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ABSTRACTS OF EVALUATION REPORTS
OF
UNICEF-SUPPORTED
WATER SUPPLY AND ENVIRONMENTAL SANITATION PROGRAMMES

This document consists of 15 informative abstracts of Evaluation Reports of UNICEF-supported Water Supply and Environmental Sanitation programmes. It is an experimental document which has been developed to explore the feasibility of sharing the content of these reports in an abstract format. In addition to the standard elements of a social science abstract, these abstracts contain a critical review of each Evaluation Report.

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for Community W. ...

PROGRAMME DEVELOPMENT & PLANNING

DIVISION

UNICEF, NEW YORK

INFORMATION FOR ACTION SERIES

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ABSTRACTS OF EVALUATION REPORTS OF UNICEF-SUPPORTED
WATER SUPPLY AND ENVIRONMENTAL SANITATION PROGRAMMES

BACKGROUND:

This document is a result of the growing interest in Evaluations and Studies related to programmes in which UNICEF has been involved. An interest which has resulted in the annual publication of a document entitled "Inventory of UNICEF-Supported Studies and Evaluations" (1980, 1981, 1982, 1983) — herein referred to as the Inventory. This document has been a valuable reference tool, and provides general information about the subject matter, authorship, costs, design, etc...; of studies and evaluations supported by UNICEF on a country by country basis. However, its utility is limited because it is essentially a finding aid — helping the reader identify specific documents and directing him to the appropriate country office for further information. It does not provide substantive information about the contents of the individual reports.

In an effort to further exploit these valuable information sources, the Programme Development and Planning Division (PDPD) is in the process of developing a systematic method for sharing the actual content of these documents, particularly Evaluation Reports. This method will be discussed in greater detail below, but briefly it consists of producing abstracts of selected reports which can be electronically stored and printed on demand. This overcomes a difficult storage problem and enables the efficient distribution of specific abstracts as they are requested.

The Abstracts which are included in this document are part of a larger effort to systematically store evaluative information in the Technical Information Referral System (TIRS)—a system designed for the storage and retrieval of information about projects in which UNICEF has been involved. These are only a few of the Evaluation Reports which have been abstracted and stored in the Bibliographic File of the Prototype TIRS, which has been developed on a trial basis using the HQ Wang word-processing system.

ABSTRACT FORMAT:

The Abstracts on the following pages have been written using a variation of the standard social science abstract format (i.e. purpose, methodology, findings, conclusions). A number of elements have been added to meet UNICEF's special information needs. These include:

- . a brief description of the project, programme, or intervention which is the subject of the evaluation
- . a critical review of the evaluation report, identifying some of its strengths and weaknesses, and highlighting what, if any, lessons might be learned from the evaluation effort
- . a keyword field, including specific terms under which each abstract can be indexed and identified through an electronic search.

(iii)

In general, the abstracts are longer than conventional abstracts. They might be classified as informative abstracts, aiming to serve as a surrogate for the source document, rather than as indicative abstracts, which help the reader decide which source documents he/she might wish to read.

These abstracts were written using a carefully developed and tested code book and code sheets. These were designed to assure that the content of each entry was comparable. Finally, the completed code sheets were typed onto the word-processor using an input glossary to assure uniformity of format. This is extremely important when using the search utilities of the word-processor, since each field must be assigned a unique code to differentiate it from other parts of the text.

Although it would have been relatively simple to reformat each entry — replacing codes with words and stringing numbered phrases into outline form — this has been intentionally avoided to serve as a reminder to the reader of the link between the message and the medium through which it is transmitted. The prototype TIRS system which has been developed combines the advantages of a word-processor (i.e. text editing and reformatting) with the on-line search capabilities of a computer. Thus, with the touch of a couple of keys, certain parts of these abstracts can be reproduced or deleted at will. For example, a person using this system could specify whether he was interested in a simple bibliographic citation, a complete abstract, or an abstract plus the critical review (as has been selected for this document). Likewise, one could specify a particular subject area (i.e. Nutrition, Health, Education, etc...), country, language, or a range of publication dates; and select only those abstracts which meet these specifications. Another feature, which is still being developed, will permit documents to be identified using a keyword search — thereby increasing the specificity of the selection process. These features enable a document to be produced which is tailored to the specific information needs of the user.

The following is a brief description of the codes which are found on each abstract on the following pages:

RN: Record Number — serves as a unique identifier for each abstract in the bibliographic file

TI: Title — complete title and subtitles of the report

AU: Author/Author affiliation

SO: Sponsoring Organization — the organization or organizations which sponsored the evaluation effort

IM: Imprint information — date and place of publication

PG: Pagination — number of pages (excluding appendices), plus number of tables, figures, and/or appendices

TL: Text Language — the language in which the original text was written

- !DE: Description — brief description of the Subject of the Evaluation Report
- !PU: Purpose — a brief explanation of why the evaluation was undertaken and what its objectives were
- !ME: Methodology — a summary of the evaluation techniques used, sampling methodology, and types of measures or performance indicators used.
- !FI: Findings — a summary of the findings reported in the evaluation report.
- !RE: Recommendations — a summary of each of the specific recommendations made on the basis of the evaluation. This field also includes any general conclusions reached about the programme.
- Document Quality: — a set of two numerical grades reflecting the relative quality of the document in terms of Format and Content. These grades are assigned on a scale of 1 to 10.
- !CR: Critical Review — this is a subjective appraisal of the evaluation report which was written by the abstractor. It includes general statements about the readability, format, and degree of detail of the report; as well as the appropriateness of the methodology used and the conclusions drawn from the findings. In addition, it includes notes about specific lessons learned as a result of the evaluation experience which might be generalizable.
- KW: Keywords — this is a list of keywords, or indexing terms from a controlled vocabulary, which is used to describe the contents of the report. They can be searched selectively, or identified in a free text search.

SELECTION OF DOCUMENTS FOR ABSTRACTING:

The abstracts included in this document are based on a sample of Evaluation Reports related to Water Supply and Environmental Sanitation programmes which were available at UNICEF HQ in early 1983. The term evaluation is used very loosely in this selection, including a number of reports which the authors themselves did not consider true evaluations. These include an "interim report", an "interim progress/appraisal report", a collection of field observations, a situation analysis, and a "review". What they have in common, however, is that they each look back at all or part of a particular programme to assess its achievements/performance and make certain recommendations, based on this assessment, as to how its performance might be/have been improved. A number of reports are largely descriptive, while others are carefully designed studies which attempt to measure the degree to which a particular impact or outcome is attributable to a project's interventions (i.e. VIII, A Survey in Rural Bangladesh on Diarrhoeal Morbidity, Water Usage and related factors).

