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R E P O R T  
O N  
ORAL THERAPY EXTENSION PROGRAMME  
Phase-II

October 1983 - December 1984

BRAC  
Bangladesh Rural Advancement Committee  
66 Mohakhali Commercial Area  
Dhaka-12

## 1. INTRODUCTION:

Bangladesh Rural Advancement Committee (BRAC) is a non-governmental organisation (NGO) which has been at the forefront for the socio-economic uplift of the disadvantaged rural people. BRAC was established in February, 1972 in response to the humanitarian needs following the war of liberation. With more than 2200 full time staff BRAC is now reaching a significant number of rural people with various development programmes.

## 2. BACKGROUND OF ORAL THERAPY:

Diarrhoea is one of the most important health problems and a major cause of death of infants and young children in Bangladesh. Children under 5 may suffer from two to five diarrhoeal episodes annually. It is estimated that some ten per cent (10%) of the children die from the effects of diarrhoea before reaching their fifth year.

The scientific rationale for Oral Rehydration is firmly established. It is well known that in the treatment of diarrhoeal diseases, when a body becomes dehydrated, the only effective treatment is rehydration, replacing either intravenously or orally approximately the same volume of water and electrolytes lost.

Intravenous administration is not accessible to the rural poor because of the lack of trained personnel, inadequate supplies of saline solution and high cost involved. Similarly it is impractical to supply packets and Oral Rehydration salts to every household in Bangladesh as tens of millions would have to be produced and distributed annually in the rural areas where 92% of the people live and where diarrhoea is an acute problem.

To combat all the above problems and difficulties and with objective of reducing mortality and morbidity, particularly of children, BRAC felt the need to develop an alternative technique

which would be safe, simple, readily acceptable and easily available to the people. Hence BRAC's Oral therapy, prepared out of home ingredients was developed after a year of research and field trials.

3. Lobon-gur Saline, a form of Oral Therapy

The lobon-gur saline (LGS) prepared by the pinch and scoop method is an indigenous form of Oral therapy. It is an effective, safe, cheap, simple, acceptable and readily available means for treatment of diarrhoea. It can be safely used by common people in their home whenever it is needed.

4. The Oral Therapy Extension Programme (OTEP)- Present Programme

BRAC believes that community based programmes must be based on knowledge and activities that are easy to communicate, be understood and accepted. Thus the core of the OTEP programme is a simple concise but comprehensive health message called "Seven Points to Remember" which is a summary of all the information that one needs to know to treat diarrhoea with homemade oral therapy.

OTEP is a community based face to face teaching programme in which one woman in every household is taught by Oral Rehydration Workers (ORW). Travelling from their temporary quarters by foot, rickshaw and/or by country boat to teach the village women how to treat diarrhoea with LGS, teaching the "Seven Points" and how to prepare LGS properly. The ORWs are women between 20 and 35 years of age, and average ten years formal education. Each ORW team consists of 7-8 ORWs, 2 Team Coordinators (TC) and one cook. A team usually covers a union in about one and half month and then they move to the next union in the project area. During October 1983 - December 1984 the ORWs visited 1,587,851 households averaging 9.94 households per day. The coverage was bit less than the target due to drop-out of ORW. Please see Annexure 1.

The Team Co-ordinators (TCs) are male members of the Team and are responsible for a number of activities. Their first task is the pre-operation study of the concerned Upazila with the objective of creating congenial ground for team operations. In this respect, a Team Co-ordinator contacts people individually and through seminars and meetings. During ORW operations, Team Co-ordinators are mainly responsible for pre-contact, smooth working of the ORWs, patient care and follow-up, school forums and more male contact. Male contact is done through following forums:

- a) Individual contact
- b) Group meeting
- c) Male seminar
- d) Mosque forum
- e) Bazar (Market place) forum
- f) Central village workshops etc. (Representing different villages)
- g) Traditional healers seminar

During the period a total of 5,062 primary and secondary schools were visited with 412,310 participants. 559,442 male villagers were covered through different forums-386,868 in male seminars, 581 Traditional healers seminars with 9,139 participants, 163,435 in mosque forums and the rest through individual contact. Additionally, forum in market places and central workshop for elites of the villages were also held regularly. Please see Annexure-2 and Annexure-3.

Demonstrating the effectiveness of LGS by treating diarrhoeal patient is the most important factor in popularization of LGS. It is a practice within the OTEP programme that teams of ORWs are sent to treat patients in a diarrhoeal epidemic within an operational area, suspending the normal programme if necessary.

1,25,134 patients were treated for diarrhoea during this period. Please see Annexure-3.

Reinforcement, Monitoring and Usage Survey:

A Reinforcement Team consisting of 4 male Programme Organisers is responsible to control the quality of education which is the basis for determination of ORWs salary. Its three principal responsibilities are:

- 1) to monitor the effectiveness of ORWs activities by testing the retention of knowledge and ORS preparation ability of those women who have previously been trained.
- 2) to Re-inforce activities in the programme including re-education to mothers, individual male contact, follow-up male seminars, patient care, follow up of patients identified by the ORW team etc.
- 3) to conduct surveys in randomly selected households to assess the usage of LGS. The rationale behind usage surveys is to ensure a quick feedback of the results to the ORW team so that they can take necessary actions for the future. For details of all the above activities see Annexure-4.

