C	C
K22	1991	VN6	18	A	A	B	C	A	C	B	A	A	A	A	B	A	A	C
K23	1989	India	20	A	B	B	B	A	C	A	A	A	A	A	C	B	A	C
K24	1991	India	30	A	A	A	A	A	C	A	A	A	C	A	B	C	C	C
K25	1994	VN6	35	A	A	A	A	B	C	B	A	A	A	A	B	C	C	C



## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
K26	1989	VN6	30	A	A	A	A	A	C	A	A	A	A	A	B	A	A	C
K27	1994	VN6	30	A	A	A	A	B	A	A	A	A	A	B	A	A	A	C
K28	1993	India	30	A	A	A	A	A	C	B	A	A	A	A	A	C	C	C
K29	1994	VN6	5	A	C	A	C	B	C	B	A	A	A	A	B	A	A	C
K3	1995	Afridev	20	C	B	A	B	A	C	A	A	A	A	A	B	A	A	C
K30	1993	India	40	C	B	A	A	A	C	B	A	A	A	A	C	C	C	C
K31	1993	India	20	A	A	A	A	B	A	A	A	A	A	C	C	C	C	C
K32	1989	India	30	C	B	A	A	B	C	B	A	A	A	A	C	C	C	C
K33	1993	India	35	A	A	A	A	A	C	B	A	A	A	A	B	C	C	C
K34	1994	VN6	3	B	A	A	A	C	C	B	A	A	A	A	B	C	C	C
K35	1989	VN6	30	A	B	A	A	A	C	B	A	A	A	A	C	A	A	C
K36	1993	India	20	A	C	A	A	A	C	B	A	A	A	A	A	C	C	C
K37	1993	India	20	A	A	B	C	A	C	B	A	A	A	A	A	C	C	C
K38	1993	VN6	20	B	B	A	A	A	C	B	A	A	A	A	B	A	A	C
K39	1989	India	30	A	A	A	A	A	C	B	A	A	A	A	B	C	C	C
K4	1989	India	35	A	B	A	B	B	C	A	A	A	A	A	C	B	B	C
K40	1993	India	40	A	A	B	C	C	C	C	A	A	A	A	A	C	C	C
K41	1989	India	40	A	B	B	C	A	C	B	A	A	A	A	C	A	A	C
K42	1993	India	10	B	B	A	A	A	C	B	A	A	A	A	B	C	C	C
K43	1989	India	15	A	B	B	C	A	C	B	A	A	A	A	B	C	C	C
K44	1989	India	20	A	A	B	A	A	C	C	A	A	A	A	B	C	C	C
K45	1994	VN6	7	A	A	A	A	A	C	B	A	A	A	A	A	A	A	C
K46	1994	VN6	13	A	A	A	A	A	C	B	A	A	A	A	B	C	C	C
K47	1994	VN6	10	A	A	A	A	A	C	B	A	A	A	A	A	A	A	C
K48	1989	India	10	A	A	A	A	B	C	B	A	A	A	A	B	A	A	C
K49	1993	India	17	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
K5	1989	India	40	C	B	A	B	A	C	A	A	A	A	A	B	A	A	C
K50	1994	VN6	20	A	A	A	B	B	C	A	A	A	A	A	A	A	A	C
K51	1989	India	20	A	B	A	A	B	C	C	A	A	A	A	B	C	C	C
K52	1993	India	30	A	A	A	A	A	A	B	C	A	A	A	A	A	C	C
K53	1994	India	40	C	C	A	A	C	C	A	C	C	C	C	A	C	C	C

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
K54	1993	VN6	25	A	C	A	B	A	C	B	A	A	A	A	B	A	A	C
K55	1988	VN6	45	A	A	A	A	A	C	A	A	A	A	A	B	A	C	C
K56	1994	India	10	A	A	A	A	A	C	B	A	A	A	A	A	C	C	C
K57	1992	VN6	15	A	C	A	A	A	C	B	A	A	A	A	B	C	A	C
K58	1992	VN6	15	A	A	B	B	A	C	B	A	A	A	A	C	A	A	C
K59	1996	Afridev	20	A	A	A	A	A	C	B	A	A	A	A	A	C	C	C
K6	1989	VN6	20	A	A	B	B	A	C	A	A	A	A	A	C	A	A	C
K60	1993	VN6	40	A	C	B	B	A	C	B	A	A	A	A	C	C	C	C
K61	1996	VN6	26	A	A	A	A	A	C	A	A	A	A	A	A	A	A	C
K62	1996	VN6	40	C	A	A	A	A	C	A	A	A	A	A	A	C	C	C
K63	1994	India	15	A	A	A	A	A	A	B	B	A	A	A	C	A	C	C
K64	1988	VN6	50	A	A	A	A	A	C	A	A	A	A	A	C	C	C	C
K65	1991	VN6	15	A	A	A	A	A	C	B	A	A	A	A	B	C	C	C
K66	1989	VN6	40	A	A	A	A	A	C	A	A	A	A	A	C	C	C	C
K67	1989	VN6	20	A	A	A	A	A	C	A	A	A	A	A	B	C	C	C
K68	1991	VN6	20	A	A	A	A	A	C	B	A	A	A	A	B	A	A	C
K69	1988	India	3	A	A	B	A	C	C	C	A	A	A	A	C	A	A	C
K7	1993	India	20	A	B	A	A	B	C	A	A	A	A	A	B	C	C	C
K70	1989	VN6	10	A	A	A	A	A	C	A	A	A	A	A	B	A	A	C
K71	1997	Afridev	15	A	A	A	A	A	C	C	A	A	A	A	A	A	A	C
K72	1988	India	15	C	A	A	A	A	C	A	A	A	A	A	C	A	A	C
K73	1993	India	12	B	B	A	A	A	C	B	A	A	A	A	B	C	C	C
K74	1989	India	12	A	A	A	A	A	C	A	A	A	A	A	B	C	C	C
K75	1997	Afridev	20	A	A	A	A	A	C	C	A	A	A	A	B	C	C	C
K76	1997	Afridev	15	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
K77	1997	Afridev	20	A	A	A	A	A	A	B	C	A	A	A	A	A	C	C
K78	1997	Afridev	30	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
K79	1994	India	25	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
K8	1991	India	50	A	B	B	C	B	C	A	A	A	A	A	B	C	C	C
K80	1994	India	35	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
K81	1994	India	30	A	B	A	A	A	C	B	A	A	A	A	A	C	C	C

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
K82	1994	India	20	A	A	A	A	A	C	A	A	A	A	A	A	A	A	C
K83	1994	Tara	20	B	A	A	A	A	C	B	A	A	A	A	B	C	C	C
K84	1997	India	10	B	A	A	A	A	C	B	A	A	A	A	B	A	A	C
K85	1997	Afridev	15	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A
K86	1997	Afridev	30	A	A	A	A	A	A	B	C	A	A	A	A	A	A	C
K87	1994	India	30	A	A	A	A	A	A	B	B	A	A	A	A	A	A	C
K88	1994	India	20	A	A	A	A	A	C	A	A	A	A	A	A	C	C	C
K89	1995	Tara	20	C	B	B	B	A	C	A	A	A	A	A	A	C	C	C
K9	1993	India	50	B	B	B	B	A	C	A	A	A	A	A	B	C	C	C
K90	1997	India	10	A	A	B	B	C	C	A	A	A	A	A	A	C	C	C
K91	1994	Tara	20	C	A	A	A	A	C	A	A	A	A	A	B	C	C	C
K92	1994	India	30	A	A	A	A	A	A	B	A	A	A	A	A	A	A	C
K93	1994	India	15	A	A	A	A	A	C	A	A	A	A	A	A	C	C	C
K94	1994	India	20	A	A	A	A	A	C	B	A	A	A	A	A	A	A	C
K95	1994	India	20	B	B	B	A	A	C	B	A	A	A	A	B	C	C	C
K96	1997	Afridev	15	A	A	A	A	A	C	A	A	A	A	A	A	C	C	C
K97	1995	Afridev	20	A	A	A	A	A	C	B	A	A	A	A	A	C	C	C
K98	1995	Tara	20	A	A	A	A	A	C	A	A	A	A	A	A	A	A	C
K99	1989	India	20	A	C	B	C	A	C	A	A	A	A	A	C	A	A	C
KC1	95	Afridev	50	A	A	A	A	A	C	C	A	A	A	A	B	C	C	B
KC10	97	Afridev	5	A	A	A	A	C	C	A	A	A	A	A	A	C	C	B
KC11	95	Afridev	100	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
KC12	95	India	50	A	A	B	A	A	C	C	A	A	A	A	A	C	C	B
KC13	95	Afridev	85	B	A	A	A	C	C	C	A	A	A	A	B	C	C	B
KC14	97	India	2	A	A	A	A	A	C	C	A	A	A	A	B	C	C	B
KC15	92	India	5	A	B	B	A	B	C	B	A	A	A	A	B	C	C	C
KC16	92	VN6	4	A	B	B	A	A	C	B	A	A	A	A	B	C	C	B
KC17	95	Afridev	20	A	A	A	A	A	C	C	A	A	A	A	B	C	C	C
KC18	95	Afridev	30	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
KC19	95	Afridev	25	A	B	A	A	A	C	C	A	A	A	A	A	C	C	B
KC2	91	India	30	A	B	A	B	A	C	B	A	A	A	A	C	C	C	C