Since the methodology used to select this sample of documents was clearly ad hoc, it is impossible to determine how representative this sample of reports is of UNICEF's evaluative experience in this field. A quick review of studies and evaluations reported under Water Supply in the Inventory over the past 4 years, suggests that about 53 such reports have been conducted over this time interval (Although this is probably an underestimate, because certain country offices did not report on the studies funded by their offices.¹). The 15 reports abstracted for this document thus represent approximately 28 % of the evaluations reported, and no doubt a much smaller percentage of the actual number of evaluations conducted.

Although representativeness is a major problem, some of the characteristics of this sample are worth noting. These reports ranged in length from 8 to 346 pages, with about 53 % under 50 pages (These figures do not include appendices, which in some cases nearly doubled the length of reports.) The majority (57 %) were internal evaluations, since the author(s) were UNICEF or project personnel, rather than outside agencies or independent consultants. Most of the reports (87 %) dealt with the process and/or output of programmes, while only 33 % made any assessment of impact. The individual reports varied considerably in scope, some focussing on a single intervention in a limited geographic area (i.e. I, III, V, VI, XII, XIII, XIV and XV), while others considered a wide variety of water supply systems on a nationwide basis (i.e. IV, IX and XI). Only one report dealt solely with sanitation (i.e. I), while another focussed entirely on the training component of a water supply programme (i.e. XV). There was also considerable variation in the amount of time which went into conducting the evaluations and preparing the reports, this ranged from less than one month in the case of the "Report of the Interim Evaluation of Soak-Pit Project in Baldia, Karachi," to two years for the "Evaluation of Rural Water Supply Schemes in India". 75 % of these evaluations were completed in 6 months or less (although this information was only available for 8 of the 15 reports abstracted).

The methodologies employed in these evaluation efforts varied considerably, although most (67 %) relied entirely on informal methods and/or secondary data, including: 1) reviews of project documentation, 2) inspection tours/site visits to observe project functioning, 3) informal interviews with project staff and/or beneficiaries, and/or 4) the personal experiences of the author(s) who were involved with project implementation (see Table I for a breakdown of techniques noted). One third used more formal evaluation techniques, including surveys using questionnaires and/or formal interviews. Twenty-seven percent of these reports included bacteriological or chemical analysis of water quality.

¹Additional evidence suggesting that this is an underestimation, is that 67 % of the evaluations which were abstracted for inclusion in this document were never reported in the Inventory.

Table I: Breakdown of Evaluation Methodologies noted in this sample of Evaluation reports.¹

<u>Evaluation Methodology</u>	<u>Number</u>	<u>Percent of Total (N=15)</u>
1. Inspection tours/site visits	11	73 %
2. Review of project documentation	11	73 %
3. Personal experience of evaluator	3	20 %
4. Informal interviews	9	60 %
5. Surveys using questionnaires and/or formal interviews	5	33 %
6. Physical or bacteriological analyses of water quality	4	26 %

USER'S GUIDE:

This experimental document has been produced for multiple uses. It is hoped that it will prove to be useful in some of the following ways:

- . Individual abstracts may be useful as a reference for those interested in specific details about water supply programmes in particular countries, and who have not previously been able to obtain actual copies of the evaluation reports.
- . Field officers and programme staff interested in supporting evaluations or studies in the future might find some of the following aspects of these abstracts useful for planning purposes — to profit from past experience and avoid costly duplication of effort:
 - . the descriptions of the various methodologies used in earlier evaluations
 - . the critical reviews which identify some of the strengths and weaknesses of these reports
 - . the general content of the reports might be useful as a baseline indicator of the kinds of information past evaluation efforts have successfully provided — and the gaps which remain to be filled.

¹ In three of these reports, the actual methodology was not explicitly stated (i.e. VI, XIV, XV) but inferences were made from their content.

If a satisfactory system for the ongoing selection and abstracting of evaluation reports is established, this system may prove to be a valuable tool for conducting analyses of evaluation efforts along other programme lines, and an important referral source for the production of a wide variety of documents tailored to particular users' needs

The ultimate utility of these abstracts (and the TIRS system of which they are a part) is, of course, up to the readers to judge. This collection has been put together, in part, to feel out whether or not there will be a demand for similar information products in the future. Your comments are actively solicited, so that the abstracting process can be improved during this developmental stage.

1 PROTOTIRS SEARCH OUTPUT 1

RN: 8
TI: REPORT ON INTERIM EVALUATION OF SOAK-PIT PROJECT IN BALDIA, KARACHI
AU: Sheng, Y.K.
SO: UNICEF, Pakistan Jaycees, University of Karachi
IM: 1979, Dec., Karachi, Pakistan
PG: 8 pages, (photocopied), 1 appendix, 9 figures
TL: English