5. Concentrated Re-inforcement Programme.

BRAC realised from OTEP's past performances that in order to promote a high LGS usage rate, certain elements of primary health care needed to be included in OTEP's programme. To achieve this the involvement of family and the community as a whole is essential. The concentrated Re-inforcement Programme (CRP) was therefore designed in OTEP phase-II as an integrated health approach involving all the family members - as a compliment to the teaching of diarrhoea management. The objectives of CRP are:

- 1) Treatment of diarrhoeal patients with LGS.
- 2) Creation of female health cadres (village shebika) to promote health education and support the peoples initiatives.
- 3) Upgrading skills of traditional birth attendants.
- 4) Expanding of teaching public health to all households.
- 5) To educate mothers to feed colostrum to new born infants.
- 6) To promote supplementary feeding for infants of age four months and above.
- 7) To impart knowledge on diarrhoeal management and encourage rural medical practitioners to treat diarrhoeal patients with LGS.

It was decided that one union in each Upazila will be covered under CRP. A team consisting of 3 Programme Organisers (P.O.) and 4 ORWs live in one union for six months carrying out various activities under this programme. To date, CRP has covered 52 unions. Some 3,505 and 8,331 traditional birth attendants (TBA) and village female cadres respectively were trained in these unions. 6,884 new born infants were fed colostrum and 12,850 children 4 months and above were under supplementary feeding. Extension of Fuel efficient Stove went hand in hand with health education. 6,232 improved ovens/stoves were installed by village women for reduced energy consumption. The model (to be used by wood/bamboo) introduced was found less effective in the initial stage as the majority of village housewives use straw, paddy husk and dry leaves. The result was less use of it, though 6,232 ovens were installed. Subsequently, the model was re-designed combatting practical problem and 30 ORWs were given training on it. Details of CRP activities are in Annexure-5.

#### 6. Publicity

The object of OTEP Publicity programme was twofold:

- (a) To raise general awareness about and credibility of LGS and
- (b) To support the ORW efforts by registering the core message of the diarrhoeal education.

For this a planned multi-media campaign was launched to disseminate the message throughout the country with specific emphasis on OTEP operational areas where interpersonal and group approaches were the basic activities.

#### (i) Print Media:

OTEP revised and reproduced the bi-colour folded information sheet in 25,000 copies which were distributed among the local govt. officials, teachers, local opinion leader and influentials,

within the operational areas. 100,000 copies of a multi-colour poster was designed and printed which was displayed at public places. Revised edition of the leaflet on '7 points to remember' about the management of diarrhoeal episodes was produced in 500,000 copies which served as a ready reference for all at the time of need. Situation specific advertisements were inserted in various national/local dailies, weeklies, periodicals and little magazines. Considering the need for an information package along with the education about diarrhoea, a new booklet based on real life pictures covering various aspects of health i.e. Breast Feeding, Weaning Food, MCH care, Personal Hygiene, Water use, Sanitation etc. was developed, produced and distributed. A mini-poster with provisions for a class routine and a date panel was produced and distributed among selected students of the schools involved with the OTEF programme. A handy flip-chart on diarrhoea to aid ORW activities produced last year was also in use by the programme personnel. This chart eased the process of generating dialogue between the workers and message recipients.

(ii) Electronic Media:

A total of over 1000 spots of 30-60 seconds duration were released through the commercial service of Radio Bangladesh which has the largest listener coverage. Special messages on water use and community hygiene were given during flood and post flood period to contain possible epidemic of diarrhoeal disease. Dissemination of message through television spot announcements had a great impact. Over 700 spots of 30-60 seconds duration were released with specific emphasis on water use and sanitation alongwith the regular message on diarrhoea and its treatment.

(iii) Others:

Six 14'X7' size bill boards were repainted and erected at conspicuous places like Bus stands, Ferry Ghats, Market places,

Railway stations, Launch/Steamer terminals in different parts of the country close to OTEP operation areas. Apart from these, joint efforts were also taken up with various organisations to establish uniformity of message and sharing of ideas and experiences. A chapter on OTEP approach to the treatment of diarrhoea was included in the Medical Handbook produced by Village Doctor's Association. Plastic badges with a slogan to prevent diarrhoea were also distributed among the students who contributed in the OTEP effort. Various training modules were developed and manuals revised to meet the programme needs based on experience. UNICEF, considering the need and utility of OTEP publicity effort, released on three-month long campaign in Radio and TV through OTEP which complemented and supplemented each others programmes.

Two basic problems have been identified here in running the publicity campaign: (a) Use of dialects and terms in various parts of the country are too wide to contain in a simple sentence; (b) the belief and life-practice pattern is so varied that it is difficult to develop a common need-specific message for mass media. These problems were overcome in interpersonal and group communication at the local levels. As a whole, the publicity campaign is observed to have met the set objectives in various ways.

#### 7. Chloride Concentration

To ensure the safety and effectiveness of the LGS solutions prepared by the rural villagers using the BRAC method, samples of the LGS are collected by the Re-inforcement Team and analysed in the field laboratory to ascertain the chloride concentration. In addition, for quality control 10 per cent of the analysed samples are randomly selected for re-analysis at the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B).