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
KC20	95	Afridev	15	A	A	A	A	A	C	C	A	A	A	A	A	C	C	B
KC21	97	Afridev	50	A	A	A	B	A	C	C	A	A	A	A	A	C	C	C
KC22	97	Afridev	50	A	A	A	A	A	C	C	A	A	A	A	A	C	C	B
KC3	95	India	30	A	B	A	B	A	C	C	A	A	A	A	B	C	C	C
KC4	91	India	50	A	B	B	B	A	C	A	A	A	A	A	C	C	C	C
KC5	91	India	50	A	A	A	B	A	C	B	A	A	A	A	B	C	C	B
KC6	95	Afridev	60	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
KC7	95	Afridev	50	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
KC8	95	Afridev	15	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
KC9	97	Afridev	50	A	A	B	B	A	C	C	A	A	A	A	A	C	C	B
Kr1	1993	India	1	C	C	C	B	C	C	C	C	C	C	C	B	C	C	C
Kr11	1993	India	1	C	C	B	B	C	C	C	C	C	C	C	B	C	C	C
Kr12	1993	India	1	B	C	C	B	C	C	C	C	C	C	C	A	C	C	C
Kr13	1993	India	5	B	C	C	C	C	C	C	C	C	C	C	A	C	C	C
Kr14	1993	India	1	B	C	C	C	C	C	C	C	C	C	C	A	C	C	C
Kr16	1993	India	4	A	B	B	B	C	C	B	C	C	A	C	A	C	C	C
Kr17	1993	India	1	C	B	B	C	C	C	C	C	C	C	C	B	C	A	C
Kr18	1993	India	1	B	A	A	A	C	A	C	C	C	C	C	A	C	A	C
Kr19	1993	India	1	A	A	A	B	B	A	C	C	C	C	C	A	C	C	C
Kr2	1993	India	1	C	C	C	B	C	C	C	C	C	C	C	B	C	C	C
Kr20	1993	India	3	A	A	A	B	C	C	C	C	A	C	C	A	C	C	C
Kr21	1993	India	1	C	A	B	B	C	C	C	C	C	C	C	A	C	C	C
Kr22	1993	India	5	C	C	C	C	C	C	C	C	C	C	C	B	C	C	C
Kr23	1993	India	1	C	B	C	C	C	C	C	C	C	C	C	B	C	C	C
Kr24	1993	India	1	A	B	A	B	C	C	C	C	A	A	C	A	C	C	C
Kr25	1993	India	4	A	B	B	B	C	C	C	C	C	C	C	A	C	C	C
Kr26	1993	India	6	A	C	B	B	B	C	C	C	A	A	A	A	C	C	C
Kr27	1993	India	6	C	C	C	C	B	C	C	C	A	A	A	B	C	A	C
Kr28	1993	India	15	C	C	B	B	C	C	C	C	C	C	C	B	C	C	C
Kr29	1993	India	3	C	C	C	C	C	C	C	C	C	C	C	B	C	C	C
Kr3	1993	India	1	C	C	C	B	C	C	C	C	C	C	C	B	C	C	C

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
Kr30	1993	India	5	A	B	B	B	B	C	C	A	A	A	C	A	C	C	C
Kr31	1993	India	6	A	B	A	B	B	C	C	A	A	C	C	B	C	A	C
Kr32	1993	India	6	A	A	B	B	A	C	C	A	A	A	A	A	C	C	C
Kr33	1993	India	PAG	A	C	B	B	C	C	B	C	C	C	C	A	C	C	C
Kr7	1992	India	PAG	B	C	C	C	B	C	A	A	A	A	A	A	C	C	C
P1	1994	VN6	5	B	C	C	C	C	C	C	A	A	A	A	B	C	A	C
P2	1994	VN6	2	B	B	B	B	B	A	C	A	A	A	A	B	C	A	C
P3	1995	VN6	15	A	B	B	B	B	C	B	A	A	A	A	C	A	A	C
P4	1997	VN6	10	A	A	B	C	B	C	B	A	A	A	A	A	C	A	C
P5	1994	India	20	A	B	B	B	B	C	B	A	A	A	A	A	C	A	C
P6	1994	VN6	30	A	A	B	A	B	C	B	A	A	A	A	B	A	A	A
S1	1993	VN6	5	A	A	A	A	A	C	C	A	A	A	A	B	A	A	A
S10	1995	VN6	7	A	C	A	A	A	C	C	A	A	A	A	B	A	A	A
S11	1993	India	5	A	B	B	C	B	C	C	C	A	A	A	A	C	C	C
S12	1995	VN6	12	A	A	A	A	A	C	C	A	A	A	A	B	C	A	B
S13	1995	VN6	10	A	A	A	A	A	C	C	A	A	A	A	B	C	A	B
S14	1993	VN6	11	A	A	A	A	A	C	C	A	A	A	A	B	A	A	B
S15	1993	VN6	10	A	B	B	A	A	C	B	A	A	A	A	C	A	A	A
S16	1993	VN6	9	A	B	A	A	A	C	C	A	A	A	A	B	A	A	B
S17	1995	VN6	15	A	A	B	A	A	C	C	A	A	A	A	C	A	A	B
S18	1997	VN6	15	A	C	A	A	B	C	B	A	A	A	A	C	C	A	B
S19	1997	CW	15	A	A	A	A	A	C	B	A	A	A	A	A	A	A	A
S2	1995	VN6	12	A	A	A	A	A	C	C	A	A	A	A	B	A	A	C
S20	1997	CW	10	A	A	A	A	B	C	A	A	A	A	A	A	A	A	B
S21	1997	CW	12	A	A	B	A	A	C	B	A	A	A	A	A	A	A	A
S22	1997	CW	15	A	A	A	A	A	C	B	A	A	A	A	A	A	A	A
S23	1997	VN6	15	A	A	A	A	A	C	B	A	A	A	A	A	A	A	A
S24	1997	Afridev	20	A	A	A	A	A	C	B	A	A	A	A	A	C	A	B
S25	1995	VN6	9	A	A	A	A	B	C	C	A	A	A	A	A	C	A	B
S26	1997	VN6	15	A	A	A	B	B	C	C	A	A	A	A	A	C	C	C
S27	1997	VN6	7	A	A	A	A	A	C	B	A	A	A	C	A	A	C	C