- !DE:! The Dutch Advisory Mission (DAM) developed this soak-pit type human waste disposal system in co-operation with the Water-and-Waste-Engineering-for-Developing-Countries Centre. After 5 experimental pits had been constructed, the project was handed over to UNICEF. Despite their lack of experience in the field of sanitation engineering, the implementing agencies (Pakistan Jaycees and the Social Work Dept. of the University of Karachi) have constructed about 40-50 soak-pits in a 2-month period. The soak-pits were designed to replace the less hygienic bucket latrines commonly used in the areas.
- !PU:! This interim evaluation was conducted to discuss the status of, and problems encountered by, the soak-pit project and to present recommendations for possible solutions.
- !ME:! The evaluation report was based on a site visit by the author (a UNICEF consultant) to Niazi Para and Muslim Mujahid Colony in Baldia Township, where the Social Work Dept. and the Pakistan Jaycees were carrying out the UNICEF assisted soak-pit project. Additional information was obtained during meetings with a delegation from the Social Work Dept. and Mr. Zahid Alavi (representing Pakistan Jaycees).
- !FI:! The report noted that the Jaycees had completed 20 pits and had 10 under construction at the time of the site visit, while the Social Work Dept. had completed 7 and had 18 under construction. Both organizations worked on a street by street basis, with the construction and completion of each pit taking about one week. Although it was too early to assess the impact of the conversion of the traditional bucket latrines into soak-pits, the general impression was that this innovation improved the sanitary conditions of the individual plots considerably. Financing arrangements were slightly different for the two organizations. The Jaycees approached a mohallah leader, who selected poor families in need of soak-pits. The Jaycees then financed the entire construction of the soak-pit, and the family was requested to finance and build its super-structure. The Social Work Dept. asked families to dig the pit themselves or pay the labour cost for the pit digging (Rs. 300-400). Subsequently, the Dept. provided the necessary material for the pit and paid the labour charges of the mason. Both approaches made it difficult to reach the poorest of the poor, who could not afford to pay for the digging of the pit, nor for the completion of the super-structure. The major problems identified during construction were that residents were often reluctant to demolish an existing bucket latrine super-structure and preferred to have the pit dug next to the latrine and connected by a pipe—this required precise guidelines for pit location. Other problems arose from the lack of experience of local masons in constructing the "tandoori top" (dome shaped top) of the pit, or from the slow pace of construction due to the irregular supply of materials—leaving some pits uncovered for weeks and creating hazards for children. Problems affecting utilization, which were noticed during the visit,

2 PROTOTIRS SEARCH OUTPUT 2

included that of financing, which made it difficult to complete the super-structure and caused it to remain unused, and improper flushing of the water sealed latrine.

!RE:! Three general and seven technical recommendations were made on the basis of this interim evaluation. The first three concerned the need for efforts to gain and maintain the confidence of residents, the need for implementing agencies to follow-up on the use of pits after they have been completed, and the need to find alternative financing to serve the poorest of the poor. The technical recommendations included the suggestion that site selection be made by the implementing agency after consultation with residents, that the digging of pits be carefully planned to take place immediately before the linings are constructed, that a core team of masons be trained to line soak-pits and build the tandoori tops, that regular visits to the soak-pit plots be initiated to assure proper utilization, that a survey of utilization be conducted after the first phase is completed, that a health educational component be included, and that meetings between implementing agencies be organized for improved co-operation and exchange of ideas.

!Document Quality: Format 07 Content 08!

!CR: This very brief report is quite well organized and well illustrated, but reproduction quality is so poor that it is difficult to read. The evaluation methodology is very informal, but probably appropriate, as this is basically an interim progress report and not an evaluation, per se. There is a lack of detail on UNICEF's input into the project and the complete cost of the project is unclear. Technical recommendations are reasonably specific, but the others are too general to be useful for project management.!

KW: URBAN, SANITATION, EVALUATION/MONITORING, MANPOWER TRAINING, APPROPRIATE TECHNOLOGY, COMMUNITY PARTICIPATION, UNICEF/NGO CO-OP (DAM, PAKISTAN JAYCEES), TRAINING OF MASONS, LATRINES, WASTE DISPOSAL

#8

3 PROTOTIRS SEARCH OUTPUT 3

RN: 17
TI: UNICEF-ASSISTED RURAL WATER SUPPLY PROJECT IN THE OUTLYING BARANGAYS OF SURIGAO CITY: Interim Progress/Appraisal Report
AU: Awal, A. and Maglipon, M.A./UNICEF Manila
SO: UNICEF
IM: 1982, Sept., Manila, Philippines
PG: 8 pages, (photocopied), 4 tables, 3 figures
TL: English

- !DE:! At the request of several mothers' clubs from a number of barangays in Surigao City (the Philippines), the City Health Officer (CHO) initiated efforts which resulted in the submission of a formal request by the Minister of Health for UNICEF assistance to improve water supply systems in 11 different locations. In each of these barangays, the sources used for water were located far from the villages—often high up in the mountains—thus making it difficult to fetch water. The projects which were selected for funding (on a priority basis) involved the construction of gravity flow systems—pipes carrying water from natural springs in the hills to public faucets in the villages. The total cost of the installations was US\$ 210,000, of which UNICEF provided 70%. The community contributed about 18% (cash and man-days of labour), with the Government and several private agencies providing the remainder.
- !PU:! The general objective of this progress report/assessment was to determine the operational status of the projects and to appraise the technical, economic, social and administrative implications of self-help in the communities. The specific objective was to try to identify the positive factors which helped in the implementation of the projects and the problems faced during implementation and operation and maintenance of the system, for possible future application.
- !ME:! This evaluation was based on a project inspection tour of the completed projects made by the authors, the incumbent CHO and his predecessor—who had initiated the project request. This visit took place over a 3-day period, with an average of one hour spent at each site. Specific aspects of the projects which were assessed were essentially related to process and output. These included: the projects' operational status, population served, source of water/adequacy, degree of community participation, project revision/expansion, cost-effectiveness, maintenance and operation, water quality and complementary development activities undertaken.
- !FI:! The findings of this assessment were generally favorable. 13 of the 14 projects were found to be operational, supplying water to an estimated population of 16,000. Several problems were identified, however, including an inadequate number of faucets, inadequate water flow at certain sites, and certain sanitation problems resulting from improper drainage. It was also noted that there were no complementary development activities initiated with the water supply project (i.e., health education, sanitation activities) and that there was, with one exception, no organized institution to oversee the projects' routine operation and maintenance. The positive factors identified during the assessment included: the effective role of community participation in project planning and implementation; effective co-operation between the Government, UNICEF, private agencies and communities; a very cost-effective project implementation strategy (i.e., US\$ 64 per household); adequate technological quality in spite of the use of unskilled/semi-skilled voluntary labour; and the fact that the project was able to surpass its original goal of

4 PROTOTIRS SEARCH OUTPUT 4

providing support to 11 water systems by ultimately supporting 14 and delivering surplus pipes and fittings to an additional 8 barangays. Factors which contributed to the project's success were: the high degree of motivation on the part of the community (due to their perception of water supply as a priority "felt need") and the existence of strong leadership.