During the month of September and October, 1984, a trend of high chloride concentration was found in the LGS prepared by the villagers. Immediate measures were taken to find out the cause and it was revealed that incorrect preparation of the Silver Nitrate solution (which is used for chloride analysis) by the field laboratory Assistants, was the reason. To ensure the quality of the Silver Nitrate solutions, results of some of the analysed samples (by the ICDDR,B) were taken and then the field laboratory Assistants were also asked to analyse the same. The findings were compared and if the variations were observed within the range of 5 per cent then the Silver Nitrate solutions prepared by the field laboratory Assistants were considered acceptable.

High chloride concentration in LGS were also found in the Saline belt, particularly at Barisal, Bhola and Patuakhali. To keep the amount of salt in LGS in standard proportion, the villagers of those areas were taught to make the pinch tight (LGS mixture is prepared by the three-finger pinch of salt and four-finger scoop of Gur method) while preparing the solution which would reduce the amount of salt.

The result of the chloride analysis for the period of October 1983 - December 1984, revealed that about 88 per cent of the samples were within the safe and effective range of chloride concentrations. The proportion of different concentration groups are shown in Annexure 9, 10 and 11.

#### 8. LGS Usage Survey:

The LGS usage survey has been undertaken to monitor the pattern of usage rates. About one month after the teaching of how to prepare LGS, the programme areas are visited by the OTEP

Reinforcement Team. The team randomly selects about 300 households in one union to assess the extent of LGS use during the preceding 15 days prior to the time of survey. The average pattern of LGS use in the ten study areas during the period October 1983 - December 1984 is shown in Annexure-12. The highest rate of LGS use - 42.8% was in the month of November, 1984. The second highest - 42.7 per cent rate of LGS use was found in the month of April 1984. The month of April and November in Bangladesh is generally observed to be experienced with various types of epidemic diseases specially diarrhoea. The lowest rate (29.6 per cent) of LGS use was found to be practiced during the month of December 1983.

9. PERSONNEL:

The recruitment of both Programme Organisers and ORWs to fill up the vacant positions due to turn over were continued throughout the reported period. Nearly 400 ORWs were recruited and as of December, 1984 the number of ORWs and F.Os stood at 739 and 387 respectively. Total number of OTEP staff members at the end of the year was 1,301. To build up the workers with sufficient knowledge, training of Programme Organisers was a regular process. The areas of training were communication, planning and management, leadership, and technical training on Diarrhoeal Disease management. 200 Programme Organisers received technical training at ICDDR,B and 150 in other aspects at BRAC Training and Resource Centre (TARC) at Savar, Dhaka.

10. IMPACT EVALUATION:

The Evaluation of BRAC's Oral Therapy Extension Programme (EVABO) is continuously involved in looking into the various aspects of OTEP relating to mortality and morbidity. The detailed activities of EVABO have been elaborately mentioned in

the previous BRAC reports specially the reports on the Oral Therapy Extension Programme.

The Research and Evaluation Division (RED) will study the impact of the OTEP in three phases of which the data collection of first phase is complete and that of second phase is in the process.

The data of the first phase (one base line and four follow-up studies in eight Upazilas  $5 \times 8 = 40$  studies) are in different phases of processing. The data are being processed by stratum i.e., two Upazilas in the same stratum is considered simultaneously for processing. The present data processing position is presented in Annexure-7.

The data processing were progressing almost on schedule, however, due to the computer related technical problem of BIDS the final stage of preparing tables is delayed. We have an agreement with Bangladesh Institute of Development Studies (BIDS) to use their computer facilities for software services and preparation of tables.

BRAC also installed a CompuPro micro processor system in August, 1984. Its peripheral units are as follows:

1. System Model # 221 that includes -
  - a. 512 K memory size
  - b. 2 hard disk of 21 Megabytes each
  - c. MP/M 8-16 multi-user operating system
  - d. Dual 8" diskette drives providing a total of 2.4 megabytes of on-line storage
2. Five video display terminals
3. Letter quality Printer (Model 3515 NEC)
4. Dot Matrix Printer (Model 9650 Anadex)

As this CompuPro system is not compatible to IBM system (in which EVABO Phase-I data are being processed) data files

from IBM computer can not be processed directly in this system. However, to solve this problem arrangements were made to procure a special software (reformator) to transfer data to and from IBM to CTR. With the help of this software data files are being transferred from IBM to CTR for final processing of the data for EVASC Phase-I and is also going to process data for EVASC Phase-II. With its proper operation NED is hopeful to update the final data processing tasks which is lagging behind.

Out of 40 studies of Phase-I, data for ten studies are already in the tape and tabulations were done through EPDS system with the assistance of the NINE computer. Tabulations for rest of the studies will be done through BRAC's CompAra system. The different stages of data processing are shown in the Annexure-7. The two Upazilas for which tables were constructed are Goshairhat and Jajira and the first report will be prepared on these two Upazilas and the report is expected to be ready by the end of March 1965. The report on the remaining Upazilas will follow.

#### PHASE-II

The data collection in the second phase started in mid-November, 1965. In the second phase also we are collecting data on eight Upazilas of which two are Concentrated Reinforcement Programme (CRP) areas.

The present data collection position in these areas are shown in table 1. Registration of the Base line and first follow-up study is complete and the editing of these data are in process.