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
S28	1997	VN6	15	A	A	A	A	C	C	C	A	A	A	C	A	C	A	A
S29	1997	VN6	17	A	C	A	A	A	A	C	A	A	A	C	B	A	A	C
S3	1993	VN6	20	A	A	A	A	A	C	C	A	A	A	A	B	A	A	A
S30	1995	VN6	13	A	A	B	A	B	C	C	A	A	A	C	B	C	A	B
S31	1995	VN6	8	A	A	A	A	B	C	C	A	A	A	A	B	A	A	B
S32*	1997	VN6	15	A	A	B	B	C	C	B	A	A	A	A	A	C	C	C
S33*	1997	VN6	15	A	A	B	B	B	C	B	A	C	A	A	A	C	A	C
S34	1993	VN6	16	C	B	B	B	A	C	C	A	A	A	A	C	C	A	C
S35	1993	India	20	B	B	A	A	B	C	C	C	A	C	C	A	C	C	C
S36	1993	VN6	2	A	B	B	A	A	C	C	A	A	A	A	C	B	A	C
S37	1994	VN6	15	A	B	A	A	B	C	C	A	A	A	A	C	A	A	C
S38*	1997	VN6	15	B	A	B	C	A	C	B	A	A	A	A	B	C	A	C
S39	1994	VN6	11	C	C	B	B	B	C	C	A	A	A	A	C	A	A	C
S4	1994	VN6	4	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A
S40	1994	VN6	5	A	A	B	C	A	C	C	A	A	A	A	A	C	A	C
S41	1995	VN6	5	A	C	B	B	C	C	C	A	A	A	A	A	C	A	C
S42	1995	VN6	5	A	A	B	C	A	C	C	A	A	A	A	B	C	A	C
S43*	1997	VN6	7	A	A	A	B	B	C	B	A	A	A	A	A	B	A	C
S44*	1997	India	13	B	A	B	B	B	C	B	A	A	A	A	A	A	A	C
S45*	1997	India	15	A	A	B	C	C	C	B	A	A	A	A	A	A	A	C
S46	1995	VN6	10	A	C	B	C	A	C	C	A	A	A	C	B	C	A	C
S5	1994	VN6	10	A	A	B	A	A	C	C	A	A	A	A	B	C	A	C
S6	1994	VN6	15	A	A	A	A	A	C	C	A	A	A	A	A	A	A	B
S7	1995	VN6	12	A	A	A	A	B	C	C	A	A	A	A	B	A	A	B
S8	1995	VN6	10	A	A	A	A	A	C	C	A	A	A	A	A	C	A	A
S9	1994	VN6	10	A	A	A	A	A	C	C	A	A	A	A	A	C	C	B
T1	1995	VN6	20	A	A	A	A	B	C	A	A	A	A	A	A	A	A	B
T10	1995	India	25	A	A	A	A	A	C	A	A	A	A	A	A	C	C	B
T100	1994	India	27	A	A	A	A	A	C	A	A	A	A	A	A	C	C	B
T101	1992	India	25	C	B	B	B	A	C	B	A	A	A	A	B	C	C	B
T102	1996	Afridev	30	A	A	A	A	A	C	B	A	A	A	A	A	C	C	B

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
T103	1993	India	40	A	C	B	A	A	C	B	A	A	A	A	B	A	C	B
T104	1993	India	26	A	A	A	A	A	C	B	A	A	A	A	B	C	C	B
T11	1996	AfrideVN6	2	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T12	1992	India	26	A	A	A	A	A	C	A	A	A	A	A	A	C	C	B
T13	1992	India	30	A	A	A	A	A	C	C	A	A	A	A	C	C	C	C
T14	1995	Tara	50	A	A	A	A	A	C	C	A	A	A	A	A	C	C	B
T15	1985	India	10	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T16	1992	India	30	A	B	A	B	A	C	A	A	A	A	A	A	C	C	C
T17	1989	India	20	A	A	A	A	A	A	A	A	A	A	A	C	C	C	C
T18	1997	AfrideVN6	15	A	A	A	A	B	C	C	A	A	A	A	A	C	C	B
T19	1996	AfrideVN6	1	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T2	1995	Tara	20	A	A	A	A	A	C	A	A	A	A	A	A	C	C	B
T20	1996	India	1	A	A	A	A	A	A	A	A	A	A	A	A	C	C	C
T21	1983	India	26	A	B	A	B	A	C	A	A	A	A	A	C	C	C	C
T22	1992	India	23	A	A	A	A	A	A	A	A	A	A	A	A	C	C	C
T23	1989	India	1	A	A	A	B	A	A	A	C	A	A	A	B	C	C	C
T24	1992	India	26	A	A	A	B	A	C	A	A	A	A	A	C	C	C	C
T25	1995	Tara	20	A	B	A	A	A	C	A	A	A	A	A	A	C	C	C
T26	1995	Tara	5	A	B	A	A	A	A	C	A	A	A	A	A	C	C	C
T27	1989	India	30	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T28	1996	AfrideVN6	30	A	A	A	A	A	C	A	A	A	A	A	A	C	C	C
T29	1989	India	15	A	B	B	B	A	C	A	A	A	A	A	B	C	C	B
T3	1997	AfrideVN6	18	A	A	A	A	A	C	C	A	A	A	A	A	C	C	C
T30	1989	VN6	15	A	B	A	B	A	C	A	A	A	A	A	A	C	A	B
T31	1989	India	40	A	B	A	B	A	C	A	A	A	A	A	B	C	C	B
T32	1989	India	44	A	A	B	B	A	C	A	A	A	A	A	B	C	C	C
T33	1989	India	50	A	A	A	A	A	C	A	A	A	A	A	C	C	C	B
T34	1992	VN6	15	A	A	A	A	A	C	A	A	A	A	A	B	C	A	B
T35	1994	India	35	A	A	A	A	A	C	A	A	A	A	A	B	C	C	B
T36	1994	India	25	C	B	B	B	A	C	B	A	A	A	A	A	C	C	B
T37	1994	India	25	A	B	B	B	A	C	A	A	A	A	A	A	C	C	C

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
T38	1994	India	6	B	A	A	A	A	C	A	A	A	A	A	A	C	C	C
T39	1994	India	25	A	B	B	B	A	C	A	A	A	A	A	B	C	C	C
T4	1989	India	50	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T40	1992	India	15	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T41	1988	India	50	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T42	1988	India	26	A	B	B	B	A	C	A	A	A	A	A	C	C	C	C
T43	1988	India	25	A	B	A	B	A	C	A	A	A	A	A	B	C	C	B
T44	1988	India	30	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T45	1988	India	25	A	A	B	B	A	C	A	A	A	A	A	B	C	C	C
T46	1996	AfrideVN6	25	A	A	A	A	A	C	A	A	A	A	A	A	C	C	B
T47	1992	India	26	A	B	A	B	A	C	A	A	A	A	A	A	C	C	B
T48	1995	VN6	45	A	A	A	B	A	C	A	A	A	A	A	A	C	A	B
T49	1993	AfrideVN6	22	A	C	A	B	A	C	C	A	A	A	A	A	C	C	C
T5	1996	Tara	25	A	A	A	A	A	C	B	A	A	A	A	A	C	C	B
T50	1996	AfrideVN6	30	A	B	A	B	A	C	C	A	A	A	A	A	C	C	C
T51	1996	India	20	A	B	A	B	A	C	B	A	A	A	A	A	C	C	C
T52	1993	India	25	C	B	B	B	A	C	B	A	A	A	A	A	C	C	B
T53	1992	India	27	A	B	C	C	A	C	A	A	A	A	A	A	C	C	C
T54	1997	AfrideVN6	25	A	A	A	A	A	C	C	A	A	A	A	A	C	C	B
T55	1997	AfrideVN6	45	A	A	A	A	A	C	C	A	A	A	A	A	C	C	B
T56	1997	AfrideVN6	25	A	A	A	A	A	C	C	A	A	A	A	A	C	C	B
T57	1993	India	25	B	B	A	B	A	C	A	A	A	A	A	B	C	C	B
T58	1994	India	27	B	B	A	B	A	C	A	A	A	A	A	A	C	C	B
T59	1994	India	5	B	B	A	A	B	C	B	A	A	A	A	A	C	C	C
T6	1995	India	25	A	A	A	A	A	C	A	A	A	A	A	C	C	C	B
T60	1994	India	1	C	B	B	B	A	C	B	A	A	A	A	A	C	C	C
T61	1988	India	25	B	B	A	B	A	C	A	A	A	A	A	C	C	C	C
T62	1992	India	35	A	C	B	B	A	C	B	A	A	A	A	A	C	C	B
T63	1993	India	26	A	A	A	A	A	C	B	A	A	A	A	B	C	C	C
T64	1994	India	30	A	A	A	A	A	C	A	A	A	A	A	A	C	C	C
T65	1994	India	25	C	B	B	B	A	C	B	A	A	A	A	A	C	C	B



## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
T66	1994	India	30	C	B	A	A	A	C	C	A	A	A	A	B	C	C	B
T67	1994	India	25	C	B	B	B	A	C	B	A	A	A	A	A	C	C	B
T68	1997	AfrideVN6	7	A	A	A	A	B	C	C	A	A	A	A	A	C	C	B
T69	1994	India	10	A	C	A	A	A	C	A	A	A	A	A	B	C	C	B
T7	1989	India	25	A	B	B	B	A	C	A	A	A	A	A	B	C	C	C
T70	1994	India	27	A	B	A	B	A	C	B	A	A	A	A	A	C	C	B
T71	1992	India	40	A	A	A	A	A	C	B	A	A	A	A	B	C	C	B
T72	1992	India	50	A	B	A	A	A	C	A	A	A	A	A	A	C	C	B
T73	1992	India	26	A	A	A	B	A	C	A	A	A	A	A	A	C	C	B
T74	1992	India	26	A	A	A	A	A	C	A	A	A	A	A	A	C	C	C
T75	1995	India	50	A	A	A	B	A	C	A	A	A	A	A	B	C	C	B
T76	1992	India	40	A	A	B	A	A	C	A	A	A	A	A	B	C	C	B
T77	1992	India	30	A	B	A	A	A	C	A	A	A	A	A	A	C	C	B
T78	1992	India	50	A	B	A	A	A	C	A	A	A	A	A	A	C	C	C
T79	1988	India	40	A	A	A	A	A	C	A	A	A	A	A	B	C	C	B
T8	1993	India	25	A	A	A	B	A	C	C	A	A	A	A	B	C	C	B
T80	1992	India	35	A	A	A	A	A	C	A	A	A	A	A	A	C	C	C
T81	1994	India	20	A	A	A	A	B	C	A	A	A	A	A	A	C	C	B
T82	1988	India	40	A	A	A	A	A	C	A	A	A	A	A	C	C	C	B
T83	1992	India	28	A	A	A	B	A	C	A	A	A	A	A	A	C	C	B
T84	1992	India	27	A	A	A	A	A	C	B	A	A	A	A	B	C	C	B
T85	1992	India	32	A	A	B	A	A	C	A	A	A	A	A	B	C	C	B
T86	1992	India	15	A	A	A	A	A	C	B	A	A	A	A	A	C	C	B
T87	1994	India	20	A	A	A	A	A	A	B	A	A	A	A	A	C	C	B
T88	1992	India	25	A	B	A	B	A	C	B	A	A	A	A	B	C	C	B
T89	1992	India	80	A	B	B	B	A	C	B	A	A	A	A	A	C	C	B
T9	1996	India	16	B	A	A	B	A	C	A	A	A	A	A	C	C	C	B
T90	1992	India	50	C	B	B	B	A	C	B	A	A	A	A	A	C	C	B
T91	1994	India	30	A	A	A	B	A	C	A	A	A	A	A	A	C	C	B
T92	1993	India	30	B	A	B	B	A	C	A	A	A	A	A	A	C	C	B
T93	1993	VN6	15	B	B	A	B	A	C	A	A	A	A	A	B	C	C	B

## RESULTS OF HAND PUMP SURVEY

S/N	Year	Pump	Fam	2.1	2.3	2.5	2.6	2.7	2.8	3.4	3.5	3.6	3.7	3.8	3.10	3.11	3.12	3.15
T94	1995	India	25	A	B	A	B	A	C	B	A	A	A	A	C	C	C	B
T95	1993	India	30	A	B	A	B	A	C	B	A	A	A	A	B	C	C	B
T96	1994	India	25	A	A	A	A	A	C	B	A	A	A	A	A	C	C	B
T97	1994	India	28	A	B	B	B	A	C	A	A	A	A	A	A	C	C	B
T98	1992	India	26	B	A	B	C	A	C	B	A	A	A	A	A	C	C	B
T99	1992	India	15	A	A	A	A	A	C	A	A	A	A	A	A	C	C	B

# **ANNEX-10**

**LIST OF MATERIALS  
DEVELOPED BY UNICEF**

B

**LIST OF WES EDUCATION MATERIALS DEVELOPED  
FOR THE ROYAL GOVERNMENT OF CAMBODIA, 1992-1996**

S/N	DESCRIPTION
1.	India Mark II Maintenance Book
2.	India Mark II Maintenance Book
3.	VN No. 6 Maintenance Book
4.	Tara Maintenance Booklet
5.	Safe water Booklet
6.	Facts for Life "Hygiene and Water Booklet"
7.	How to build a Water Seal Latrine Flyer
8.	School Sanitation Booklet
9.	Poster "Build Latrine"
10.	Set of 5 water use posters
11.	Audio tapes - Diarrhoea - Dengue
12.	Audio songs - Garbage disposal
13.	Diarrhoea - Safe Water - Dengue - Build latrines
14.	Video spots - Dengue 3 - Garbage collection - Build latrines
15.	Video Programme - Water and Hygiene - Sorany Hygiene - How to build a Latrine - How to prevent Dengue
16.	Flyers Dengue - Cholera
17.	Hand pump posters
18.	5 Hygiene posters
19.	School Sanitation Video
20.	WATSAN Guidelines Booklet

B

# **ANNEX-1 1**

## **LATRINE SURVEY FORMS AND RESULTS**

B



# FAMILY LATRINE MONITORING SHEET

(No., \_\_\_\_\_ Date:   /09/97  )

## 1. GENERAL DATA

Monitor name: \_\_\_\_\_

Province: _____	Family name: _____
District: _____	Built in: _____
Commune: _____	Users: <u>  around  </u> <u>  persons  </u>
Village: _____	
Type:	nothing built    1) eccentric    2) on top/rings    3) on top/bricks
House:	1) Simple leaf/on ground 2) Raised leaf house 3) Raised leaf walls/tile-tin roof or timber walls/leaf roof 4) Timber or brick walls, tile-tin roof

## 2. LATRINE (Technical)

**BY OBSERVATION**

	Description	A	B	C	Remarks
2.1	Does it provide privacy	yes	bit	no	
2.2	Does it protect from rain	yes	bit	no	
2.3	Squatting slab	clean	bit dirty	very dirty	
2.4	Pit/rings	good	cracks	broken	
2.5	Surrounding of latrine	clean	bit dirty	very dirty	

Other Observations: \_\_\_\_\_  
\_\_\_\_\_

## 3. LATRINE (Social)

**BY ASKING USERS OR NEAREST HOUSEHOLD**

	Description	A	B	C	Remarks
3.1	Used by adults	always	sometimes	never	
3.2	Used by children (<5 yrs)	always	sometimes	never	
3.3	User contribution	< \$12	\$12 -25	> \$25	
3.4	User knows how to repair	yes		no	
3.5	H/E training received	more times	1 time	no	
3.6	Message hand washing	remember		forgot	
3.7	Message how to clean it	remember		forgot	
3.8	Message how to use it.	remember		forgot	

Other Observations: \_\_\_\_\_  
\_\_\_\_\_

- For Family who received slab and pipe, but did not built latrine:  
Why not ? \_\_\_\_\_
- For one family nearby, who did nor participate in latrine programme at all:  
Why not ? \_\_\_\_\_

## **SUMMARY OF ANALYSIS LATRINE SURVEY**

### **Introduction**

Forms were prepared at the end of the first week of the Evaluation and it was explained to the survey staff (2 SAWA Cambodia staff and 3 Government counterpart staff) how to fill them in. SC staff were going to execute a small survey each in a different Province and the government counterparts would join up with the Evaluation Team. On the following Saturday morning both were tried out in Kandal Province, with the Evaluation Team leader, to provide practice for the SC staff and to pretest the forms. After this some questions were changed and copies were made.

A survey of this nature was not originally included in the evaluation, but came up at the first week by the Evaluation Team as being necessary to be able to say something on the existing facilities. The forms were therefore kept simple and answers were put in categories, to make the analysis easier.

### **Questions deleted**

During the analysis it became clear that some questions were still not completely understood by some of the surveyors or their supervisors and they could not be used anymore.

**Question 2.4:** The question was meant to give an indication on the condition of the rings, but in reality they could not be seen in the ground

**Question 3.6 - 3.8:** This was filled also mostly when no training had occurred; also there was a lot of guessing by the surveyors, because they could not meet the people who knew the exact situation.