!RE:! Seven general conclusions/recommendations were made on the basis of this assessment. Several recommendations were related to additional inputs to permit the project to operate more smoothly (more faucets, further training for the City Sanitary Engineer). Immediate technical problems were singled out for correction at one site (reconnection of a transmission main and improvement of a spring box inlet). It was suggested that each community should organize a Rural Water and Sanitation Association to make the system self-reliant with respect to proper operation and maintenance, and that an impact assessment should be conducted using routinely collected data from the City Health Office. It was concluded that the project was a fine example of co-operation among various groups (Government, community, UNICEF and NGOs) in the planning and implementation processes. The importance of strong leadership was underlined, and it was noted that such projects could not be duplicated without it.

!Document Quality: Format 09 Content 09!

!CR: This report deserves high marks for readability, brevity and detail. The maps and summary tables which are annexed to the text are very useful. The methodology used for this evaluation seems generally appropriate—but there was a tendency to focus on the technical aspects of the project and only pay lip service to the projects' health and social aspects. There was also no assessment of how the water was being used. The report's recommendations are somewhat general and could have been stated in more operational terms. Some recommendations appear in the discussion of the evaluation findings and are not brought up in the final recommendations at the end of the report. This makes them easy to overlook. An element of this project which was specifically lacking, was the integration of complementary development activities (i.e., improved sanitation, health education). However, no recommendations were made to correct this situation. In terms of cost-effectiveness and community participation, this was a model project which deserves special attention (i.e., follow-up and documentation for TCDC purposes).!

KW: GRAVITY-FLOW WATER SYSTEM, COMMUNITY PARTICIPATION, COST-EFFECTIVENESS, SELF-HELP, MOTHERS' CLUBS, EVALUATION/MONITORING, RURAL, UNICEF/NGO CO-OP, TCDC, COSTS, COST ANALYSIS, SPRING-FED, PIPED WATER SUPPLY, PUBLIC STAND POSTS, MAINTENANCE, PROJECT PLANNING/MANAGEMENT SUPPORT, SELF-HELP, PERSONNEL

17#

5 PROTOTIRS SEARCH OUTPUT 5

RN: 18
TI: DEEP WELL HAND-PUMP PROGRAMME EVALUATION REPORT (DRAFT)
AU:
SO: UNICEF
IM: 1979, Dec. Lucknow, India
PG: 57 pages, (carbon copy), 7 tables, 17 figures
TL: English

- !DE:! Inadequate resources, combined with rapid population growth, have contributed to a very serious rural water supply problem in India. This project aimed at providing problem villages (with rocky soil and subject to drought), in selected districts, with deep well hand-pumps at the rate of one installation per 250-300 population. Wells were drilled by a private contractor at no cost to the local population. The objectives of the project were to bring about changes in drinking water habits and improve health status through the constant supply of safe drinking water. UNICEF was responsible for the technical and supply aspects of the project, while the State Water Boards were responsible for site selection, maintenance, personnel recruitment and warehousing.
- !PU:! This evaluation was part of a Country Programming Exercise carried out with a view to critically examine the situation of UNICEF-assisted programmes. Its overall objectives were to assess the following aspects of the Rural Water Supply Programme: its range and variation, progress achieved in implementation, management problems, innovative features and impact on beneficiaries.
- !ME:! The evaluation report does not identify the principal investigator(s) or author(s) of the report, but it is assumed that it was an internal evaluation conducted by UNICEF staff. Data were collected at 2 levels: from existing documentation collected at the state level and through direct observation and direct inquiry at the local level during visits to villages by the evaluator(s). The study was restricted to 2 states: Bihar and Uttar Pradesh (U.P.), where the water programme was felt to be "important." A total of 28 villages, where the UNICEF-supported programme is in operation, were visited. No information is presented in how these villages were selected, but it was suggested that the same type of investigation should be conducted in all other villages as well.
- !FI:! The findings of this evaluation were mostly positive. Hand-pumps were found to be functioning well, in spite of very heavy usage (about 20 hrs. per day), and they had been installed according to schedule. Problems identified during implementation related to staffing, inadequate co-ordination between agencies and site selection. Government officials and villagers appeared to be convinced the hand-pumps were a viable innovation, and it was noted that they were being used without discrimination on the basis of caste or religion. It was observed that there was little liaison between water supply and environmental sanitation, and the health needs of the people. Sanitary conditions were generally unsatisfactory and no health education programme was actually conducted. Statistics obtained from the Chief Medical Officer suggested that there had been a decline in water-borne disease morbidity in the areas where UNICEF hand-pumps were working - suggesting a positive health

6 PROTOTIRS SEARCH OUTPUT 6

impact. A similar trend was reported for child malnutrition which was indirectly correlated with improvements in water supply. However, it was noted that few villagers understood the relationship between polluted water and disease.

!RE:! Ten distinct recommendations were made on the basis of this evaluation. The first two were concerned with the integration of educational and sanitation components into the programme. Three suggestions were made with respect to the programme's implementation strategy: that an area coverage approach be considered for site selection, that a systematic monitoring and reporting system be developed, and that the programme develop targets to guide the programme's implementation. Several recommendations related to elements which UNICEF should promote through its advocacy role: These included the appointment of "action committees" to guide the programme, the establishment of a village level maintenance system, and a focus on explaining the relevance of the water supply programme to the well-being of mothers and children. It was also suggested that UNICEF should take a greater initiative in project proposal and work-plan development. In order to measure up to the increased advocacy role proposed above, and to permit increased UNICEF involvement in project planning, it was recommended that the UNICEF Water Section in New Delhi be strengthened.

!Document Quality: Format 07 Content 06!

!CR: This lengthy evaluation went far beyond its stated purpose - a fact that actually detracts from its overall quality and utility. A wide array of data was presented on socio-economic, demographic, epidemiologic, and hydrogeologic conditions in the areas served by the programme, but much of it is irrelevant and too detailed (i.e. precise location of the project area in degrees longitude and latitude). One has the impression that this was intended more as a situation analysis of general conditions in the programme areas than as an evaluation of a specific water supply project. The description of the study area and its people is somewhat culturally insensitive and the conclusions drawn about the project's health impact are not sufficiently qualified. On the whole the document is well organized, with a table of contents and appendices, but the findings of the evaluation are presented at different points on the text, under different headings - making the report difficult to read. Some of the stated objectives of the report were never fully achieved (i.e. assessment of the project's range and variation). For all of the report's weak points, however, the recommendations listed at the end appeared to be specific and realistic.!