Table 1

Mortality Impact Study Phase II  
Data collection position

Stratum	Name of Upazila	Baseline	Follow-up 1	Follow-up 2
I	Kotwali (Barisal)	Complete	Complete	Complete
I	Kotwali (Chandpur)	Do	Do	Do
II	Melandah (Jamalpur)	Do	Do	**
II	Kasba (Brahmanbaria)	Do	Do	**
III	Modhupur (Tangail)	Do	Do	**
III	Araihazar (Dhaka)	Do	Do	**
II	Debidwar (Comilla)*	Do	Do	**
II	Islampur (Jamalpur)*	Do	Do	**

\* CRP areas

\*\* Data collection will continue as per schedule (see Annex-8).

11. Other Studies

1. Special Study on BRAC's OTEP

Our Research Demographer who is currently undertaking Ph.D. programme at the London School of Hygiene & Tropical Medicine took up an evaluative study on OTEP as a part of his doctoral dissertation. BRAC's RED personnel were continuously involved at various stage of his data collection and data processing. The data were edited and coded in the BRAC Head Office. The entire work upto the task of data entry into computer tape took about six months (July '84 to December '84).

The data is being carried in the computer tape and will be processed and analysed in U.K.

2. An investigation of motivation & essential qualities of OTEP field staff is now on going.

3. We are planning to undertake small studies on the following topics:

- i) Seasonal variation and pattern of LGS usages.
- ii) The LGS use and non-use by differential economic status.
- iii) A comparative study on the pattern of LGS usage and the level of retention knowledge on LGS in CRP and non CRP areas.
- iv) Evaluation of the Reinforcement Team and the Special Reinforcement Programme of CTEP.

#### CONCLUSION

A few additional innovative programmes have been incorporated in the BRAC Oral Therapy Extension Programme to bring behavioural changes among the rural people. The introduction of Concentrated Reinforcement Programme (CRP) has been found very positive for improving the quality of teaching the people about environmental sanitation, personal health and hygiene practices more effectively. The forthcoming diagnostic research studies may indicate whether further programme delivery adjustments will have to be made.

Coverage by Area, Thana, Union, Village and Household from October '83 to December '84

Annexure-1

Area	No. of Upazila covered	No. of unions covered	No. of villages covered	No. of households visited	Remarks
Comilla (N)	2	69	1,158	154,865	
Narsingdi	4	58	885	169,594	
Tangail	4	52	1,074	178,867	
Mymensingh (S)	1	32	350	137,737	
Barisal (S)	4	39	475	116,346	
Bhola	6	55	320	165,789	
Patuakhali	6	59	813	154,232	
Kishoreganj	6	50	617	137,969	
Brahmanbaria	2	50	616	132,826	
Gazipur	2	30	656	119,360	
Barisal (N)	1	23	282	63,694	
Barguna	-	2	27	13,951	
Firojpur	-	-	-	10,346	
Nanikganj	-	3	40	5,780	
Dhaka	-	1	25	2,952	
Comilla (S)	-	3	39	8,092	
Mymensingh (N)	-	3	62	15,451	
	<u>38</u>	<u>529</u>	<u>7,439</u>	<u>1,587,851</u>	

Statistical Report on School Forum  
from October '83 to December '84

Annexure-2

Area	Unions covered	School Covered			Participants			Cadre selected	Remarks
		Primary	High	Total	Primary	High	Total		
Comilla (N)	69	422	82	504	36,645	14,123	50,768	6,009	
Narsingdi	58	443	86	529	30,097	6,981	37,078	5,486	
Tangail	52	373	101	474	29,082	12,062	41,144	6,158	
Mymensingh	32	332	83	415	17,020	12,429	29,449	6,000	
Barisal (S)	39	408	142	550	27,656	19,932	47,588	5,511	
Bhola	55	334	59	393	22,898	6,520	29,418	2,648	
Patuakhali	59	532	133	665	29,797	13,246	43,043	7,273	
Kishoreganj	50	276	43	319	17,401	3,870	21,271	2,909	
Brahmanbaria	50	331	57	388	24,851	9,993	34,844	4,622	
Gazipur	30	371	110	481	32,857	16,448	49,305	4,896	
Barisal (N)	23	233	50	283	14,616	7,719	22,335	1,774	
Barguna	2	-	-	-	-	-	-	-	
Manikganj	3	23	2	25	1,152	147	1,299	310	
Dhaka	1	7	2	9	760	397	1,157	85	
Comilla (S)	3	22	5	27	2,722	889	3,611	307	
<b>Total :</b>	<b>468</b>	<b>4,107</b>	<b>955</b>	<b>5,062</b>	<b>287,554</b>	<b>124,756</b>	<b>412,310</b>	<b>53,988</b>	