## RESULTS OF LATRINE SURVEY

No.	Type	House	Year	Users	2.1	2.2	2.3	2.5	2.6	2.7	3.1	3.2	3.3	3.4	3.5
K91	1	3	1997	9	A	A	A	B	C	C	A	A	C	A	A
K92	1	1	1997	15	A	A	B	B	C	C	A	A	A	A	B
K93	0	2	1997	8											
K94	1	4	1997	6	A	A	A	A	A	A	A	A	C	A	B
K95	3	4	1997	9	A	A	A	A	A	A	A	A	C	A	B
K96	2	4	1997	6	A	A	A	A	A	A	A	A	C	C	C
S1	1	4	1997	8	A	A	A	A	A	A	A	B	C	A	A
S10	1	4	1997	6	C	C	B	C	A	A	A	A	C	A	A
S11	2	3	1997	5	A	A	B	B	C	C	B	B	C	A	C
S12	2	4	1995	8	A	A	A	A	A	A	A	A	C	A	C
S13	2	4	1995	8	A	A	A	A	A	B	B	A	C	A	C
S14	1	4	1997	6	A	A	A	A	A	A	A	A	C	A	C
S15	2	4	1995	8	A	A	A	A	A	A	A	A	C	A	C
S16	2	4	1995	5	C	C	C	C	C	C	C	C	B	A	C
S17	1	4	1995	9	A	A	A	A	A	A	A	A	C	A	A
S18	0	3	1997	5											
S19	1	4	1996	5	A	C	B	B	A	A	B	B	C	C	C
S2	1	4	1997	7	B	A	A	A	C	C	A	A	C	A	C
S20	1	4	1996	5	B	A	B	A	A	A	B	B	C	A	C
S21	0	2	1996	6											
S22	1	4	1996	4	A	C	A	A	A	A	A	A	C	C	C
S23	1	3	1997	4	C	C	C	C	A	A	A	A	B	A	A
S24	1	4	1997	7	A	A	A	A	A	A	A	A	C	A	C
S25	1	4	1996	6	C	C	C	B	C	C	C	C	B	C	C
S26	1	4	1996	6	A	A	A	A	A	A	A	A	C	A	C
S27	1	2	1997	5	A	B	C	B	A	C	A	C	C	C	C
S28	2	4	1995	5	A	A	A	A	A	A	A	A	C	A	C
S3	0	2	1997	5											
S4	1	4	1997	5	A	A	B	A	A	A	A	A	C	A	A
S5	1	4	1995	5	A	A	B	B	C	C	A	A	C	A	A
S6	2	4	1996	16	A	A	A	A	A	A	A	A	B	A	C
S7	1	4	1996	8	A	A	A	A	A	A	A	A	C	A	C
S8	0	4	1997	5											
S9	2	4	1997	4	A	A	B	B	C	C	A	A	B	A	C
T1	1	4	1996	6	A	A	A	A	A	A	A	C	C	A	B
T10	0	3	1996	6											
T11	0	3	1996	10											
T12	0	3	1996	5											
T13	1	4	1996	10	A	A	A	A	A	A	A	A	C	A	A
T14	1	3	1996	14	A	A	A	B	A	C	A	A	C	A	A
T15	0	3	1996	6											
T16	1	3	1996	8	A	A	A	A	A	C	A	A	B	A	B
T17	2	2	1996	4	A	A	A	A	A	A	A	A	A	A	B
T18	1	3	1997	7	B	A	A	A	A	A	A	A	A	A	B
T19	1	2	1996	4	B	B	A	B	A	A	A	A	B	A	B

### RESULTS OF LATRINE SURVEY

No.	Type	House	Year	Users	2.1	2.2	2.3	2.5	2.6	2.7	3.1	3.2	3.3	3.4	3.5
T2	0	3	1996	5											
T20	0	2	1996	4											
T21	1	3	1996	7	A	A	A	A	A	A	A	A	B	A	B
T22	0	2	1996	6											
T23	1	3	1996	6	A	A	A	A	A	C	A	A	C	A	C
T24	1	4	1996	8	B	A	A	A	C	C	A	A	B	A	B
T25	1	4	1996	12	B	B	A	A	A	A	A	A	B	A	C
T26	0	4	1996	7											
T27	0	2	1996	9											
T28	0	2	1996	5											
T29	1	4	1996	5	B	B	A	A	A	A	A	C	B	A	B
T3	1	4	1996	7	A	A	A	A	A	A	A	C	C	A	B
T30	0	2	1996	7											
T31	1	2	1996	7	C	B	A	B	C	C	A	B	A	A	C
T32	1	2	1997	3	C	A	A	A	A	A	A	C	B	A	C
T33	1	4	1996	10	B	A	A	A	A	A	A	A	C	A	C
T34	1	4	1997	6	C	C	A	A	A	A	A	A	C	A	A
T35	1	3	1996	9	A	A	A	A	A	A	A	A	C	C	B
T36	1	3	1996	8	B	C	A	A	A	A	A	A	B	A	B
T37	1	3	1996	5	A	A	A	A	A	A	A	A	C	A	C
T38	1	3	1996	8	B	A	A	A	A	A	A	A	B	A	B
T39	1	4	1996	8	A	A	A	A	A	A	A	A	C	A	C
T4	0	3	1996	7											
T40	1	2	1996	9	A	A	A	B	A	A	A	A	B	A	C
T41	1	3	1997	7	B	B	A	A	A	A	A	A	B	A	B
T42	1	4	1997	4	A	A	A	A	A	A	A	A	B	C	C
T43	1	3	1996	4	B	B	A	A	A	A	A	A	A	A	B
T44	1	3	1996	6	A	B	B	A	A	A	A	A	A	A	C
T45	1	2	1997	4	B	B	A	B	C	C	A	A	A	A	B
T46	1	3	1996	7	A	A	B	B	A	A	A	A	B	A	B
T47	1	3	1996	10	A	A	B	B	A	C	A	A	B	A	B
T48	1	2	1996	6	B	B	B	A	C	C	A	A	B	A	C
T49	1	2	1996	6	C	C	A	A	C	C	A	A	A	A	B
T5	0	3	1996	10											
T50	1	3	1996	13	A	A	B	B	A	A	A	A	B	A	B
T51	1	3	1996	10	A	A	A	A	A	A	A	A	B	A	B
T52	1	2	1997	10	B	A	B	B	A	A	A	A	B	A	C
T53	1	3	1997	7	A	A	A	A	A	A	A	A	C	A	B
T54	1	2	1996	5	B	B	B	B	A	A	A	A	B	A	C
T55	1	3	1996	8	A	A	B	B	A	A	A	A	B	A	B
T56	1	2	1996	7	B	B	B	B	C	C	A	A	B	A	C
T57	0	2	1996	5											
T58	0	3	1996	7											
T59	1	3	1996	10	C	C	A	A	C	C	A	A	B	A	B
T6	0	4	1996	9											

## RESULTS OF LATRINE SURVEY

No.	Type	House	Year	Users	2.1	2.2	2.3	2.5	2.6	2.7	3.1	3.2	3.3	3.4	3.5
T60	0	2	1996	5											
T61	0	2	1996	4											
T62	0	3	1996	7											
T63	1	3	1996	8	A	A	A	B	A	A	A	A	A	A	B
T64	1	4	1996	6	A	A	B	A	A	A	A	B	A	A	C
T65	0	3	1996	7											
T66	1	4	1996	7	A	A	A	A	A	A	A	A	B	A	B
T67	1	3	1996	7	B	B	A	B	A	A	A	A	A	A	C
T68	1	4	1996	12	A	A	A	A	A	A	A	A	C	A	B
T7	0	4	1996	5											
T8	0	4	1996	7											
T9	1	4	1996	10	A	A	A	A	A	A	A	A	C	A	A

MEMORANDUM FOR THE RECORD

DATE: 10/10/54  
TO: SAC, NEW YORK  
FROM: SAC, PHOENIX  
SUBJECT: [Illegible]

RE: [Illegible]

PHOENIX, ARIZONA  
[Illegible]