KW: RURAL, EVALUATION/MONITORING, APPROPRIATE TECHNOLOGY, PROJECT PLANNING/MANAGEMENT SUPPORT, HEALTH IMPACT, HAND-PUMPS, DEEP WELL DRILLING RIGS, WATER USE, ADVOCACY/PROMOTION, GROUNDWATER, DISEASE MORBIDITY, SOCIOLOGICAL ASPECTS, SITE SELECTION

18#

7 PROTOTIRS SEARCH OUTPUT 7

RN: 19
 TI: DRINKING WATER TO RURAL AREAS IN BANGLADESH: AN EVALUATION OF THE RURAL
 TUBE-WELL WATER SUPPLY PROJECT
 AU: Johst, P; Kramer, G. & Storguard, B. / DANIDA
 SO: DANIDA, UNICEF and the Bangladesh Dept. of Public Health Engineering
 IM: 1979, Oct., Denmark
 PG: 75 pages, (photocopied), 11 tables, 2 figures
 TL: English

!DE:! The first public tube-well water supply programme in Bangladesh began about 50 years ago. By 1972, nearly 185,000 tube-wells had been sunk, but a number of problems (i.e. misuse of funds, inattention to site selection criteria, political disruption caused by the 1971 war of liberation, use of substandard pumps and pipes) were inhibiting use of existing wells and affecting ongoing project expansion. In 1972 UNICEF undertook to sponsor the repair and construction of rural water supplies in co-operation with the Dept. of Public Health Engineering (DPHE), the Danish Assistance organization (DANIDA) and WHO. The total Danish contribution from 1972-76 amounted to 30.7 million D. kr. No information is provided on UNICEF's financial contribution to this project.

!PU:! This evaluation was conducted by DANIDA to assess the achievements of the public tube-well water programme in relation to its stated objectives. While many reports and surveys had been done about various aspects of the programme in the past, it was the hope of the Evaluation Mission that "fresh eyes" looking from outside, and looking at all aspects of the programme simultaneously, could result in information which could be useful for planning and decision-making in the future. It was also hoped that the evaluation would throw some light on the complexity of achieving improved living conditions and better health through a rural water supply programme.

!ME:! A 3-member Danish evaluation team - comprised of an engineer, an economist and a rural sociologist - conducted this evaluation during a 3-week visit to Bangladesh. It was carried out in close collaboration with the Dept. of Public Health Engineering and UNICEF. In addition to direct observation of project activities in several areas, the Danish mission gathered information about the water supply programme through discussions with 33 govt. and project officials as well as through referral to 23 papers and reports related to the water supply programme.

!FI:! The findings of this evaluation covered a wide range of topics related to the water supply project. As for the technical aspects of the project, they were judged to be generally satisfactory (i.e. choice of shallow tube-wells and pump type #6, methods of procurement and manufacturing, ease of maintenance). site selection criteria were found to be relatively objective and reasonably well followed - resulting in an increasingly equitable distribution of tube-wells between districts. Although maintenance was technically simple, several problems were identified which made it less than satisfactory (i.e. low motivation on the part of community, lack of spare parts). Water use was relatively unchanged by installation of hand pumps - this water being used mainly for drinking and to some extent for cooking. A number of reasons were suggested for this problem (i.e. cultural restrictions on women observing purdha, lack of containers to store additional quantities of water, lack of awareness about the relationship between contaminated water and disease). Problems with water quality were also identified in certain areas (i.e., high

8 PROTOTIRS SEARCH OUTPUT 8

iron & chloride content, contamination during construction, maintenance and use). Community participation was mobilized for this programme, but it was limited to economic contributions. No significant linkage was made with Health Education, and the real suppliers of water (the women) were excluded from participation. It was not possible to demonstrate that the programme had any impact in the health of the people — a problem which the authors attributed to the fact that there is no simple relationship between improved water supply and health.

!RE:! Seven sets of recommendations were made based on the findings of this evaluation mission. The first three recommendations dealt with the strategy for programme expansion (i.e. give priority to difficult areas and deep tube-well areas, improve maintenance of existing pumps, consider population growth in setting targets for construction). The fourth recommendation concerned the maintenance of pumps (costs should be borne by the beneficiaries, alternative financing should be explored, the proposed creation of new posts of tubewell attendants should be reconsidered as they are unnecessary, use of DPHE mechanics to train caretakers rather than repairing pumps themselves). The fifth recommendation included ways to increase utilization of tube-well water (i.e. health education, establishment of a system for storage in improved containers, installation of protected washing areas near the wells). Recommendation six suggested that proposals for increasing coverage beyond the level of 1 pump to 160 consumers should be carefully considered on the basis of cost-benefit analysis before such expansion should take place. Finally, several minor technical design modifications were suggested to minimize the wear and tear on the expensive pump parts.

!Document Quality: Format 08 Content 09!

!CR: This lengthy report is packed with details about the water supply programme. Much of the information is descriptive, but there is enough analysis to justify calling the document an evaluation. The report is well organized, with a table of contents and summaries of the findings and recommendations. Since the report considers this project from virtually every angle (i.e. technical, administrative, financial, historical, socio-cultural, etc), it is a useful reference document. Given the vast amount of documentation already produced in conjunction with this project, however, it is possible that this investment of time and money might have been better spent on another project.!

KW: RURAL, EVALUATION/MONITORING, LOCAL PRODUCTION, UNICEF/UN AGENCY CO-OP (WHO), TUBE-WELLS, HAND-PUMPS, MAINTENANCE, COMMUNITY PARTICIPATION, GROUNDWATER, UNICEF/NGO CO-OP (DANIDA), SHALLOW WELLS, DEEP WELLS, WATER QUALITY, WATER USE, SITE SELECTION, PROCUREMENT, TRAINING OF PUMP CARETAKERS, HEALTH EDUCATION

19#

9 PROTOTIRS SEARCH OUTPUT 9

RN: 20
 TI: EVALUATION OF UNEP PROJECT EP/1107-78-02 (1389) INTEGRATED WATER SUPPLY DEMONSTRATION PROJECT IN SWAZILAND
 AU: Bovée, C.W. / Short-term consultant
 SO: UNICEF, Swaziland Government, UNEP
 IM: 1982 May, Maputo, Mozambique
 PG: 23 pages, (photocopied), 3 tables, 2 figures
 TL: English

!DE: The subject of this evaluation evolved out of a precursor project which began in 1976 in response to a UNEP request for an integrated approach to schistosomiasis control, incorporating, among other measures, the provision of safe water supply and reduction of contamination of surface waters. The project was of a demonstration-type, involving the local community and encouraging the use of local materials and expertise. UNICEF became a co-signatory in late 1978, and the Government of Swaziland and WHO were also involved. Project activities included: piped water service for domestic consumption, laundry and bathing; and provision of pit-latrines; coupled with support elements including health education, community participation, information services, training of technicians and baseline data collection. The total project cost through May 1982 was \$1,354,500 (UNICEF \$351,500, UNEP \$525,500, Government \$477,500)

!PU: The purpose of the evaluation was to determine: 1) whether the strategy formulated by UNEP in this project would, in fact, promote integrated rural water supply and sanitation for the rural population; and 2) the manner and success/failure of the implementation of the project by UNEP and UNICEF, and 3) the lessons learned therefrom.

