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THE RESEARCH AND EVALUATION DIVISION
ANNUAL REPORT 1986

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BANGLADESH RURAL
ADVANCEMENT COMMITTEE

DHAKA, BANGLADESH

The Research and Evaluation Division
Annual Report 1986

March 1987

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

INTRODUCTION:

The Bangladesh Rural Advancement Committee (BRAC) is a Bangladeshi non-governmental organisation (NGO). It was started in early 1972 as a relief effort to help the returning refugees of a remote area of Sunamganj district following the War of Liberation. Recognizing that mere relief was not a longterm solution to improving people's lives, BRAC started a community development programme in late 1972. By 1977, it became clear to BRAC that a community approach to development would not reach those most in need i.e., the landless and other disadvantaged sections of the community. The whole strategy of BRAC was changed and the effort was targetted at those who sold their manual labour for living.

During the past 15 years or so, BRAC has developed and expanded enormously. It is now the largest NGO in Bangladesh. Activities now range on a wider area of rural development. BRAC's Rural Development Programme (RDP) is a front-line project in which credit is disbursed to landless and other target groups. In Integrated Development Programme (located in Sulla, Manikganj and Jamalpur) different programmes relevant to the need of rural Bangladeshis including education, health, agriculture and economic activities are tested and implemented. The Child Survival Programme (CSP), a successor to BRAC's nationwide oral rehydration therapy (ORT) programme for diarrhoea, is testing two approaches to primary health care: (a) a selective programme on ORT, immunization and vitamin-A conducted in several areas of North Bengal and greater Chittagong district and (b) a comprehensive programme with eight components in five upazilas. The Non-Formal Primary Education (NFPE) is an effort to develop and test out educational programmes for those children who can not attend or drop out of the formal system. Apart from the above, BRAC projects also include a Training and Resource Centre (TARC) and a Research and Evaluation Division (RED).

THE RESEARCH AND EVALUATION DIVISION (RED):

The Research and Evaluation Division is an independent unit within BRAC. Established in 1975 to compile monthly reports on different field programmes, the Division has grown into a large

professional unit. The Division now occupies almost a full floor of BRAC's 6 storey office building at Mohakhali in Dhaka.

Compared to 1975, when only one statistician working for RED could not be utilized full time, the Division now has nine full-time staff including three Ph.Ds, this is not considered enough to carry out the many studies needed for different BRAC projects. The total strength of RED now is more than 70 with 45 in the field and nearly 20 in Dhaka engaged in coding and editing of questionnaires.

The focus of the RED activities is essentially the BRAC need for research and evaluation. It plays an effective and significant role in the conception, planning, implementation and evaluation of BRAC programmes. Research not directly related to BRAC but relevant to rural Bangladesh is also carried out so that BRAC and other partners can better understand and conceptualize rural processes. Depending upon the availability of staff time and other necessary resources, the RED also helps other NGOs in evaluating their programmes.

RED in 1986:

The year 1986 may be seen as a year of transition for the Research and Evaluation Division. The role of RED in BRAC was considered through workshops and formal and informal meetings, and have resulted in defining even a larger and wider role for RED in the planning and policy making processes in BRAC. The following gives a summary of 1986 activities.

New Recruitment and Staff Development:

In keeping with the new strategy of involving field programme staff in the research processes, a senior area manager of the CSP has been temporarily transferred to RED to participate in the study on the feasibility and acceptability of rice-based ORS.

During November 1986, a statistician has joined RED to strengthen the quantitative section of RED.

During the year, two RED staff members received higher degrees. Dr. A. Mushtaque R. Chowdhury, a Senior Research Demographer, received a Ph.D in health programme evaluation from the Faculty of Medicine of the University of London, U.K. Mr. Zafar Ahmed, a Senior Staff Economist, received a M.A. degree in Agriculture and Rural Development from the Institute of Social Studies, The Hague, The Netherlands.