Statistical Report on Different Forums  
from October '83 to December '84

Annexure-3

Area	Male No.	Seminar Participants	Traditional healer No.	Seminar Participants	Mosque No.	Forum participants	Patient Epidemic	Cared General	Total	Remarks
Comilla (N)	3,226	41,601	39	1,257	359	12,839	452	15,973	16,425	
Narsingdi	2,474	33,690	64	652	513	17,064	233	10,325	10,558	
Tangail	6,633	73,516	122	1,547	525	25,477	324	15,545	15,869	
Mymensingh (S)	1,149	17,605	42	505	238	10,225	109	4,809	4,918	
Barisal (S)	1,494	20,013	50	542	276	8,691	522	7,269	7,791	
Bhola	3,113	39,091	62	832	615	31,555	299	9,629	9,928	
Patuakhali	2,782	34,830	52	790	511	12,328	406	10,102	10,508	
Kishoreganj	1,182	25,099	43	786	250	8,525	35	6,357	6,392	
Brahmanbaria	5,195	59,734	42	945	417	19,592	48	6,584	6,632	
Gazipur	2,036	26,277	21	523	244	10,809	18	7,858	7,876	
Barisal (N)	632	7,198	21	434	82	3,050	-	2,457	2,457	
Barguna	122	1,777	5	79	23	636	-	548	548	
Firojpur	42	810	7	119	15	513	-	261	261	
Manikganj	78	1,057	3	23	17	456	-	327	327	
Dhaka	67	945	1	16	9	676	-	119	119	
Comilla (S)	121	2,256	2	33	10	525	-	400	400	
Mymensingh (N)	129	1,369	5	56	10	474	-	357	357	
Total :	30,475	386,868	581	9,139	4,114	163,435	2,446	98,920	101,366	

Area-wise Household Monitored and percentage of Monitored household/Grade from October'83 to December'84.

Annexure-4

Area	Households visited	Households monitored	Percentage of Households monitored/grade				Percentage of Households monitored
			A	B	C	D	
Comilla (N)	154,865	8,012	53.51	44.66	1.47	0.36	5.17
Narsingdi	169,594	8,336	54.02	43.34	2.16	0.48	4.94
Tangail	178,867	8,839	55.66	42.03	1.95	0.36	4.94
Mymensingh (S)	137,737	7,167	50.05	47.66	2.25	0.04	5.20
Barisal (S)	116,346	5,995	49.56	48.17	1.79	0.48	5.15
Bhola	165,789	8,454	51.06	46.49	2.27	0.18	5.10
Fatuakhali	154,232	7,946	53.12	45.19	1.32	0.37	5.15
Kishoreganj	137,969	7,013	56.00	45.02	1.11	0.27	5.08
Brahmanbaria	132,826	6,914	51.94	45.70	2.11	0.25	5.21
Gazipur	119,360	5,969	57.10	42.32	0.45	0.13	5.00
Barisal (N)	63,694	3,271	51.06	47.51	1.28	0.15	5.14
Barguna	13,951	715	53.15	44.76	1.68	0.41	5.13
Pirojpur	10,346	558	50.00	47.31	2.69	-	5.39
Menikganj	5,780	439	64.01	35.54	0.45	-	7.60
Dhaka	2,952	224	62.50	37.50	-	-	7.59
Comilla (S)	8,092	420	56.43	39.28	3.81	0.48	5.19
Mymensingh (N)	15,451	789	53.61	42.97	3.29	0.13	5.11
Total :	1,587,851	81,061	52.99	44.99	1.73	0.29	5.11

## Statistical Report on CRP from October'83 to December'84

Area	Union covered	Dai Trained	Shebika Trained	Colostrum feeding	Patient treated with LGS	Health meeting No.	Health meeting Participant	Improved Stoves	Children under supplementary diet	Remar
Comilla (N)	4	299	654	399	2,030	4,418	33,146	334	377	
Narsingdi	6	434	708	1,271	3,292	127	2,546	1,770	2,249	
Tangail	6	336	1,124	476	2,686	989	11,737	730	1,912	
Mymensingh	6	349	834	739	1,110	781	10,210	229	495	
Barisal (S)	4	405	1,214	225	847	900	21,157	190	234	
Bhola	6	355	812	817	2,417	429	5,998	335	3,855	
Patuakhali	6	397	754	1,015	3,444	1,998	21,199	1,148	1,074	
Kishoreganj	6	438	940	540	3,146	1,104	18,601	472	408	
Brahmanbaria	3	140	440	614	3,197	3,705	121,692	194	510	
Gazipur	3	246	462	391	1,043	1,627	14,496	769	705	
Barisal (N)	2	106	389	317	556	537	22,423	61	1,031	
Total :	52	3,505	8,331	6,804	23,768	16,615	283,205	6,232	12,850	

## Personnel and Staff position as on December '84

Area	A.M./P.O. Incharge	No. of Staff					Account- tant	ORW Lab. Team Asstt.	Service staff	Total	Remarks
		ORW Team	Reinf- orce- ment team/ SRP	CRP	Total	P.O.					
Comilla	1	16	12	6	34	1	62	1	14	113	
Narsingdi	1	16	10	9	35	1	85	-	15	137	
Tangail	1	18	12	9	39	1	72	1	15	129	
Mymensingh	1	15	8	9	32	1	79	-	15	128	
Kishoreganj	1	15	8	9	32	1	73	1	15	123	
Brahmanbaria	1	20	12	9	41	1	81	-	15	139	
Gazipur	1	20	12	9	41	1	82	1	15	141	
Barisal (N)	1	16	35	9	60	1	71	2	15	150	
Barguna	1	17	12	9	38	1	68	-	15	123	
Pirojpur	1	16	10	9	35	1	66	-	15	118	
<b>Total :</b>	<b>10</b>	<b>169</b>	<b>131</b>	<b>87</b>	<b>387</b>	<b>10</b>	<b>739</b>	<b>6</b>	<b>149</b>	<b>1,301</b>	

