The Expanded Programme on Immunization: NGOs on the Move

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This tragic demographic drama in this part of the world does not demand merely mission, to use Vergil's words, "multa putans sortemque animo miseratus iniquam" (with thought and pity for their unjust lot), but also deserves appropriate courses of actions-- actions that are love made visible. Immunization today is recognised to be such course of action and a viable stay against this tragic drama.

But what is this tragic drama, after all ? Yes it is full of desperate statistical digits or figures turned into living nightmares characterising our history. Every year 8,30,000 children die in Bangladesh. Most of them die owing to diseases that are known to us and that can be prevented. In fact, immunization can prevent such diseases, and thus, arrest the inferno of statistics-- the rate of infant and child mortality. Realising this, both the Government and NGOs have been implementing, with utmost zeal and enthusiasm, what has come to be popularly known as "Expanded Programme on Immunization".

We present here a special report devoted exclusively to NGOs. The report does not stake out any undue claim for being comprehensive. It has concentrated only on a few selected NGOs, with BRAC as the lead case-study, only to indicate the extent of NGO involvement in microcosm, and to suggest the intensity of NGO focus and concentration on immunization. For the case-study on BRAC, we are thankful to *Dr. Mushtaque Raza Chowdhury* who has prepared and written the draft of this study himself.

-- Editor-in-Chief

Photo : UNICEF

Immunization—the rhythm and the reality

Introduction

The scene is no doubt painful and alarming : 8,30,000 children of 0-5 years die every year in Bangladesh. Out of this number – no doubt statistically monstrous – 2,40,000 children die only owing to the six detected but deadly diseases, namely, tetanus, whooping cough, measles, polio, tuberculosis and diphtheria. It needs mentioning that such diseases usually attack children at the very stage of their infancy, thereby enhancing and ensuring the possibilities of easy death.

In view of the deplorable situation of children dying and suffering as well as the rate of infant mortality which is the second highest in the world, non-government organisations (NGOs) have embarked upon special programmes geared towards arresting the rate of infant and child mortality in Bangladesh. True, their scope of operation is limited ; so is their scale of impact. But, their focus is intense, and concentration is laid closely. Some of these noteworthy NGOs are : BRAC, Caritas, World Vision, Radda Barnen, Concern, Aga Khan Jonoshasthya Karmashuchi, CARE and GK.

What do People Think About NGOs ?

'ADAB News' emphatically focused on finding out the attitudes of NGO beneficiaries towards NGOs and their immunization activities. One morning, the reporter had had the opportunity of talking to some beneficiaries inhabiting the slum areas of Dhaka. One of those moments of long exchanges may be encapsulated in the dialogue form thus :

Reporter : What is immunization ?
Beneficiary : Immunization ? Yes, my child took injection. It is good. It helped him... (he squinted his furtive eyes and his words were failing as it

were into tossed, trembling and sometimes unusually divided syllables).

Reporter : Who gave your child injection ?

Beneficiary : A tall man. He is good. He is kind. He comes from an organisation. His injection really helped us. We believe in his injection. Even six months ago, we did not know anything about injection or immunization. (He suddenly began to scratch his head.)

In fact, the general conception of people, particularly of the lower class and slum-dwellers, about the activities of NGOs is that they provide medicines, relief materials in times of natural calamities, home and shelter, and immunization. NGO participation in immunization, as it appeared, appeals to people particularly because NGOs have established their credibility through such activities as relief and rehabilitation, income-generation and conscientisation and also because NGOs operate closely and sympathetically with people.

In this report, focus is mainly laid on the urban-based programme areas of a few selected but noteworthy NGOs undertaking immunization programmes.

BRAC : A Case-Study

INTRODUCTION

The Government of Bangladesh is committed to universal child immunization (UCI) by 1990. Towards attaining this goal, the government has sought assistance from all sectors including the non-governmental organizations (NGOs). The Bangladesh Rural Advancement Committee (BRAC) has been assisting the Expanded Programme on Immunization in Bangladesh since October 1986. In order to receive independent estimates of vaccination coverage, the Research and Evaluation Division of BRAC in collaboration with EPI, Bangladesh, carried out a series of surveys in different areas assisted by BRAC. In the following we report the findings from these surveys. The report also includes some background information on how BRAC is assisting the government in EPI.