Review of RED Activities:

A review of RED activities was carried out in April and May, 1986, by two expatriate consultants: Dr. S.P.F. Senaratne, an anthropologist from Sri Lanka and Dr. S. Biggs, an economist from U.K. They discussed with RED staff and representatives of different BRAC programmes, on the role of research in BRAC. Their report is entitled, "who does what research: the role and organisation of research in BRAC".

Workshops on New Strategy for Research in BRAC:

In line with the consultants' recommendations, RED organised four workshops with representatives from different BRAC programmes. These workshops, held during October 1986, resulted in formulating a strategy for research in BRAC which would have maximum involvement from the programme personnels and dissemination of the outcome of research to the field staff in form commensurate with their need and understanding. Also a list of 112 research topics to be undertaken by RED during 1987-88 was finalised. The research is to be done according to the priorities set by the programme and RED staff and its implementation is dependent on the recruitment of RED staff.

Reports Published:

1. Monohordi Brickfield: A Collective Enterprise of the Rural Poor. This study looked at the different processes related to a brickfield that has been jointly undertaken by different groups of landless men and women under the Monohordi centre of the Rural Development Programme (RDP).
2. Evaluating Community ORT Programme: Indicators for use and safety. In this paper, which was part of a Ph.D thesis, the problems related to the measurement of usage and safety of ORT solutions were examined. It was published in Health Policy and Planning, 1(3) 214-221 (1986).

Reports Prepared for Others:

3. Restoring Sights: An Evaluation of Six Eyecare Projects in Bangladesh. At the request of the Canadian International Development Agency (CIDA) and Operation Eyesight Universal (OEU) of Canada, RED carried out an evaluation of the Canadian funded eyecare projects in different areas of Bangladesh. The report (37 pages) has been submitted to the NGO Division of CIDA in Ottawa, Canada.

Papers Presented at Workshops/Seminars:

4. Behavioural Change in Rural Bangladesh. Paper presented at the International Nutrition conference held in Washington D.C., USA, during July 1986.
5. Non-Formal Primary Education of BRAC. Case study presented at a training workshop organised by Approtech Asia and Management Institute of Manitoba (MIM), Jakarta, Indonesia, during November, 1986.
6. Evaluation of the BRAC ORT Programme in Bangladesh. Paper presented at the Regional Scientific Meeting of the International Epidemiological Association, held in Jhansi, India, during February, 1986.

7. The BRAC ORT Programme. Short talk given at the US Agency for International Development Mission in New Delhi, India, on 1 March, 1986.
8. Evaluation of ORT Programme. Short consultancy talk given at UNICEF Mission in New Delhi, India, on 1 March 1986.
9. Effects of Vitamin A Supplementation on Morbidity and Child Survival in Bangladesh. Draft project proposal presented jointly with representatives from Cornell University, USA and Helen Keller International, U.S.A., to the workshop on methodologies for measuring effects of Vitamin-A supplementation on mortality, organised by National Research Council of the US National Academy of Sciences, in Washington D.C. during August, 1986.
10. Methodology on Models for Behavioural Analysis and Trials on correct Breast Feeding, Colostrum, Supplementary Feeding, Nutrition of Pregnant and Lactating Mothers and Adolescent Girls, Domiciliary Rehabilitation Trials. Report submitted to USAID, Washington D.C., 1986.
11. Primary Health Care in Bangladesh: BRAC's Intervention Report presented to the Directorate of Health Services, Government of Bangladesh, in 1986.
12. A Brief on BRAC's Oral Therapy Extension Programme: Paper presented at the Regional Workshop on Social Mobilization for UCI and ORT, organised by UNICEF, in Bangkok, Thailand, in 1986.
13. Diarrhoea Management Among Infants and Children with Special References to Educational Intervention at Family and Community Levels. Paper presented at the First Regional Conference on Education for Better Health, at the Institute of Child Health, Madras, India, in 1986.

Thesis and Other Academic Reports by RED Staff:

14. "Evaluation of a Community Based ORT programme in Rural Bangladesh". Ph.D thesis submitted by AMR Chowdhury to the University of London, 1986.