MORTALITY IMPACT STUDY PHASE-I  
DATA PROCESSING POSITION

Thana	BS	FS-1	Study FS-2	FS-3	FS-4
Bahubal	1	1	1	2(50%)	2(100%)
Rajnegar	1	1	1	2(50%)	2(100%)
Gosairhat	1	1	1	1	1
Jajira	1	1	1	1	1
Moralganj	1	1	1	1	1
Salika	1	1	1	1	1
Batiaghata	1	1	1	1	1
Mirpur	1	1	1	1	2(100%)

Identification

1 = All works have been done

2 = Figure within the bracket indicates the amount of computer editing job is to be done.

## Tentative schedule for mortality study (Phase-II)

Thana	Team - 4				Team - 5			
	Stratum-1 Program Barisal	Stratum-2 Program Kasba	Stratum-3 Program Modhupur	Stratum(2) Program(CRP) Dabidwar	Stratum-1 Comparison Chandpur	Stratum-2 Comparison Melandah	Stratum-3 Comparison Araibazar	Stratum(2) Comparison (CRP) Islampur
Baseline	16.11.83 31.12.83	1.1.84 15.2.84	16.2.84 31.3.84	1.4.84 15.5.84	16.11.83 31.12.83	1.1.84 15.2.84	16.2.84 31.3.84	1.4.84 15.5.84
F.U.-1	16.5.84 30.6.84	1.7.84 15.8.84	16.8.84 30.9.84	1.10.84 15.11.84	16.5.84 30.6.84	1.7.84 15.8.84	16.8.84 30.9.84	1.10.84 15.11.84
F.U.-2	16.11.85 31.12.85	1.1.85 15.2.85	16.2.85 31.3.85	1.4.85 15.5.85	16.11.84 31.12.84	1.1.85 15.2.85	16.2.85 31.3.85	1.4.85 15.5.85
F.U.-3	16.5.85 30.6.85	1.7.85 15.8.85	16.8.85 30.9.85	1.10.85 15.11.85	16.5.85 30.6.85	1.7.85 15.8.85	16.8.85 30.9.85	1.10.85 15.11.85
F.U.-4	16.11.85 31.12.85	1.1.86 15.2.86	16.2.86 31.3.86	1.4.86 15.5.86	16.11.85 31.12.85	1.1.86 15.2.86	16.2.86 31.3.86	1.4.86 15.5.86