BRAC health workers visit each household and tell mothers about the six diseases and how their children could be saved from these for the rest of their lives through immunization.

BACKGROUND

The reasons why the six diseases, viz., diphtheria, pertussis, tetanus, poliomyelitis, measles and tuberculosis, have become important to control are tow-fold. Firstly, vaccines which are safe, relatively cheap, easy to administer and are generally effective, have been available for the last twenty years (Dick, 1985). Secondly, the public health and epidemiological importance of these diseases. It has been estimated that of every 1000 children born in developing countries, "5 will grow up crippled by poliomyelitis, 10 die of neonatal tetanus, 20 die of whooping cough (pertussis) and 30 or more die of measles or its complications" (Lancet, 1985). Recent statistics indicate that a total of 3.86 millions children die of neonatal tetanus, measles and pertussis and that 2.95 million become physically or mentally handicapped annually in developing countries excluding China (Keja et al, 1986).

In Bangladesh, reliable epidemiological data on the scale of those diseases are almost absent. Some recent statistics on three of these diseases are however available. In a national measles survey carried out in early 1984 in several urban slum areas, it was estimated that a total of 45,643 children aged 0-5 years die from measles and that a total of 2.6 million measles infections occur annually in Bangladesh (Singh, 1985). Based on results from Matlab sub-district, Koster et al (1981) found measles case fatality rate to be 3.7 per cent among all children.

Basu (1986) conducted a survey in early 1986 on the incidence of neonatal tetanus. Tetanus was found to be responsible for 50 per cent of neonatal deaths with a mortality rate of 40.92 for 1000 live births. On the basis of this survey it was estimated that nearly 135,000 neonatal deaths occur annually in Bangladesh. In another survey conducted by Basu (1984), incidence of poliomyelitis was calculated for Bangladesh.

It gave a residual lower limb polio prevalence rate, for 1000 children aged 5-9 years, of 1.57 for rural areas, 3.14 for urban areas and 2.11 for Dhaka city. It has been observed that about one-fourth of the polio cases, including those who died and those with complete recovery, is not detected in clinical surveys. On

BRAC and some other NGOs came forward to help the government implement the EPI by providing assistance in selected fields. BRAC is assisting the government in 147 upazilas.

the basis of the incidence rate found from the survey, it was estimated that nearly 10,000 cases of poliomyelitis occur annually in Bangladesh.

Immunization has been recognised as one of the most powerful and cost effective weapons against these diseases (Ko Ko, 1986). The Expanded Programme on Immunization (EPI) was established in 1974 and the World Health Assembly of 1982 gave high priority to the implementation of EPI to achieve the goal of providing immunization to all children (i.e., Universal Child Immunization or UCI) by 1990. The Programme has since been gaining momentum. Immunization coverage in 1987 on a global basis was 50 per cent compared to only 10 per cent in the early 1980's. A direct impact is that the lives of 103 million children are being saved annually through immunization (UNICEF, 1986). Some other observers, however, have raised questions about the actual impact of immunization on mortality (Chen, 1986).

In Bangladesh, the EPI was inaugurated in 1979. The immunization strategy is based on static centres with vaccine storage capability at town and Upazila Health Complex (UHC) levels* from which sub-centres at the Union levels are served on an outreach basis (Talukder, 1986). The upazilas are being included into EPI in a gradual manner. Eight upazilas were taken up in 1985-86, 62 in 1986-87, 120 in 1987-88 and the remaining upazilas in 1988-89. Although EPI was started in 1979, the achievement with respect to coverage has been very modest. In 1984, immunization coverage of children under one year of age for all doses was 2 per cent or less and was one per cent for pregnant women (Dick, 1985). Coverage surveys conducted in 1987 in four upazilas where an intensified EPI was going on since 1985, found that 14 to 55 per cent of the children were fully immunized (WHO, 1987).

* An upazila (sub-district) has a population of approximately 200,000 and an union has 20,000.

Photo : UNICEF

Health Worker in Immunization

BRAC Involvement in EPI

BRAC is a Bangladeshi non-governmental organisation which has been working for the development of rural Bangladesh since its inception in 1972. Health is one of the important programmes in BRAC. One of the important health programmes has been its oral rehydration therapy (ORT) programme which took BRAC to the doors of more than ten million households to teach mothers the home preparation and use of ORT solution, using home ingredients. More details about its ORT and other health programmes are available elsewhere (Chowdhury et al., 1988; Abed and Chowdhury, 1989).