15. "Agricultural Technology in Bangladesh: Resource Allocation and Distribution in an Alternative Framework", 1986, M.A. thesis submitted by Zafar Ahmed to the Institute of Social Studies, the Hague, The Netherlands, 1986.
16. "Landless and Landlessness in Bangladesh, The processes of Disaggregation and Polarisation". Term paper submitted by Zafar Ahmed to the Institute of Social Studies, The Hague, The Netherlands, 1986.

Consultative Meeting:

Recent research has shown a direct link between Vitamin-A supplementation and improved child survival. Considering that such a finding has a big policy implications for child survival programmes in Bangladesh and other less developed countries where Vitamin-A deficiency is a big problem, BRAC proposed to undertake research to examine the effects of periodic Vitamin-A supplementation on child survival in Bangladesh. In order to discuss the ethical issues related to such a research, BRAC called a meeting of leading citizens including representatives from medical and scientific community on 13 December, 1986. The participants discussed a proposed design and suggested a number of modifications. The design is being revised/ ^{to} incorporate the recommendations made. (Minutes of the meeting and list of participants are given in Appendix 1).

Assistance in External Evaluation:

An external evaluation of BRAC's Oral Therapy Extension Programme (OTEP) was held during January-February, 1986. Staff members of RED who were involved with the evaluation of OTEP participated in this external evaluation which was conducted jointly by Dr. I. Cornaz of the Swiss Development Cooperation, Berne, Switzerland and Dr. D.F. Fyle of the John Snow Inc. Boston, USA.

ON-GOING RESEARCH:

As mentioned previously, the year 1986 has been seen as a year of transition for RED. During the year, several new research projects have been initiated and others conceived or planned. The following gives a summary of current research projects.

Research in Rural Development Programme (RDP):

The Rural Development Programme (RDP) functions through 45 centres in different upazilas of the country. Conscientization of rural poor through the formation of landless and other target groups and extension of credit to these groups are the expressed objectives of RDP. During 1985-86, Tk.80 millions were disbursed and the repayment rate was 86%. The programme organized 2,074 groups of "target" people (1,025 male, 1,049 female) with a total membership of 53,635 males and 50,680 females.

Research in RDP (formerly Rural Credit and Training Project, RCTP) was initiated with baseline surveys in 1979 and economic analysis of different schemes undertaken in 1981. Such analysis continued and new studies on the social relationships were taken up. These studies have helped RDP redesign several of its policies. The present RDP in several ways is the outcome of research studies done by RED on the feasibility of RCTP and former Outreach programmes. (The two programmes were subsequently merged to give RDP).

The new studies we plan in the immediate future includes:

1. Revival of the Continuous Evaluation Programme: In 1981, RED, in collaboration with the former RCTP started a continuous evaluation programme. It aimed to study continuously several households in a few organised groups on aspects relevant to the programme, such as change in social status, standard of living, etc. This research was stopped because of implementation problems. RED consider the design an effective one to show change, and is

being revived. Modifications particularly of structural nature are being made. Initially, this will be pilot tested in 2 centres and, if successful, will extend to others.

2. Power and Organisation: This is a study on the empowerment of the rural poor, organised by RDP, who successfully challenged traditional powerholders in the local elections of 1983. This study endeavours to identify the power resources— social, political and economic— of the successful members of the Union Parishads, analyse the process of selection and election; and assess their performance. Data collection has been completed and a draft has been prepared which has been sent to key commentators.

Research in Oral Therapy Extension Programme (OTEP):

The Oral Therapy Extension Programme (OTEP) was BRAC's effort to teach rural mothers how to prepare an oral rehydration salt (ORS) solution using ingredients available in their own houses (viz., salt, sugar and water). The programme was started in 1980 and during the first phase (July 1980 - September 1983), one mother in each of 2.5 million households in the greater districts of Sylhet, Jessore, Khulna, Faridpur and Kushtia were taught the method. During the second phase (October 1983 - September 1986), another 5 million households in the greater districts of Dhaka, Comilla, Noakhali, Mymensingh, Tangail, Jamalpur, Barisal and Patuakhali were taught.