!ME: The evaluation was designed along the lines of a systems theory approach - insofar as the whole project was examined as interactions of its components. It was carried out through a desk study of basic project documents, progress reports and correspondence in files of the principal agencies involved. This was supplemented by discussions with government and project personnel at the country, intermediate and regional level. A 1 1/2 week field appraisal of the project was also made in the company of executing agency personnel charged with direct project support and supervision. Round-up meetings were held on several occasions to secure guidance and co-ordination of participating agencies, as well as to seek consensus on future courses of action.

!FI: The overall project was rated "fair at best". Project output consisted of 5 distinct water supply schemes at an average per capita cost of \$110 (judged not to be cost effective by IDWSSD standards). Approximately 560 homestead pit privies, 20 demonstration units and 8 multiple seat institutional latrines, were also completed. Per unit cost of homestead privies was \$25, of which \$15 was provided by the project and the remainder by beneficiaries (this component was judged to be remarkably successful although coverage was low). Training and health education activities were also conducted. The project's impact could not be assessed due to the short period of time that the project's components had been operational. The project suffered from several delays and cost over-runs of about 50% of initial costs (i.e. \$1,354,500 vs. \$900,000 originally budgeted). Positive aspects of the project were: community participation, site selection, the epidemiological survey which was conducted, inclusion of other institutions in project area (i.e. schools). Weaknesses included: poor system design (the low cost technology originally

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adopted — spring-source, gravity-fed systems — was not practical and had to be substituted with a more conventional, expensive scheme requiring good operation and maintenance), project was not cost-effective nor easily replicable, poor co-ordination among implementing agencies. Several of the project's stated objectives (i.e. contributing to higher economic productivity and facilitating proper management of water resources) were actually well beyond the scope of the project.

!RE:! Four specific recommendations were made on the basis of this evaluation report. First, ~~that the project's water schemes~~ should be formally handed over to the Swailand Government in view of the project's impending termination date. Second, that the government should decide, after 1 year of performance testing, whether or not the demonstration aspects of the project should be implemented on a wider scale. Third, that UNEP should consider a follow-through project extension to assure satisfactory operation and maintenance and assess the project's impact. Finally, that UNEP disengage from participation in and financing of country level water supply and sanitation projects in favor of assisting with the development of guidelines already developed for the global IDWSSD approach to planning and design for this sector.

!Document Quality: Format 09 Content 08!

!CR: This evaluation report is well formatted with a table of contents and rather extensive supportive documentation included in appendices. This keeps the actual report to a reasonable length. It is very readable and summarizes the important background information on the project, thus making the report useful to individuals without any prior knowledge of the project. Methodology employed was appropriate, although 1 1/2 weeks doesn't seem adequate for an "extensive" field appraisal. It is somewhat difficult to aggregate all of the report's findings, as they are reported in several different sections of the report. The recommendations made are realistic, but perhaps too few, based on the nature of the findings. Several important lessons can be drawn out of this evaluation report: 1) UN agencies should refrain from implementing and designing water projects independent of IDWSSD guidelines, 2) careful planning and baseline surveys (including hydrogeological studies) are needed to make the best match of technology with water resources and thus avoid unanticipated cost overruns.!

KW: RURAL, EVALUATION/MONITORING, NON-FORMAL EDUCATION, MANPOWER TRAINING, APPROPRIATE TECHNOLOGY, INFRASTRUCTURE DEVELOPMENT, COMMUNICATION (PSC), PROJECT PLANNING/MANAGEMENT SUPPORT, COMMUNITY PARTICIPATION, INTEGRATED/MULTI-DISCIPLINARY, UNICEF/UN AGENCY CO-OP (UNEP, WHO), SCHISTOSOMIASIS CONTROL, PIPED WATER SUPPLY, LATRINES, HEALTH EDUCATION, TRAINING OF TECHNICIANS, TRAINING OF HEALTH PERSONNEL, COST EFFECTIVENESS, LESSONS LEARNED, GROUNDWATER, SPRING-FED, COSTS, PILOT PROJECT

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11 PROTOTIRS SEARCH OUTPUT 11

RN: 21
 TI: IMO STATE RURAL DRINKING WATER AND SANITATION PROJECT: AN INTERIM REPORT
 AU: Pincetich, John/Project Co-ordinator, consultant
 SO: UNICEF, Nigerian Government
 IM: 1983, January, Imo State, Nigeria
 PG: 52 pages, (photocopied), 20 appendices
 TL: English