In early 1986 BRAC decided to broaden its activities and include other child survival technologies in addition to ORT. A pilot experiment was taken up in Sonargaon upazila to test the capacity of BRAC in carrying out an immunization programme. With vaccines received from EPI and cold chain facilities of the local government, BRAC carried out an immunization programme for children under 2 years of age with BCG, measles,

DPT and polio, and for women in the reproductive age with T T. Groups of health workers were trained on how to carry out social mobilisation, registration, vaccination and follow-up. Over a period of nearly three months, children and women in two unions of the upazila were brought under the programme. The outcome was impressive. Nearly 80 per cent of the children had their third dose of DPT and 90 percent mothers had their second dose of TT (more details of the coverage are given in Appendix-1).

Such outcomes were tempting for BRAC to take up a larger programme. After a review, BRAC decided not to go for any such programme in the future. Why ?

BRAC in 1980 started a programme to teach the preparation and use of a home remedy for diarrhoea (i. e. ORT) and by 1988, mothers in 10 million households were visited by BRAC's own health workers. Such a cure for a disease is unique in the sense that it requires no outside assistance or supply, and mothers can deal with it internally at home. Such a programme is consistent with BRAC's overall goal of empowerment (Chowdhury, 1988) as ORT empowers mothers to treat diarrhoea at home without falling into the clutches of exploitative village health system. Moreover, as the mothers learn the technique and use home ingredients to prepare ORT, there is no need for them to depend on outsiders for supplies, not even on BRAC. But a BRAC programme on immunization means that it must ensure the supplies of vaccines for all the time to come, which is not consistent with BRAC's approach. BRAC feels that its or any other NGO's should be a "stop gap" kind of activity. The government is the only institution which has continuity, and government facilities and services are meant for people. The role of BRAC or any other NGO in this task should be minimal and temporary. With this realisation, BRAC decided against going for a larger immunization programme by itself (Abed, 1988).

But the question remained whether the government was capable enough to do an effective immunization programme only by itself. It was felt that it would be difficult for the government workers to carry out an immunization programme unless some assistance was provided by outside agencies such as NGOs. BRAC decided to come forward to assist the government in some selected areas of activities. BRAC identified five major areas where it could assist the government which include both the supply and demand sides of the programme. How BRAC is now assisting the government in EPI is discussed below :

1. **Assistance in Creating Demand :** BRAC health workers visit each household and tell mothers about the six diseases and how their children could be saved from these for the rest of their lives through immunization. They tell the mothers to use this opportunity when the vaccination team from the government visits their village. Such teaching on immunization is carried out at the same time when the BRAC health workers (HW) teach mothers about ORT.

The above teaching is done only once. However, other reinforcements also follow. Another team of workers assesses the knowledge of mothers, and afterwards, the mothers are again instructed about ORT and immunization. BRAC workers also meet the male villagers and promote immunization.

There is a 3-member team for each of the EPI upazilas under BRAC which exclusively works for EPI. One of the activities of these team members is to organise meetings in each village before the immunization day in order to increase awareness about and demand for vaccination. This team remains in each upazila for the initial one year.

2. **Assistance in Planning and Advocacy Exercises :** Before immunization starts in an upazila or a union, advocacy and planning exercises are organised with government officials and local elites. BRAC workers facilitate by helping the local EPI staff in organising these meetings. In these meetings, the whole operation of EPI is discussed and decisions regarding the role of various persons in this operation are taken.

3. **Assistance in Training :** BRAC provides training to mid-level and lower-level government staff on social mobilisation and management aspects of EPI. Also, BRAC selects and trains the local youths who volunteer to work for EPI.

4. **Assistance in Policy Formulation :** BRAC is represented at the National Steering Committee on EPI which is headed by the Health Secretary. With inputs and feedback provided to this Committee, BRAC assists the government in formulating policies regarding EPI. Also, BRAC is represented at the upazila level coordination committees for EPI. BRAC also participates at the weekly EPI staff meeting in Dhaka and provides feedback from its process documentation and other researches (see below).