3. Study to measure the impact of OTEP on child mortality in first phase areas: This study is attempting to measure the impact, if any, on mortality in the first phase areas through multi-round retrospective surveys in 8 different upazilas. Data collection for the study were completed in 1984 and analyses were made. A draft report has been prepared which has been circulated for comments.

4. Study to measure the impact of OTEP on child mortality in second phase areas: This study was undertaken in early 1984 and data collection were completed in 1986 which are now being processed at BRAC's Electronic Data Processing Centre (EDPC).

Research in Child Survival Programme (CSP):

The Child Survival Programme (CSP) is a further extension of OTEP, but also includes of other elements related to the survival and development of children in Bangladesh. The programme, which will run for four years, has two major parts. A selective primary health care programme includes teaching of ORT and helping the government in their effort to achieve universal child immunization (UCI) and Vitamin-A capsule distribution. It is being implemented in the greater districts of Chittagong in the east and Rajshahi, Pabna, Bogra, Rangpur and Dinajpur in the north of the country. A more comprehensive PHC with eight components including the above three has been undertaken in selected upazilas. During the four years of the programme, 15 upazilas will be covered through this programme including Manikganj, Gheor, and Saturia in Manikganj district, Santhia in Pabna district, and Rangpur in Rangpur district.

Research Plan for CSP:

The Research and Evaluation Division (RED) played a prominent role in the development of OTEP from its pilot phase through to its culmination into CSP. RED wishes to play a more useful and supportive role in the development and conduct of CSP. RED sees a three-fold role: firstly, in the development of messages and programmes for different components; secondly, in the monitoring of processes directly or indirectly related to the success of the programme; and thirdly, in the measurement of impact indicators.

The last two roles mentioned above will be done by taking up longitudinal and indepth studies in selected unions/villages that are either under the programme or outside of it. It is envisaged that eight unions (four in the eastern region and four in the northern region) will be studied. In baseline survey data on the following will be collected: retrospective births and deaths, morbidity due to selected conditions, immunization and Vitamin-A distribution status, family planning practice and selected

socio-demographic characteristics including household composition. Soon after the baseline, a vital events registration system will be introduced in all households of the selected unions, births, deaths and migration will be recorded by a registrar who will be based in the unions. At the same time one or two villages with at least 200 households will be selected in each union for indepth studies. Resident investigators will then visit households once every week and inquire about morbidity experiences in the previous week. As soon as a "good" rapport is established between the villagers and the investigators, indepth social anthropological studies will be initiated on the particular topics of interest to CSP (e.g., reasons of dropping out of from immunization programme, perceptions about immunization and immunizable diseases, problems in the functioning of village health committee and health volunteers, etc.). Such a village study will allow us to test different programme methodology in different settings before implementation. So far, the baseline survey has been completed and registration of vital events and village study has been started in three programme unions (two in Manikganj and one in Gheor). There will be a non-programme union selected in this region. In the northern region, four such unions will be selected soon.

The following is a listing of on-going research on CSP.

5. The Jhitka Project: This is a continuation of the former "positive deviance" study jointly undertaken by BRAC, the Tufts University of USA and the Institute of Nutrition and Food Science of the University of Dhaka. This was the first action programme research undertaken by RED. This project developed a unique methodology for teaching behavioural messages. We first worked with the workers, then the messages were transmitted to the volunteer mothers and finally the volunteer mothers communicated these messages to the wider community. In this project RED is

testing out and developing messages for different components of OBF. Many of the outcomes have already been introduced into the programme.

6. The Rice-ORS Study: Recent research carried out at the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) and elsewhere has documented important advantages (such as smaller stool frequency and duration of diarrhoea more availability of rice at home, etc.) of ORS made from rice powder compared to that made from glucose. RED has undertaken a study to compare the social acceptability, feasibility and safety of rice-ORS in comparison to gur (sugar or glucose) based ORS. Three unions in Joypurhat district (former Greater Bogra district) have been selected for this research. Rice-ORS and lobon-gur ORS will each be taught to one union, while in the third, both will be taught simultaneously. Results will be monitored through quarterly surveys.