## TOTAL SAMPLE ANALYSED

Oct.'1983 - Dec.'1984

## Chloride (Cl)

Analysed at field = 65,699

Re-analysed at ICDDR,B = 6,328

Sodium (Na<sup>+</sup>) = 260

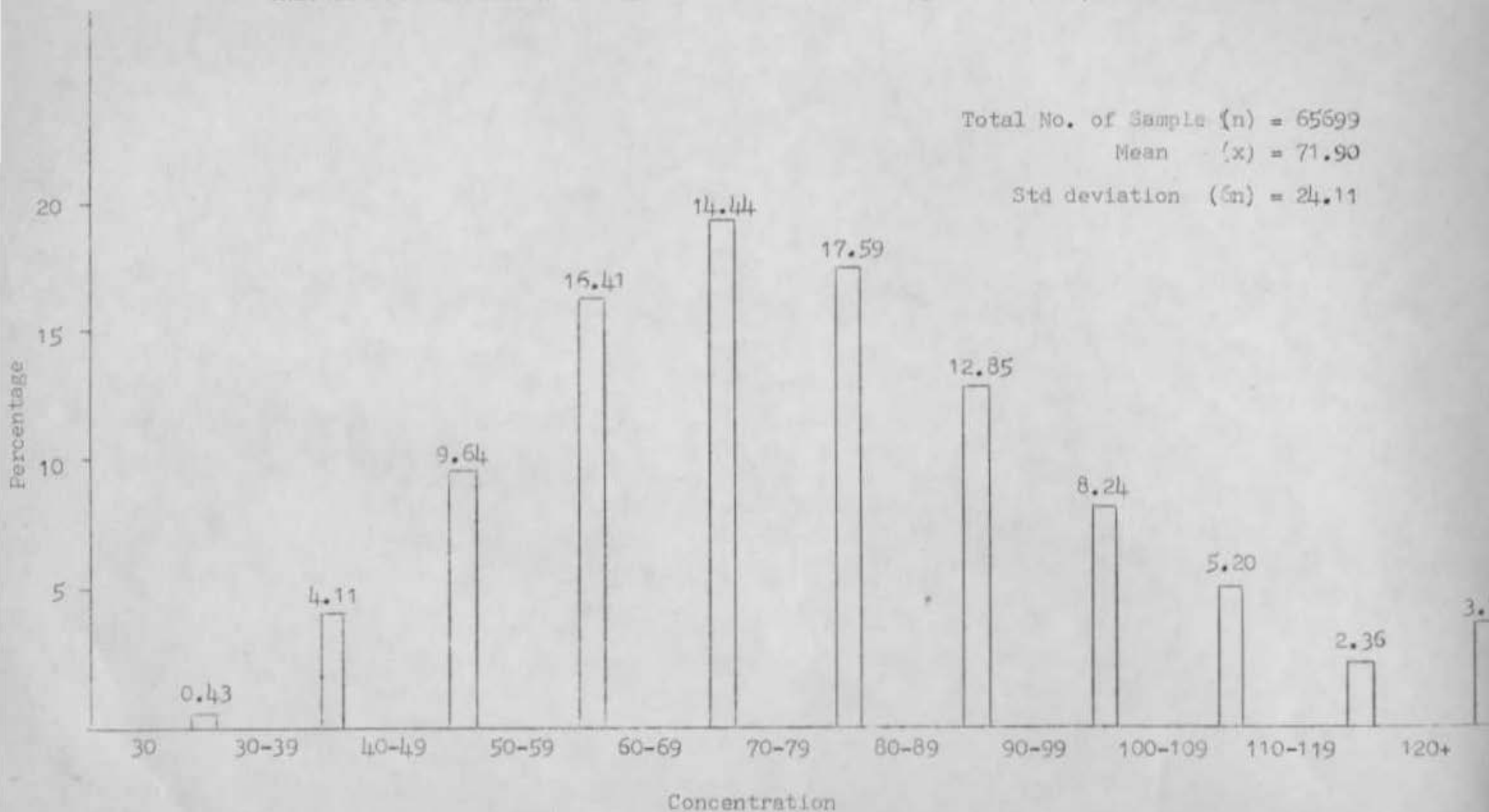
Potassium = 260

Glucose = 260

Distribution of chloride concentration as observed in the programme along with sample statistics. Oct.'83 - Dec.'84

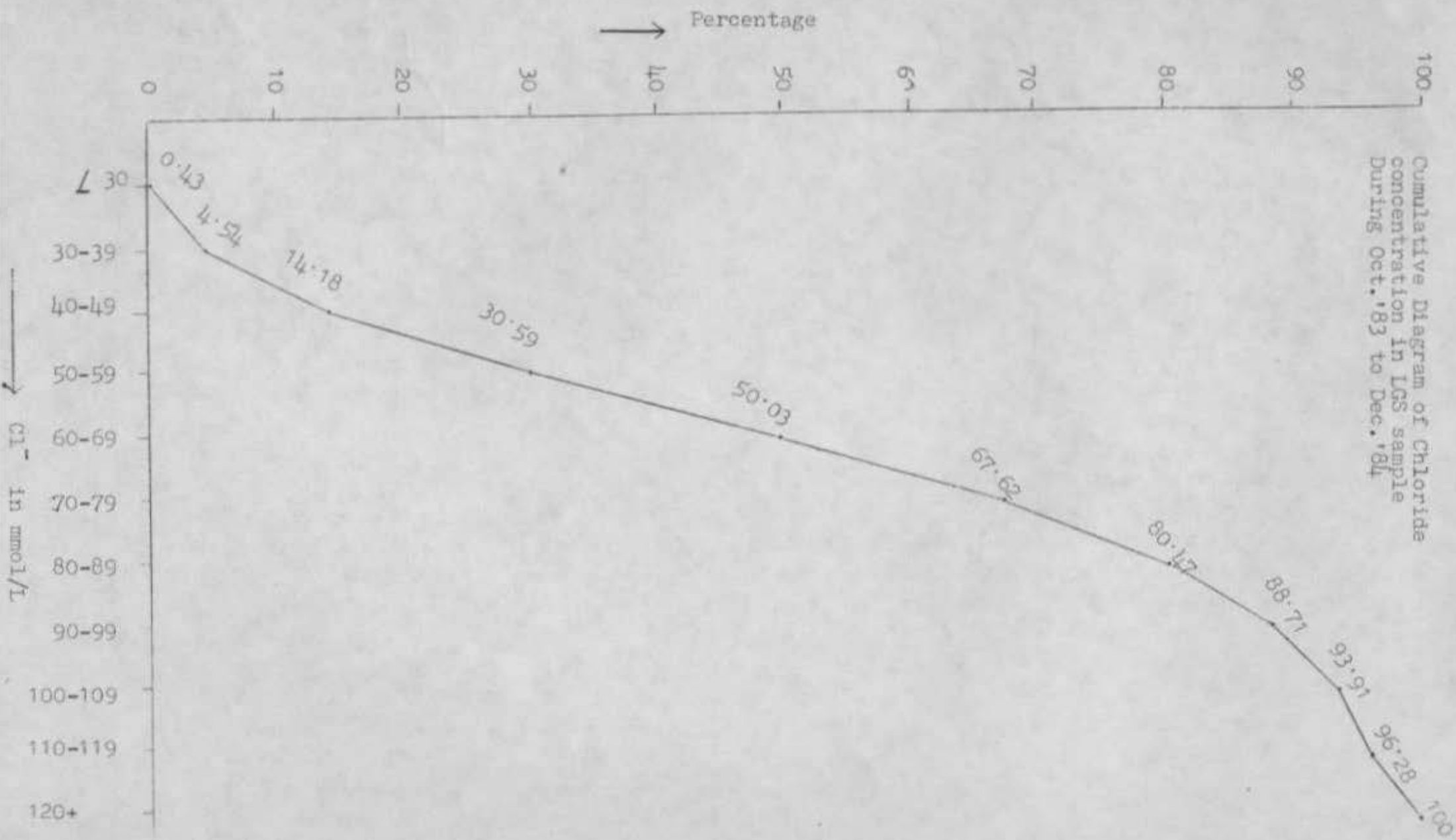
Chloride Concentrations (in m.mol/L)	Safety and effectiveness	October '83 - December '84
<30	Safe but effective	0.43
30 - 39	Safe and effective	88.28
100 - 119	Effective but potentially dangerous.	7.56
120 and over	Dangerous	3.73
Total sample		65,699
Mean (in m.mol/L)		71.90
S.d.		24.11