5. **Assistance in Research and Monitoring :** BRAC has also undertaken research and evaluation activities on EPI. A process documentation research regularly makes observational studies on various aspects of the programme. The Research and Evaluation

Division (RED) of BRAC conducts independent coverage surveys in the BRAC and non-BRAC areas. Moreover, RED has done a study on the perception of the people about the six EPI diseases and vaccination and another on the profile of EPI volunteers (BRAC, 1988a ; 1988b). Results from such studies are fed back to EPI for their knowledge and further actions.

Methodology

The "30-cluster sampling method" suggested by the World Health Organization (WHO) to evaluate the vaccination coverage was used in this study. This technique was initially used in the United States (Serfling et al., 1965) and later in West Africa (Henderson et al., 1973). A later review of this method found it to have been satisfactorily used in 60 actual surveys and 1500 computer simulated surveys (Henderson et al., 1982). The essential of this method involves a random selection of 210 children in 30 clusters of 7 children each. Details of this technique are available elsewhere (WHO, undated).

The BRAC involvement with the present EPI in Bangladesh was started from its second phase. Of the 62 upazilas brought under EPI in this phase, BRAC assisted in 15 of them* : four in Chittagong division in Southeastern Bangladesh, three in Dhaka division in central Bangladesh and eight in Rajshahi division in Northwestern Bangladesh (see table below and map). Three separate coverage surveys were carried out, one for each of the above three groups of upazilas, which were conducted between June and September 1988.

* *BRAC is assisting in a total of 147 upazilas which is a third of total upazilas in Bangladesh.*

Table 1 : Name of Upazilas where BRAC assisted the government in EPI, during the second phase, and where the current surveys are carried out.

Division	District	Upazilas
Chittagong (Survey I)	Chittagong	Boalkhali Mirersarai
	Cox's Bazar	Cox's Bazar Ukhia
Dhaka (Survey II)	Manikganj	Sadar Gheor Saturia
Rajshahi (Survey III)	Rajshahi	Pabna Puthia
	Pabna	Ishwardi Santhia
	Bogra	Kahaloo Sherpur
	Rangpur	Gangachora Tangail

Four enumerators were selected who had previous interviewing experiences with other health research studies. They were trained by BRAC researchers in collaboration with EPI consultants in Dhaka. The training included both class-room lectures and field tests. Data collection was done under the direct supervision of BRAC researchers who conducted random reinterviews for quality control.

One of the problems faced by BRAC was the absence of immunization cards in many households. In those cases, verbal reports of the mothers were considered, which were checked for consistency and physical evidence (such as scar for BCG). Children aged 12 to 23 months formed the sample population.

RESULTS :

Coverage for Different Vaccines :

Table-2 shows the coverage for different doses of DPT. While the coverage rate for the first dose was quite impressive (up to 87.6%), it went down in subsequent doses, with the greatest drop between the second and the third dose. Coverages for the third dose were 57% for Chittagong upazilas, 53% for Dhaka upazilas and 41% for Rajshahi upazilas.

Table-2 : Coverage by DPT Doses in Three Groups of Upazilas Assisted by BRAC

DPT Dose	Chittagong No.	Chittagong Immunized	Chittagong %	Dhaka No.	Dhaka Immunized	Dhaka %	Rajshahi No.	Rajshahi Immunized	Rajshahi %
I	169	(114)	80.5	184	(125)	87.6	162	(94)	75.7
II	149	(99)	70.9	153	(110)	72.8	141	(86)	65.9
III	120	(75)	57.1	111	(79)	52.8	87	(55)	40.6
Sample size		210			210			214	
No. of Upazilas		4			3			8	

Note : Figures within parentheses indicate samples supported by cards.

Table-3 shows the coverage for different doses of Polio. It portrays a very similar picture to that of DPT.

Table-3 Coverage by Polio Doses in Three Groups of Upazilas Assisted by BRAC.

Polio doses	Chittagong No.	Chittagong Immunized	Chittagong %	Dhaka No.	Dhaka Immunized	Dhaka %	Rajshahi No.	Rajshahi Immunized	%
I	169	(114)	80.5	184	(126)	87.6	162	(94)	75.7
II	149	(99)	70.9	152	(110)	72.4	141	(86)	65.9
III	120	(75)	57.1	112	(80)	53.3	87	(55)	40.6
Sample size		210			210			214	
No. of Upazilas		4			3			8	

Note : Figures within parentheses indicate samples supported by cards.

Table-4 Shows the coverage for Measles in the three groups of upazilas. The coverage varied between 47 and 58 percent.