B



# **ANNEX-12**

**SUMMARY OF DRILLING  
ACTIVITIES OF CWB  
(1992 - 1997)**

B

### Summary Drilling Activities of Central Water Base 1992 - 1997 (Percentages)

	DATES DRILLING		CENTRAL DRILLING				PROVINCE	TOTAL				PUMP					INCORRECT CHOICE					
	Start	Finish	Manual	PAT201	PAT301	Big rigs	PAT201	Holes	Neg.	Success	No.6	Tara	Afridev	India	PAT	Total	No.6	Tara	Afridev	India	PAT	Total
Veng	Feb-92	Aug-97	14%	5%		15%	66%	1061	8%	92%	86%		1%	13%		98%	5%			27%		8%
y Rieng	May-92	Nov-95	33%	9%		18%	41%	421	3%	97%	78%			16%	6%	95%	3%			82%	100%	22%
dal	Feb-92	May-97	22%	32%	1%	32%	13%	873	9%	91%	23%	10%	13%	45%	8%	88%	6%	4%	35%	14%	100%	21%
ambang	Jan-92	Mar-95				62%	38%	661	27%	73%	11%			89%		86%				24%		21%
lie	Jun-92	May-93		92%		8%		36	3%	97%				100%		100%				0%		0%
om Penh	Feb-92	Aug-97		67%		33%		398	15%	85%	41%	1%	9%	37%	12%	69%	11%		5%	22%	100%	25%
nping Speu	Aug-93	Aug-97				100%		396	11%	89%	3%	10%	45%	42%		66%		45%	44%	20%		32%
nping Thom	Apr-92	Jun-93		35%		65%		20	80%	20%				100%		25%				0%		0%
ah Vihear	Dec-92	Feb-93				100%		43	19%	81%				100%		71%				44%		44%
nping Som	Sep-93	Aug-97				100%		68	15%	85%	37%	2%	31%	29%		88%	16%	100%		20%		14%
m Reap	Jan-92	Apr-95				15%	85%	284	10%	90%	86%			14%		82%				63%		9%
rsat	Jan-92	Dec-94				44%	56%	172	23%	77%				100%		83%				9%		9%
mping Chhnang	Mar-92	Aug-97		2%	8%	51%	40%	624	7%	93%	21%	5%	7%	64%	2%	82%	33%	4%	37%	18%	100%	24%
mping Cham	Sep-92	Sep-97	13%	9%	3%	65%	10%	780	9%	91%	18%	5%	29%	43%	4%	97%	24%	20%	27%	7%	100%	20%
keo	Feb-92	Aug-97	3%	27%		44%	26%	777	10%	90%	29%	7%	13%	46%	6%	84%	11%	13%	81%	21%	100%	30%
mpot	Jul-92	Jul-97			10%	35%	55%	416	8%	92%	59%	1%	6%	34%		95%	3%	100%	48%	35%		18%
nteay Meanchey	Feb-92	May-95				100%		91	21%	79%	2%			98%		92%	100%			22%		23%
			8%	14%	2%	42%	33%	7121	11%	89%	40%	4%	10%	42%	3%	88%	7%	16%	38%	21%	100%	20%

### Summary Drilling Activities of Central Water Base 1992 - 1997

	DATES DRILLING		CENTRAL DRILLING				PROVINC	TOTAL			PUMP						INCORRECT CHOICE					
	Start	Finish	Manual	PAT201	PAT301	Big rigs	PAT201	Holes	Neg.	Success	No.6	Tara	Afridev	India	PAT	Total	No.6	Tara	Afridev	India	PAT	Total
Veng	Feb-92	Aug-97	150	58		158	695	1061	85	976	841		7	128		976	41			35		76
Rieng	May-92	Nov-95	137	38		75	171	421	11	410	324			61	25	410	9			61	25	95
Jal	Feb-92	May-97	189	283	9	276	116	873	79	794	160	72	93	314	57	696	10	3	33	45	57	148
ambang	Jan-92	Mar-95				413	248	661	176	485	45			374		419				89		89
e	Jun-92	May-93		33		3		36	1	35	-	-	-	35	-	35	-	-	-		-	0
om Penh	Feb-92	Aug-97		267		131		398	60	338	97	3	20	86	28	234	11		1	19	28	59
pong Speu	Aug-93	Aug-97				396		396	45	351	8	22	103	98	-	231	-	10	45	20		75
pong Thom	Apr-92	Jun-93		7		13		20	16	4	-	-	-	1	-	1	-	-	-		-	0
h Vihear	Dec-92	Feb-93				43		43	8	35	-	-	-	25	-	25	-	-	-	11		11
pong Som	Sep-93	Aug-97				68		68	10	58	19	1	10	15	-	51	3	1	-	3		7
n Reap	Jan-92	Apr-95				43	241	284	29	255	179	-	-	30	-	209	0	-	-	19		19
at	Jan-92	Dec-94				76	96	172	40	132	-	-	-	110	-	110	-	-	-	10		10
pong Chhnang	Mar-92	Aug-97		11	48	316	249	624	46	578	99	23	35	305	11	473	33	1	13	54	11	112
pong Cham	Sep-92	Sep-97	104	68	24	505	79	780	70	710	137	35	204	321	25	722	31	7	56	20	25	139
o	Feb-92	Aug-97	22	212		344	199	777	79	698	168	39	74	273	35	589	19	5	60	56	35	175
pot	Jul-92	Jul-97			41	145	230	416	34	382	213	5	23	122		363	7	5	11	43		66
ay Meanchey	Feb-92	May-95																				0
			<b>602</b>	<b>977</b>	<b>122</b>	<b>3005</b>	<b>2324</b>	<b>7030</b>	<b>789</b>	<b>6241</b>	<b>2290</b>	<b>200</b>	<b>575</b>	<b>2298</b>	<b>181</b>	<b>5544</b>	<b>164</b>	<b>32</b>	<b>219</b>	<b>485</b>	<b>181</b>	<b>1081</b>

Drill rigs

<b>Drill rig (PAT201 type)</b>	<b>Base</b>	<b>Holes</b>	<b>Year</b>	<b>Donor</b>	<b>Est. Cost</b>
M1	Central	837	?	UNICEF	\$ 8,000
M2	Province	198	?	UNICEF	\$ 8,000
M3	Central/Manual?	644	?	UNICEF	?
M4	Central/Manual?		?	UNICEF	?
M5	Central	596	?	UNICEF	\$ 8,000
M6	K/Cham	203	?	UNICEF	\$ 8,000
M7	Takeo		?	UNICEF	\$ 8,000
M8	S/Reap	248	?	UNICEF	\$ 8,000
M9	Pursat	99	?	UNICEF	\$ 8,000
M10	P/Veng	695	?	UNICEF	\$ 8,000
M11	Central	175	1994	World bank	\$ 8,000
M12	Battambang	248	1994	World bank	\$ 8,000
M13	K/Chhnang	244	1994	World bank	\$ 8,000
M14	Kampot	234	1994	World bank	\$ 8,000
M15	Svay Rieng	163	1994	World bank	\$ 8,000
M16	Central	172	1994	World bank	\$ 8,000
<b>Drill rig (Medium - Large)</b>					
Hydreg	Central	1268	?	UNICEF	?
A-Edson5000	Central	1725	?	UNICEF	?
B-Edson 2000	Central	741	?	UNICEF	?
C-Bourne drill	Central	521	?	UNICEF	?
D-Bourne drill	Central	660	?	UNICEF	?
E-Bourne drill	Central	899	?	UNICEF	?
F-Ingesoll rand	Central	253	1994	World bank	\$ 250,000
G-Ingesoll rand	Central	347	1994	UNICEF	\$ 250,000
H-PAT301	Central	134	1994	World bank	\$ 50,000
I-PAT 301	Central	75	1994	World bank	\$ 50,000