## CHLORIDE CONCENTRATION OF ALL AREA FROM OCTOBER '83 TO DEC. '84.

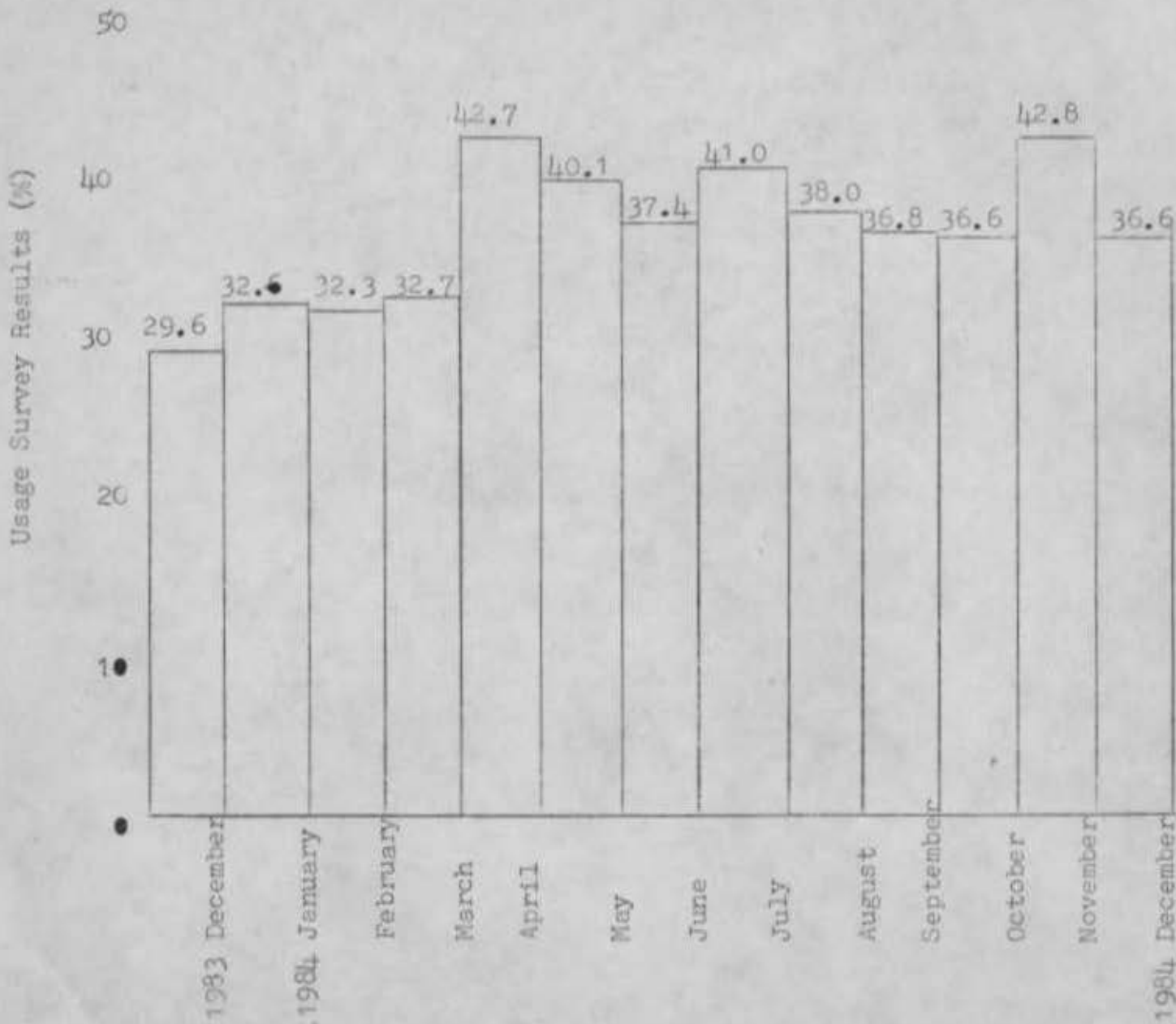




Cumulative Diagram of Chloride concentration in LGS sample During Oct. '83 to Dec. '84



## THE PATTERN OF LIB USAGE RATES FOR THE PERIOD OF OCT. '83-DEC.1984.



- i) NARSINGDI
- ii) GAZIPUR
- iii) COMILLA
- iv) B. BARIA
- v) PATUAKHALI
- vi) TANCAIL
- vii) BARISAL
- viii) MYMENSINGH
- ix) KISHOREGANJ
- x) BHOLA