Table-4 : Coverage by Measles Vaccine in Three Groups of Upazilas Assisted by BRAC.

	Chittagong No.	Chittagong Immunized	Chittagong %	Dhaka No.	Dhaka Immunized	Dhaka %	Rajshahi No.	Rajshahi Immunized	Rajshahi %
Measles	123	(76)	58.6	103	(81)	49.0	100	(61)	46.7
Sample size		210			210			214	
No. of Upazilas		4			3			8	

Note : Figures within parentheses indicate samples supported by cards.

Table-5 shows that a higher proportion of children were given BCG, compared to measles. More than 80 per cent of those who were vaccinated by BCG had scar.

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Table-5 : Coverage by BCG in three groups of upazilas assisted by BRAC, and rate of scar.

	Chittagong			Dhaka			Rajshahi		
	No.	Immunized	%	No.	Immunized	%	No.	Immunized	%
BCG	162	(109)	77.1	166	(116)	79.0	143	(79)	66.8
Scar present	146			*			117		
Scar absent	7			*			18		
Scar absent	9			*			8		
Sample size	210			210			214		
No. of Upazilas	4			3			8		

Note : *Figures within parentheses indicate samples supported by cards.* * *Not available.*

Table-6 : Coverage by T T of women in the reproductive ages in three groups of upazila assisted by BRAC.

	Chittagong			Dhaka			Rajshahi		
TT doses	No.	Immunized	%	No.	Immunized	%	No.	Immunized	%
1	167	(55)	81.4	173	(98)	82.4	170	(74)	79.4
2	140	(30)	68.3	144	(89)	68.6	130	(62)	60.7
Sample size				210			214		
No. of Upazilas				3			8		

Note : *Figures within parentheses indicate samples supported by cards.*

Table-7 : Proportion of children fully immunized, partially immunized and not immunized, in three groups of upazilas.

	Chittagong			Dhaka			Rajshahi		
	No.		%	No.		%	No.		%
Fully immunized	102	(63)	48.6	79	(63)	37.6	70	(46)	32.7
Partially immunized	85	(51)	30.9	107	(65)	50.9	94	(48)	43.9
Not immunized	43		20.5	24		11.5	50		23.4
Sample size	210		100.0	210		100.0	214		100.0
No. of Upazilas	4			3			8		

Note : *Figures within parentheses indicate samples supported by cards.*

Table-6 shows the coverage for the two doses of T T in women of reproductive age found in the households where a sample child was found. Between 61% and 70% women received both doses of T T.

Children Fully Immunised

Table-7 shows the number of children who received all doses of all vaccines *(children fully immunized)* and children who received at least one dose of any vaccine but not fully immunized *(children partially immunized)*. Between a third and a half of the children were fully immunized, depending on the area (groups of upazilas).

Reasons for Immunization Failure

We collected information on the reasons for failure to immunize children which was done only in the three upazilas of Dhaka division. Table 8 shows the major reasons for failure. Failure to better inform or motivate the clients about the need for immunization for the first or later doses, or the time and place of vaccination or to dispel fears about side effects appeared to be important reasons for immunization failure (47.5%). Failures of mothers to bring the child for immunization (child ill/ absent, fear of side effects) were also found important (42.6%). Supply side problems accounted for only 7 per cent of the failures.

Government implement the EPI by providing assistance in selected fields. BRAC is assisting the Government in 147 upazilas. In order to receive an independent assessment of the immunization coverage, three surveys were undertaken, using the WHO's 30-cluster method, in three geographical locations in which BRAC provided its assistance. All these were from the second phase of EPI which meant that the programme was started in these upazilas about the same time.

Results found through these surveys portray an encouraging picture. Compared to 1984 when the national coverage was less than 2 per cent, the proportion of children fully immunized has been found to

apparent reason is its timing. Measles vaccine needs to be given at 9 months but all others are given from six weeks of birth. Epidemiologically, measles vaccine is probably more important as more children die from measles than any other of the five diseases. More publicity and awareness is needed to increase the measles vaccination rate (Koenig, Ital. n. d).