7. Baseline Study of Selected Unions: As part of the RED programme for CSP, several unions will be studied continuously. A baseline survey on selected indicators has been completed in a number of unions and is being started in others. Data processing is being done at BRAC's EDFC.

8. Morbidity Monitoring: In the selected villages of CSP, a weekly morbidity monitoring system has been introduced. The purpose is to describe the morbidity pattern in different areas so that priorities can be identified in the training of village health workers. Also, it will facilitate a study of change in morbidity pattern over time due to CSP.

9. Registration of Vital Events: In order to compare changes in mortality in programme and non-programme unions, a vital events registration system has been introduced in selected unions. A resident registrar is visiting each household once every month and asking about events in the previous month. Supervision of this

operation is being provided by the same person who supervises the village study. Efforts are now being made to ensure the quality and reliability of the data.

Another purpose of this study is to devise a low-cost, low-key registration system for the country as there is none now operating.

10. A Study of Immunization Non-Acceptors: Immunization coverage in Bangladesh is very poor. The Government is interested in increasing coverage. A major concern now is dropout rates. BRAC has been running an immunization programme (with TT and DT) in its Manikganj project for quite sometime. The village study in the two unions of Manikganj has provided a good opportunity to study the reasons of dropout from that immunization programme.
11. A Study on the Perception about Immunizable Diseases: A study has been undertaken in the indepth study villages to investigate people's perception about each of the six immunizable diseases: measles, TB, diptheria, pertusis, tetanus and poliomyelitis.
12. A Study on the Measurement of Effective Usage for ORT: The question of measuring effective usage of ORT has become an issue of global importance. Effective usage means safety and effectiveness of ORS being given, the amount and timing of its provision, and the food being given during an episode of diarrhoea. RED has initiated a study in its indepth study villages to monitor effective usage of ORT. During their weekly rounds to collect morbidity data, field workers look for diarrhoeal cases present in the household. An identified patient is followed at least twice a day until he/she recovers and collects data pertaining to the measurement of effective usage (including a sample of ORS being given to diarrhoea patients, to be analysed for electrolyte content). A dietary instrument developed in Bangladesh is being modified to collect more precise information on food intake.

13. Study on the Effectiveness of TBA Training: BRAC has been training Dais (traditional birth attendants or TBAs) for quite sometime. Unfortunately no study has been undertaken to assess the effectiveness of such training partly because of the methodological problem involved in actually observing Dais in operation. RED has started a study that involve female field workers in the village study: They will observe deliveries being carried out by Dais. They will assess the practice used by Dais in the deliveries (particularly those related to hygiene). Interview with the pregnant and nursing mothers will be used to assess how much of the Dai training (related to pre-and post-natal care) is transmitted to mothers.

14. Study to Compare Group Vs. Individual ORT Teaching: In the first and second phase of OTEP, ORT was taught on a one-to-one basis, i.e., one health worker teaching one woman at a time. Recently the strategy has been changed and instead a worker is teaching a group of 3-4 women at a time. The rationale for this change was that it was more cost effective to teach in a group, and that group teaching facilitates better interactions between mothers and health worker. This interaction would result in more acceptance and improved use of ORT. However, this hypothesis has not been proven yet and RED has undertaken a study to compare the two types of teaching with respect to safety, acceptability and cost-effectiveness.

Research on Para-Legal Project:

Under the Para-Legal Project, men and women belonging to landless village organizations are being trained to act as Para-legal counsellors. They will assist in Shalish (village court) and registration of marriage, properties, etc. They will act as counsellors about civil rights and help fellow groups members in avoiding conflicts that lead to litigation. The pilot phase of the project has started in 1986. RED is actively involved with this project.

15. Pre-project research on para-legal programme: The central objective of this study was to identify the nature of conflict in rural Bangladesh. The study was conducted in a BRAC area (Manikganj) and for comparison, in a non-BRAC area (Comilla). On the basis of this research it was possible to identify the sequence in which the different components of the para-legal programme were to be carried out.

16. An evaluation of the first phase of the para legal programme including acceptability and feasibility of the programme has been conducted. The data are now being analysed.