Page #	Year	Month	Day	Time	Location	Notes
1	1997	10	10	10:00	...	...
2	1997	10	11	11:00	...	...
3	1997	10	12	12:00	...	...
4	1997	10	13	13:00	...	...
5	1997	10	14	14:00	...	...
6	1997	10	15	15:00	...	...
7	1997	10	16	16:00	...	...
8	1997	10	17	17:00	...	...
9	1997	10	18	18:00	...	...
10	1997	10	19	19:00	...	...
11	1997	10	20	20:00	...	...
12	1997	10	21	21:00	...	...
13	1997	10	22	22:00	...	...
14	1997	10	23	23:00	...	...
15	1997	10	24	24:00	...	...
16	1997	10	25	25:00	...	...
17	1997	10	26	26:00	...	...
18	1997	10	27	27:00	...	...
19	1997	10	28	28:00	...	...
20	1997	10	29	29:00	...	...
21	1997	10	30	30:00	...	...
22	1997	10	31	31:00	...	...
23	1997	11	1	1:00	...	...
24	1997	11	2	2:00	...	...
25	1997	11	3	3:00	...	...
26	1997	11	4	4:00	...	...
27	1997	11	5	5:00	...	...
28	1997	11	6	6:00	...	...
29	1997	11	7	7:00	...	...
30	1997	11	8	8:00	...	...
31	1997	11	9	9:00	...	...
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33	1997	11	11	11:00	...	...
34	1997	11	12	12:00	...	...
35	1997	11	13	13:00	...	...
36	1997	11	14	14:00	...	...
37	1997	11	15	15:00	...	...
38	1997	11	16	16:00	...	...
39	1997	11	17	17:00	...	...
40	1997	11	18	18:00	...	...
41	1997	11	19	19:00	...	...
42	1997	11	20	20:00	...	...
43	1997	11	21	21:00	...	...
44	1997	11	22	22:00	...	...
45	1997	11	23	23:00	...	...
46	1997	11	24	24:00	...	...
47	1997	11	25	25:00	...	...
48	1997	11	26	26:00	...	...
49	1997	11	27	27:00	...	...
50	1997	11	28	28:00	...	...
51	1997	11	29	29:00	...	...
52	1997	11	30	30:00	...	...
53	1997	12	1	1:00	...	...
54	1997	12	2	2:00	...	...
55	1997	12	3	3:00	...	...
56	1997	12	4	4:00	...	...
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65	1997	12	13	13:00	...	...
66	1997	12	14	14:00	...	...
67	1997	12	15	15:00	...	...
68	1997	12	16	16:00	...	...
69	1997	12	17	17:00	...	...
70	1997	12	18	18:00	...	...
71	1997	12	19	19:00	...	...
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73	1997	12	21	21:00	...	...
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77	1997	12	25	25:00	...	...
78	1997	12	26	26:00	...	...
79	1997	12	27	27:00	...	...
80	1997	12	28	28:00	...	...
81	1997	12	29	29:00	...	...
82	1997	12	30	30:00	...	...
83	1997	12	31	31:00	...	...

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# **ANNEX-13**

**LIST OF LATRINES  
1993 - 1997**

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**LIST OF LATRINES BETWEEN 1993-1997**

<b>Department</b>	<b>MOH</b>	<b>RWS/MRD</b>	<b>RHC/MRD</b>	<b>RHC/MRD</b>			
<b>Province</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>			<b>Total</b>
				<b>Step I</b>	<b>Step II</b>	<b>Step III</b>	
Kandal	542	200	315	150	150	200	1557
Takeo	100		230	150	150	200	940
Kampong Speu	100	100	240	150	150	200	940
Kampong Cham	-	-	22	-	-	-	22
Kampong Thom	-	-	-	150	150	200	500
Kampong Chhnang	-	-	60	-	-	-	60
Prey Veng	161	100	275	150	150	200	1046
Svay Rieng	99	100	225	150	150	200	924
Pursat	209	400	200	150	150	200	1309
Battambang	682	-	-	150	150	200	1182
Banteay Meanchey	-	-	-	150	150	-	300
Kampot	-	300	-	-	-	50	350
Kep	-	-	-	-	-	50	50
Koh Kong	-	-	-	-	-	50	50
Sihanouk Ville	200	-	-	-	-	50	50
Kratie	-	-	-	-	-	-	-
Phnom Penh	-	-	50	-	-	-	50
Stung Treng	-	-	-	-	-	-	-
Siem Reap	-	-	-	-	-	-	-
<b>Total</b>	<b>2093</b>	<b>1200</b>	<b>1617</b>	<b>1350</b>	<b>1350</b>	<b>1800</b>	<b>9410</b>

1971-72 MONTANA BUREAU OF LAND MANAGEMENT

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# **ANNEX-14**

**DRAFT AGREEMENT  
UNICEF - PFD**

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## **FRAMEWORK FOR COOPERATION ON CASD BETWEEN UNICEF AND PARTNER FOR DEVELOPMENT (PFD)**

This framework for cooperation between UNICEF and Partner for Development (PFD) is intended to address certain key issues related to the replication of the Government's UNICEF assisted Community Action for Social Development (CASD) Programme into the northeast provinces of Cambodia. The objective of the cooperation is to facilitate the adoption of lessons and best practices to improve the situation of women and children through community based-participatory initiatives, learned from the CASD Programme already in operation in six provinces, by the Northeast Cambodia Community Programme (NCCP) under the assistance of PFD.

UNICEF will assist the Government through the PRDC in the formation of an inter-sectoral working group, a training team and VDCs in cooperating provinces.

UNICEF will provide assistance in training the working group members on a variety of topics including:

- Advocacy for the Convention on the Rights of the Child (CRC) and the Convention on the Elimination of Discrimination Against Women (CEDAW).
- Development concepts in self-reliance and resource mobilization for capacity building, community education, nutrition, household food and water security, health care, protection of vulnerable groups and credit.
- Roles and responsibilities of government counterparts and VDCs.
- Using the cyclic process of assessment, analysis, action (triple A) for problem solving and development of Village Action Plans (VAPs) which will be the basis for PRD response for service delivery and technical support.

UNICEF will provide Government counterparts of the provincial working group with task oriented incentives.

UNICEF will provide supplies to the working groups based on Village Action Plans generated under the supervision of PFD provincial staff.

PFD will assist the working groups in carrying out baseline assessment and analysis of the situation of women and children in the selected villages.

PFD will supervise training at village level and will assist the working group in compiling Village Action Plans.

PFD will ensure the working group provides appropriate documentation for monitoring the situation of women and children, incentives, cash expenditures, supply utilization, etc.

Financial support from UNICEF to PFD will be contractual and based on availability of funds and specific project proposals. Both UNICEF and PFD will incorporate the areas of cooperation in their budget and work plans.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. This is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. This includes both qualitative and quantitative approaches, as well as the use of advanced statistical tools and software.

3. The third part of the document focuses on the interpretation and application of the results. This involves identifying key trends, patterns, and insights that can inform decision-making and strategic planning.

4. The fourth part of the document discusses the challenges and limitations of the research process. This includes issues related to data quality, sample size, and the potential for bias or error in the analysis.

5. The fifth part of the document provides a summary of the findings and conclusions. This highlights the main results of the study and offers recommendations for future research and practice.

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6. The sixth part of the document discusses the implications of the research for the field of study. This includes a discussion of how the findings can be used to advance knowledge and address real-world problems.

7. The seventh part of the document provides a detailed description of the methodology used in the study. This includes information about the study design, data collection methods, and the statistical analysis techniques.

8. The eighth part of the document discusses the ethical considerations of the research. This includes a discussion of how the study was conducted in a way that respects the rights and privacy of the participants.

9. The ninth part of the document provides a list of references and sources used in the study. This includes both primary and secondary sources, as well as relevant literature in the field.

10. The tenth part of the document provides a final summary and conclusion. This reiterates the main findings of the study and offers a final thought on the significance of the research.

11. The eleventh part of the document discusses the future directions of the research. This includes a discussion of potential areas for further study and the need for continued research in this field.

12. The twelfth part of the document provides a final note of appreciation to the individuals and organizations that supported the research. This includes a thank you to the funding agencies, the research team, and the participants.

# **ANNEX-15**

**CORRESPONDENCE  
ET - PFD**

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To: Simon Thorpe, Partners for Development, Kratie  
From: Foort Bustraan, Team leader UNICEF WATSAN Evaluation  
Date: 26/9/97

Dear Simon,

Thanks very much for you and other PfD staff to spend so much time with us in the past two days; I can hardly believe that I have seen so much : rehabilitated open wells, drilled wells with India and Afridev pumps, old and new Iron reduction plants + meetings with district and project .

I am very impressed with what I have seen from PfD activities and facilities constructed:

- Good quality of construction work (concrete, platforms, slopes, drainage, etc)
- Close cooperation with local PDRD staff both as seconded staff and to join on field visits
- Strong interest to pilot new technologies to make them appropriate to Cambodian context (Iron reduction, Iodine, school latrines, platform designs, etc).

During the visits many items came up in the discussions and I think it is worthwhile if I just summarize them here below for you. Please take them only as my personal comments/idea's and do with them as you like.....