- !DE:! Planning for the Rural Drinking Water Supply and Sanitation Pilot Project began in 1980, and involved co-operation between UNICEF, seven different Nigerian Government Ministries, and, later, with the Ross Institute of Tropical Hygiene. The project was based on the "self-help model", with an underlying objective of replicability. It consisted of 5 overlapping implementation phases: data gathering, community mobilization, sanitation training, drilling and pump installation. The project was somewhat of a departure from UNICEF's traditional programming philosophy, since UNICEF played the principal role in project initiation and management. It was characterized by an integrated, multi-sectoral approach; extensive community participation; an educational focus and the use of low-cost technology (bore-holes with India Mark II handpumps and vented improved latrines). UNICEF expenditure in 1982 (the first year of field operations) was \$867,800, Imo State Government contributed \$419,600 and the Federal Government contributed \$73,000.
- !PU:! This interim report was an attempt, 2 years into a 10 year project, to sum up how the Imo State project had gotten to where it was, after 10 months of operations in the field. Its principal focus was on the operational nature of the project, in the hope that this might provide some useful information for succeeding projects. The report attempted to answer 2 simply stated questions: Has the "model" worked well so far in Imo State? And if so, why?
- !ME:! In the methodological sense, this evaluation effort is somewhat unusual, since it's author was himself the project co-ordinator. Although the methodology used is not explicit, it is assumed that the report was compiled on the basis of a wide range of project documents (samples of which are appended to the text) as well as on the author's personal experience with the project. The approach and substance of what was covered in the report were reviewed with UNICEF staff. While the bulk of the report is descriptive, the inevitable judgements and opinions are stated to be those of the author. The report's timing was largely dictated by pressure from UNICEF to begin similar projects in other states, and accordingly seek some direction from operations underway in Imo State. A separate evaluation unit was engaged in measuring the project's impact, so this aspect of the project was not considered in the interim report.
- !FI:! The general findings of this report led to the conclusion that the project's operational "model" was functioning well. In the 10 months since the field operations began, 45,000 people benefitted from daily supplies of clean water from 80 hand-pumps, and from the ongoing efforts of 75 especially trained village based workers (VBWs) who were engaged in a monitored programme of water use and sanitation education. In addition they were building their own latrines based on demonstration models. Training programmes for VBWs and village carpenters/masons were also conducted. An evaluation component of the project had done extensive enumeration of the population, and developed and refined methods and tools for measuring water use, quality, etc... A second

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phase of the project, in another area had succeeded in drilling 16 test bore-holes, preliminary to a programme expected to install 90 handpumps in 1983. Intangible factors contributing to the operational success of the project included: the flexibility made possible by UNICEF retaining the operational reins, the consequent opportunity to use non-UNICEF personnel as needed, the sense of true commitment that arose from the participatory theme, and the aura of hope vested in the UNICEF name. The project management process involved 4 management foci: 1) Administration; 2) Community Mobilization, Training and Pit Latrine; 3) Technical; and 4) Evaluation. Each of these elements and the communication process itself were discussed in detail. Efforts to estimate the project's cost effectiveness were judged to be premature due to the capital - and personnel-intensive nature of the start-up period, yet approximate costs of \$14,162 per bore-hole in 1982 was suggested (this excluded UNICEF's investment in capital equipment). It was estimated that per bore-hole costs would decline to about \$6,789 in 1983, or \$14 per capita. These estimates were judged to be very reasonable by Nigerian standards.

!RE:! The author recommended a series of 3 steps to be followed when beginning operations in other Nigerian states. These included: 1) An operational appraisal should be conducted by a person, hired by UNICEF, with strong managerial/operational credentials. This should explore hydrogeology, water and sanitation needs, village patterns, manpower resources, vehicle needs, managerial structure and evaluation needs. This information would form the basis for a loose operational outline for the project. 2) A written agreement should be obtained from the government concerning the following factors: the basic administrative relationships, personnel/wage/allowance policies, scope of the project, desired bore-hole ratio, schedule of reimbursement, manner of disengagement. 3) A staff nucleus should be set up with the following capabilities a) project director/consultant, b) Health educator/Trainer, and c) hydrogeologist. Other specific recommendations included three major points. That PSC activities should grow out of the project's cultural realities, should be staffed by a person of general media experience, with visual aid, photographic and other support drawn from local practitioners of these arts. That anthropological in-depth surveys should be done sparingly, if at all, and conducted well in advance, as the investigation pattern is too static for the dynamics of village level mobilization. That site selection should, insofar as possible, reflect the feelings of the village people and should be made in a managerial manner which can accommodate as many points of view as are feasible (Ministry, hydrogeologists, community, etc.).

!Document Quality: Format 08 Content 09!

!CR: This report is very readable, but would be difficult to skim. It is written in a style which is, admittedly, idiomatic American - more metaphorical and stream-of-consciousness than the average administrative report. This does pose some problems for the reader, however, as findings and recommendations are interspersed throughout the text, and it would take considerable effort to draw them together when developing administrative actions from them. The author is quite frank about friction between and the Ministry (illustrated by inability to agree upon the organizational chart). The recommendations proposed are specific, but somewhat in contradiction with the findings (i.e. the success of the project was attributed, in part, to UNICEF's flexibility, yet it is recommended that UNICEF seek prior agreement in writing on a wide range of issues before beginning a project - a suggestion certain to limit

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this flexibility). The discussion of alternative approaches to encourage latrine construction was informative — demonstration did not work, so leverage was tried (i.e. removing handles from handpumps until progress was made in building latrines). This had to be abandoned, however, because it put UNICEF in the position of not following through on its promise of delivering water to the people. This project was unusual in its commitment to implementing a truly integrated water, sanitation and health education programme. Each of these elements was accorded high priority. Its concern for building up a management capability, for phased implementation, and for conducting a carefully planned impact evaluation; should ensure the project's continuing success.!

KW: RURAL, EVALUATION/MONITORING, ADVOCACY/PROMOTION, NON-FORMAL EDUCATION, MANPOWER TRAINING, APPROPRIATE TECHNOLOGY, TRANSPORT, INFRASTRUCTURE DEVELOPMENT, COMMUNICATION (PSC), PROJECT PLANNING/MANAGEMENT SUPPORT, COMMUNITY PARTICIPATION, INTEGRATED/MULTI-DISCIPLINARY, MULTI-SECTORAL, UNICEF/NGO CO-OP (ROSS INSTITUTE), BORE-HOLES, HAND-PUMPS, LATRINES, HEALTH EDUCATION, WELL DRILLING, COST-EFFECTIVENESS, SANITATION, PILOT PROJECT

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RN: 22
 TI: EVALUATION OF THE UNICEF-SUPPORTED DRINKING WATER PROJECT IN SOUTH KORDOFAN PROVINCE, PART II: SURFACE WATER PROJECTS
 AU: A/Rahman, Dr. B.; El Hassan, Dr. B.; et al/Institute for Environmental Studies (IES)
 SO: UNICEF, IES
 IM: 1983, Jan., Khartoum, Sudan
 PG: 121 pages, (mimeographed), 18 tables, 5 figures, 6 annexes
 TL: English

!DE: UNICEF initiated support for this project in 1978. It was originally intended to span a 6-year time period (until 1983) and its activities were to focus on 3 specific objectives: 1) water purification (treatment plants) 2) Hafir (surface water catchments/dams) rectification (including desilting; inlet/outlet, embankment, trench, filter-bed and spill-way construction and repair) and 3) Bore-hole drilling/hand-pump installation. A second plan of operations was submitted to the UNICEF Board in 1981 to intensify the programme's activities and extend them through 1985. The final goal is to rectify 140 hafirs, install 16 water treatment plants and drill 900 bore-holes and equip them with hand-pumps. UNICEF co-operated with the National Administration for Water (NAW) and Regional Government in this US\$ 10.78 million project (\$3.8 million from UNICEF General Resources, the balance from noted funds). About \$7 million of this was to be used for the hafirs and treatment plants.