Research Planned:

17. Family Planning: An Examination of Old Age Security

Hypothesis: "Children are the old age security" has been mentioned as an important reason for having a large family in societies such as Bangladesh. Unfortunately, this has not been studied yet and BRAC is planning to undertake a study on a small pilot scale to test this hypothesis. RED is now preparing a protocol for the purpose.

18. Vitamin-A Supplementation: A Study to Measure the Effects on Childhood Mortality: Recent research conducted in Indonesia showed that a periodic supplementation with Vitamin-A reduced preschool mortality by upto 34 per cent. Recognising that such a result would have profound policy implications with respect to priorities in resource allocations and that a longterm solution to Vitamin-A deficiency lies in consumption Vitamin-A/B-carotene rich foods, BRAC, in collaboration with Helen Keller International and Cornell University, both of USA, is undertaking a large field trial to study the effects of community nutrition education on Vitamin-A levels and child survival. A meeting organised by BRAC in Dhaka in December and attended by leading citizens including those from the medical and scientific community discussed a draft design for the study (see Appendix-1). This draft is being revised now in

view of the opinions expressed in the meeting. The study will be started from July 1987.

Research in Manikganj Integrated Project: The Manikganj Integrated Project (MIP) was started in 1976. It has expanded since then and is now covering 182 villages of Manikganj Upazila. Different programmes related to the development of target groups have been undertaken and include: group formation, education, credit, live-stock, poultry, pisciculture, irrigation, employment generation, non-farm production, health, family planning, nutrition, etc. RED has recently undertaken a programme to document different activities and to research some of them. Those under health and nutrition have been mentioned under CSF.

19. Peasant Perception on Child Marriage, Divorce and Dowry: This study is being undertaken as a part of a pilot programme on raising a cadre of village-level legal para professionals. RED is actively involved with this pilot programme including collection of baseline information on child marriage, divorce and dowry.

20. A series of peasant perception on legal issues will be initiated. A study on peasant perceptions on law enforcing agencies is now being planned.

21. Documentation of Health and Nutrition Programme: This documentation has been undertaken as a background to future studies on different aspects of Manikganj Project's programme on health, nutrition and family planning.

22. Study on Livestock: A study has been undertaken to evaluate various aspects of the Manikganj programme on Livestock. Aspects which are planned to be covered are: Credit, vaccination, health services, para-vet workers, artificial insemination, etc. A background paper is being prepared now giving details of the programme and the research questions.

23. Research in Sulla Project: Sulla is the oldest BRAC project. During the past 15 years, it has gone through a number of development phases. Unfortunately, very little documentation is available on the experience. RED is planning to initiate a detailed documentation of the project including several research studies, particularly on group solidarity, on the central landless organisation, health, etc.

REPORT OF A MEETING HELD IN DHAKA ON 13 DECEMBER, 1986
ON A PROPOSAL TO STUDY THE IMPACT OF VITAMIN-A
SUPPLEMENTATION ON CHILDHOOD MORTALITY

The following minutes were taken at a meeting convened by BRAC. This meeting gathered representatives from the scientific and medical community and leading citizens to discuss a study on the relationship between Vitamin-A status and childhood mortality. Invitees were provided with a preliminary draft of the protocol for the proposed study.

Mr. F.H. Abed, Executive Director of BRAC, welcomed the participants. He described the BRAC programme in primary health care. Its child survival programme aims to reduce childhood mortality through delivery of immunization, oral rehydration therapy (ORT) and Vitamin-A capsules (VAC). Concerned with delivering cost-effective services, BRAC's Research and Evaluation Division has recently examined the impact on mortality of the ORT. It is now interested in doing the same for the Vitamin-A deficiency prevention programme.

Studies in Indonesia suggest that supplementing children with VAC can significantly reduce preschool mortality by more than 33 per cent below unsupplemented children. We don't know whether in Bangladesh improving Vitamin-A status can have the same impact. A positive finding will have major implications for the delivery of health services.