#### On the Iron Reduction plants:

- The new design is definitely better then the previous one.  
=> more aeration, smaller/cheaper unit, much easier to clean/replace filter materials.  
=> also the way it is incorporated in the platform is good, because it takes less space and is very cost effective.
- The new design is used also on wells equipped with India III pumps.  
=> maybe some/most of the Iron in the borehole comes from the hand pump rising mains. if so it pump could be replaced with Afridev, which fits on the India base.
  - 1) measure iron from the pump
  - 2) remove the pump and pump with a submersible until water comes from the aquifer
  - 3) then measure the actual iron content in the groundwater;
  - 4) compare with the water coming from the pump
  - 5) take appropriate action if the difference is big*Field experience:* We did see big difference in Iron for two wells 150 meter apart.
- Because for every iron test you should compare inflow with outflow water, you need to take samples all the time of water directly from the pump, before it enters in to the IRP; the iron pipe going into the IRP is sometimes difficult to take off.  
=> maybe it works easier if a small horizontal metal rod is welded on to it to have a better grip.  
*Field experience:* We did have some problems removing the pipe on the one we tested.

- It is likely that the Iron content of the outflow fluctuates a lot depending on how long the water has been inside the IRP; early morning measurements will give lower readings because Iron could settle out overnight; when a lot of people use the well the water passes through the IRP much faster (storage capacity is around 500 liter) and readings may be higher.  
=> Try to measure also during heavy usage of the well.  
*Field experience:* We did hear from the caretaker at the second IRP, that if many people use it water gets more cloudy.
- Eventhough I fully believe the research, which says that broken clay bricks provide a better medium to settle out Iron, I still think it is worthwhile to try a few with clean riversand.  
=> coarse riversand is easier available for people if replacing the filter becomes easier then cleaning it and also cheaper; also coarse sand does not give a color to the water, contrary to clay bricks (as we heard in the field today). On the other hand a coarse sand filter may block quicker then one with brick chips...?
- The dividing wall in the middle of the IRP is good to separate the two compartments.  
=> maybe it can be lowered a bit so there is more horizontal airflow inside the IRP, which will give even more oxidation.
- Please continue to find out as much as possible how best to built and operate the IRP, because the measurements today where pretty impressive.  
=> reductions from 5.5 -> 1 mg/l and 14 -> 2.4 mg/l are very good results.

#### On the school latrines:

I like the new designs very much, with the basins inside each compartment, filling automatically from the reservoir outside.

- The only suggestion I have is that during the summer school holidays it may be worthwhile for the teachers to close the holes of the latrines with a simple plug, before they lock them. Some places (like the one we went to) are going to flood maybe every year and you do not want this silty water to come in the septic tank/leachpits; also it can block the drains (like it did with the one we saw).

#### For the wells:

I like very much the large square type platforms with good slopes and long drainage channels. I was sorry to hear of the problems you are having with fine sand and silt in Han Chey.

- It is interesting to experiment there with shallow drilling (< 20 meter) like the wells we saw, which were done successfully by a private contractor and then installing Tara's; maybe the aquifer is a bit coarser higher up.  
You may have to drill a few more to have a lower demand for each wells, which means less drawdowns, specially in the dry season.

On the bacteriological testing:

It is good to hear that PfD is getting involved in this as well.

- When I saw the kit and chemicals, I was a bit surprised that it only measures presence/absence of coliforms (also you can only measure 100 times).  
=> I don't know what the cut-off point is for determining the absence or presence of coliforms (could be 1 E-coli /100 ml or 10 ...?)  
=> with this system you can not monitor improvements in behaviour and compare various water sources, because I assume at this moment that anything over 10 Ecoli per 100 ml gives a positive reading.  
=> But there is a huge difference in 10 or 100 or 500 Ecoli per 100 ml and an improvement from 300 to 30 for a household storage jar is excellent, but in your case will not show up.  
=> I presume that they are only bought to measure if there are any coliforms in a newly constructed well... but this is slightly irrelevant if we know that water under normal conditions is contaminated during transport and storage at home from 1 to over 200 Ecoli per 100 ml.
- The incubator (most expensive part of the kit) can also handle other type of measurements, like membrane filtration or multiple tube ;  
=> specially the membrane filtration method is good for rural water supplies, because with it you can count exactly how many Ecoli are in the water; also it is easy to learn and in various provinces NGO & G'ment staff are already using them.

I hope that the above comments can assist you in further developing your programmes.

Yours Sincerely,

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Fort Bustraan  
Team leader UNICEF WES Evaluation

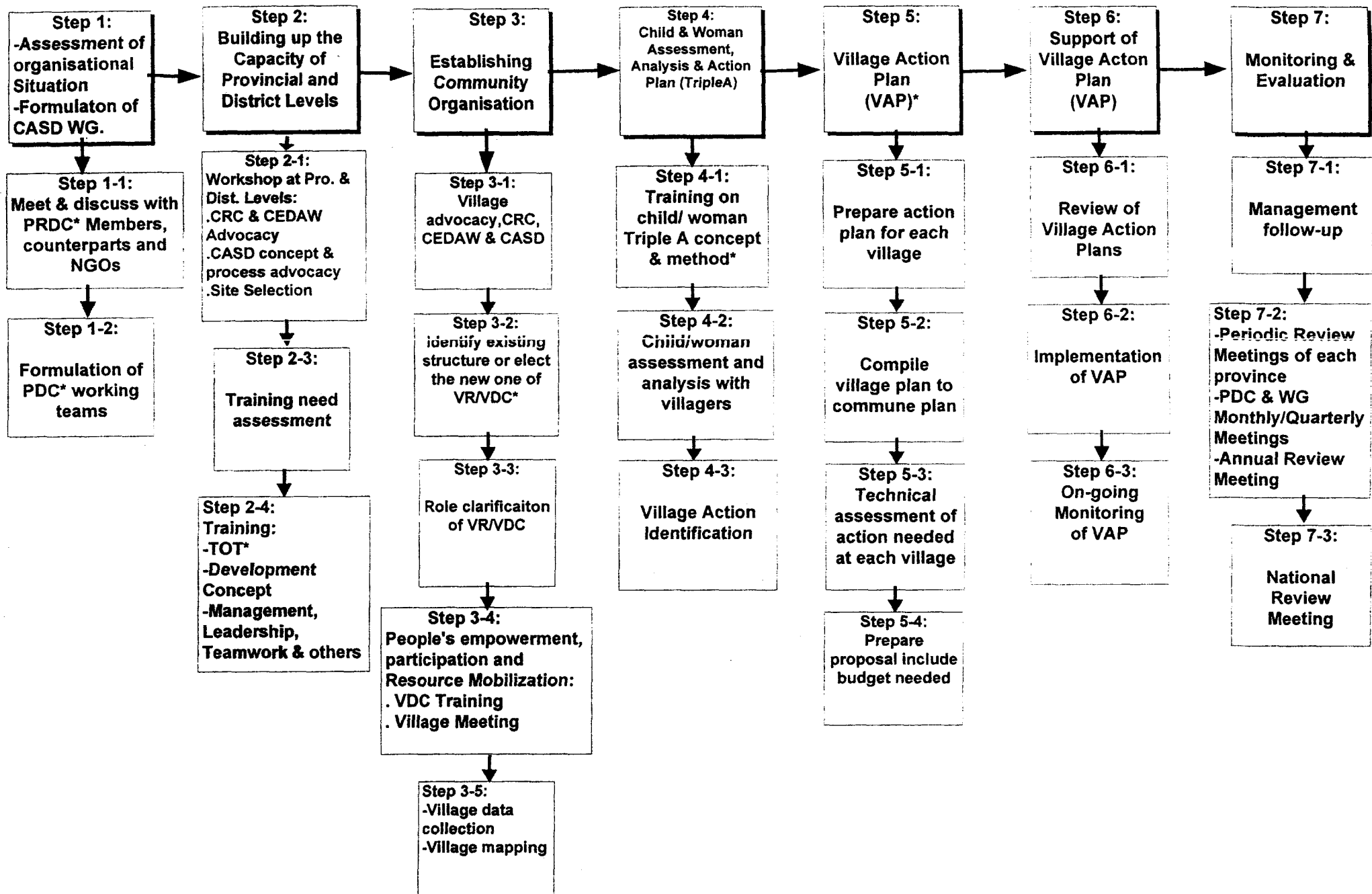
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# **ANNEX-16**

## **STAGES AND STEPS OF CASD PROCESS**

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## Stages and Steps of CASD Process



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