Now how do these rates compare with areas not assisted by BRAC. Comparable results from other areas are not available. However, we may compare the coverage rates provided by EPI on the basis of service statistics. During 1987-88, the coverage rate for DPT3 for the 70 upazilas taken up under intensified programme was 38 per

Table-8: Reasons for immunization failure in the three surveyed upazilas of Dhaka division

Reasons of failure	Frequency
Don't feel need for immunization	17
Unware about need for 2nd or 3rd dose	15
Place/time of vaccination not known	20
Fear of side effects	6
Child ill	16
Contradications	15
Child absent/mother busy	21
Vaccinator/vaccine not available	9
Others	3
Total reasons	122

DISCUSSION :

The Expanded Programme on Immunization (EPI) was initiated in Bangladesh in 1979 with an aim to achieve universal child immunization (UCI) by 1990. Until 1984, the achievement had been very modest. In 1985 a new programme was designed through which, it was planned, the whole country would be brought under EPI in four phases. The fourth phase is now underway and by July 1989, all the upazilas of the country would be brought under EPI. BRAC and some ohter NGOs came forward to help the

be as high as 49 per cent in Chittagong upazilas. The lowest of 33 per cent was observed in Rajshahi upazilas. The proportion partially immunized varied from 31 per cent in Chittagong to 51 per cent in Dhaka upazilas. Given some additional efforts it would not be much difficult to fully immunize these children. If this can be done, at least 80 per cent of the children will be fully immunized, which means fulfilling the target.

There was an unusual low rate for measles vaccination in comparison to DPT-I, Polio-I or BCG. The

cent. When the upazilas are considered according to whether they are served by BRAC or by other NGOs (such as CARE) or by the Government itself, the picture appears better in BRAC areas: 47 per cent in BRAC areas, 37 per cent in CARE areas and 35 per cent in Government areas (Appenix-2).

Is there any difference between upazilas with respect to the coverage rates? Results from these surveys cannot be used to find independent estimates for upazilas. Service statistics generated by the Government do suggest that there are

differences between upazilas. Service statistics from the Government spoke of a very high coverage rate in Kahaloo upazila under Bogra district in Rajshahi division.

BRAC, with the assistance of EPI, did an independent coverage survey using the 30-cluster methodology and found that 66 per cent of children, 12 to 23 months old, were fully immunized which closely supported the Government statistics. The reasons for this high coverage in this upazila were investigated. Three reasons came out to be prominent. First, the better transportation system within the upazila which made the movement of logistics and supervision easier. Second, the "high commitment" of the local Upazila Health and Family Planning officers. The third reason related to the timing of the ground work done by BRAC workers. The vaccination operation coincided with the house-to-house visit by BRAC woman workers for motivating mothers on EPI. In many other upazilas, these did not coincide as EPI could not be started on time as planned, which resulted in a time gap between the motivation work done by BRAC and the actual EPI operation. This evaluation (coverage survey) did not look at differentials in coverage (between socio-economic groups, for example).

The other important result from this study related to the reasons for failures to immunize children. We analysed data from the three upazilas of Dhaka division which suggest the need for more motivational work and more communications to mothers about the time and place of vaccination in order to recruit more acceptors and to sustain a high rate of coverage.

APPENDIX-1

Table: Coverage Rates Achieved in Sonargaon Upazila (1988)

Name of Vaccines	Coverage (%) by doses		
	I	II	III
DPT	89.5	80.9	76.8
OPV	90.4	82.5	78.2
Measles	89.3		
BCG	95.8		
TT	93.7	90.2	