Evaluating the impact on mortality of Vitamin-A deficiency is also valuable for the Government as it spends a lot of resources on its VAC distribution programme. Mr. Abed hoped to gather the advice of the invitees regarding the importance of such a study for Bangladesh, and the technical and ethical issues which needed to be considered in its design.

The floor was then opened up for discussion. The following is a summary of these discussions, organised by general issue.

Summary of the preliminary proposal:

A brief description of the preliminary draft design was presented by Dr. AMR Chowdhury, BRAC. The important features noted were: The study population would be divided into two groups, one which received VAC, one which did not. The VAC would be distributed every six months. Any child found with severe ocular signs of Vitamin-A deficiency in either group would also be given a capsule. It was also noted that the study would be conducted in the context of the on-going Government VAC distribution programme.

Statement of the Problem:

The issue was raised about the focus of the study. The wording of the draft proposal suggested that the major question of interest was whether VAC per se was effective in reducing mortality. It was noted that the real issue was whether Vitamin-A status was related to childhood mortality. Capsules are just one way to improve Vitamin-A status. Food is the other major way. Improving preschooler consumption of Vitamin-A/b-Carotene rich foods is a long term solution to the Vitamin-A problem and is a priority for Bangladesh. One way to increase preschooler consumption of such foods is through nutrition education.

The question arose as to why study Vitamin-A alone when it is only one of several important nutrients lacking in the diet of poor people in Bangladesh. It was noted that the studies done in Indonesia by A. Sommer et al suggest that mortality could be reduced by at least 33% with an improvement in the population's Vitamin-A status. If we find that improving Vitamin-A status alone reduced preschool mortality in Bangladesh then we should emphasize Vitamin-A deficiency programmes to reduce mortality.

Research Design and Methodology:

Two major proposals were discussed. The first (A) is a proposal to investigate different approaches to improve the Vitamin-A status of preschoolers, and the effect of the approaches

on childhood mortality. The second (B) is a proposal to study the relationship between Vitamin-A status and mortality by providing VAC to the whole population. Both these alternatives were suggested because it was considered unethical to have a group in which Vitamin-A status was not improved. The details of each design are presented below:

- A. In this design the study population would be divided into two groups, each of which receives Vitamin-A in a different form. One group receives VAC, another is educated with the aim that preschooler consumption of Vitamin-A/b-Carotene - rich foods increases. The mortality in the two groups is then compared. The Vitamin-A status of the population receiving the capsules would be considered optimal and the target to be achieved through the nutrition education programme. It was noted that nutrition education is a long term approach. Therefore the programme should be operational for an extended period of time (about five years).
- B. In this design the study population serve as its own control. Baseline data on mortality is collected for a one to two year period. Then all participants are given a VAC and after a period of time (i.e., six months or one year) their mortality experience is compared to the baseline. It was noted that identifying the effect of VAC on mortality in this comparison is difficult because different factors that are unrelated to Vitamin-A status can influence the level of mortality at baseline and later.

Other study designs were also suggested. It was proposed that in one group the Government be encouraged to improve its distribution and in the other group BRAC distribute VAC to 100% of the children. The mortality of the two groups would be compared (i.e., one group with less than 100% coverage and one group with 100% coverage).

Other suggestions made related to the selection of the study areas. One suggestion was that the areas be selected as far apart as possible.

Specific details of the proposal were also discussed. Diarrhoea was not well defined. The analysis of Vitamin-A in serum should be done in Bangladesh since the equipment to do it is available.

BRAC was urged to consult with academic institutions and involve specialists when writing the proposal.

There was consensus that it was important for Bangladesh to know the impact on mortality of Vitamin-A supplementation programmes. However, the study must be ethical. A pure control group is not acceptable. The communities should be alerted about the study and, for particular procedures (i.e. drawing blood), informed consent should be obtained. It was also agreed that to move away from capsule distribution programmes more long term approaches to improving Vitamin-A status were necessary but needed to be tested. Testing both of the relationship between Vitamin-A status and childhood mortality as well as different programmatic approaches to eliminate Vitamin-A deficiency meets many of these ethical and technical concerns.

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