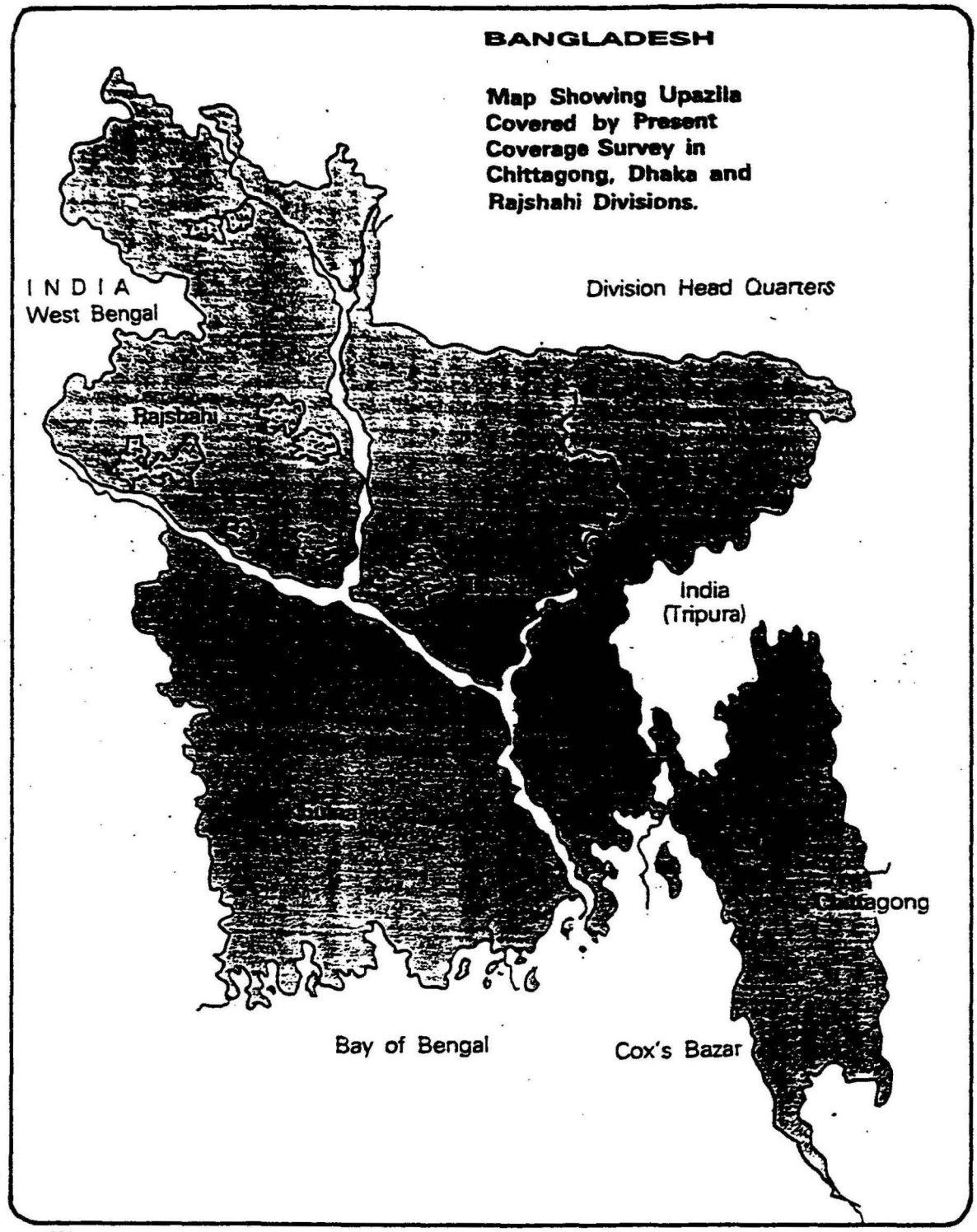
Source: BRAC (1987)

APPENDIX-2

Table: Reported Coverage Rate of DPT3 in BRAC, CARE and Government Upazilas (July '87-June '88)

BRAC		
District	No. of Upazilas	Per Cent DPT3 (0-12 months)
Rangpur	7	85.0
Bogra	1	50.0
Manikgonj	1	47.0
Chittagong	2	46.0
Rajshahi	2	40.0
Cox's Bazar	2	32.0
Patuakhali	2	27.0
	17	46.7
CARE		
Jessore	8	60.0
Khulna	9	27.0
Barisal	9	24.0
	26	37.0
Non-BRAC/CARE		
Sylhet	2	63.0
Tangail	2	50.0
Mymensingh	4	38.0
Noakhali	3	35.0
B. Baria	2	35.0
Comilla	3	32.0
Dhaka	3	30.0
Munshigonj	3	28.0
Faridpur	2	24.0
Jamalpur	3	22.0
	27	35.0
All Areas	70	38.0
		38.0

Source: Cumulative Vaccination Report, Phase I & II DPT-3, 7/87-6/88, EPI, Government of Bangladesh, 21 August 1988.


BANGLADESH
Map Showing Upazila Covered by Present Coverage Survey in Chittagong, Dhaka and Rajshahi Divisions.
INDIA
West Bengal
Division Head Quarters
Rajshahi
India
(Tripura)
Chittagong
Bay of Bengal
Cox's Bazar