!PU: The purpose of this evaluation was to gather a wide variety of data - largely descriptive - about various aspects of the project, and to make some assessment of the project's impact. As stated in the terms of reference the evaluation was to include the following: a survey of hafirs and treatment plants and their health impact; environmental impact and social aspects; a description of project management, logistics support and maintenance, and implementation. This evaluation report did not focus on ground-water supplies, which were the subject of an earlier evaluation in May 1982 (see abstract for part I: Ground-water projects).

!ME: This evaluation was conducted by a study group of 7 individuals (a geographer, a sanitary engineer, an epidemiologist, an economist, a civil engineer, a social scientist and an environmental studies specialist), all from the Sudanese Institute for Environmental Studies (IES). The team conducted field-work in the project area for a two-week period in November 1982 and based its findings on a review of existing project documents, discussion with project staff, site observations, and questionnaires directed to rural villagers. A stratified random sample was selected to cover the three types of hafirs in the project area (i.e. non-rectified, rectified, and rectified with treatment plants).

!FI: This evaluation found that the project's performance was very modest during the first two years - due to the need for building up infrastructure and determining the organizational set-up. By 1982, 20 hafirs had been rectified and 3 treatment plants installed - this was well short of the project's original goals. The report identified a wide variety of problems associated with the project's implementation. These included problems with silting of hafirs and non-functioning of treatment plants (2 out of 3 were not operational). The evaluation demonstrated a positive health impact (i.e. lower prevalence of diarrhoeal disease and "water washable disease" in

rectified hafir areas), although not enough information is provided to test for statistical significance. This positive impact was noted in spite of the observations that few community health workers (CHWs) were supervising water and resources against contamination, and that hafir water was found to be contaminated in all cases. It was also noted that no activities were being undertaken to improve sanitation in communities making use of the rectified hafirs and that the vast majority of the rural population preferred ground-water to hafir water anyway. The social impact of the project was described as minimal, as it was believed that the rectification of hafirs would not lead to any increase in the quantity of water consumed — due to the fact that hafirs were located at considerable distances from villages and no distribution system was foreseen. It was, however, suggested that the rectification of hafirs encouraged settlement and construction (and purchase of radios and furniture!!). The project's environmental impact was both positive and negative. On the positive side were factors such as: increased agricultural production due to irrigation, an expected decrease in water-borne and water-related disease, increased land availability for pasture, improved quantity and quality of livestock. Negative impact included: deforestation and fire hazards. Project management was essentially in the hands of UNICEF ex-patriots until Jan. 1982, when it was officially turned over to the Government. The evaluation team noted the need for devoting more time and funds for training of personnel to assure that this transition could be successful. Certain serious personnel problems (i.e. discontent over UNICEF incentive policies) were also identified.

!RE!! The evaluation team drafted a set of recommendations for each section of the report (a total of over 50 recommendations). Fifteen recommendations were made to improve hafirs and make better use of water resources. Most concerned technical improvements in hafir design or the development of a better system for maintenance and record keeping. One recommended that field studies be conducted of existing traditional water supplies, with the goal of initiating definite proposals for improving these alternate water sources. Seven recommendations were proposed to improve the project's health impact. Three of these concerned the introduction of complementary activities, including health education, sanitation education and provision of ORS to combat diarrhoeal diseases. Two proposed technical improvements to protect the hafirs from animal and human contamination. One recommendation focussed on the need for community participation and the last concerned administrative measures required to get treatment plants functioning again. Five recommendations were proposed to improve the project's social and environmental impact. Two of these concerned site selection and the creation of an integrated team to supervise the selection process. The remainder of these indirectly affected the rectification process by reducing siltation. A great number of mostly technical recommendation were made for improving each of the treatment plants. In addition, five general recommendations were made to improve this aspect of the water project. The first proposed that only slow sand filters and gravity pressure filters be used for treatment plants because they were simpler and less costly. Where treatment plants were not provided, the installation of a properly designed hafir outlet well with sand and gravel for filtration and a hand pump for access, was recommended. Separate facilities were recommended for animal and domestic water supply, as were properly maintained fences for all hafirs. In the case of twin hafirs, it was recommended that the primary one should be pumped into the secondary to discourage use of the unhealthy water in the primary hafir. Six recommendations were made to improve the project's management. These included

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allocating greater responsibility to the Regional Government, the development of a systematic approach to hafir design on the part of ex-patriot staff, the filling of vacant posts, the introduction of an incentive system and efficient training programme, and improvement of the recording and filing system. Finally 10 recommendations were made with respect to logistics (mostly concerned with the equipment and operation of the laboratory and with the acquisition and maintenance of vehicles).

!Document Quality: Format 08 Content 07!

!CR: This evaluation report is quite lengthy, but well organized with a summary of findings, a table of contents and some of the material presented in annexes (including a very useful proposal for a health education component). It is apparent that each section was done by different individuals, as the quality and style of reporting varies from chapter to chapter. In general, the report is successful in identifying problems (technical and administrative mostly) with the project and in proposing reasonable recommendations to solve them. The sections on the project's impact are very weak, however — particularly that on the health impact. Rather controversial conclusions are based on insufficient data, and the study design and methodology are poor. Recommendations are numerous and generally realistic, as noted above, but there is considerable repetition in the various sections of the report. They might have been re-grouped and summarized at the end of the report. This report demonstrates the waste of time and energy that often goes into trying to assess the impact of a project which has only just begun to operate — and is not even doing that effectively. Part of this problem stems from the terms of reference for the evaluation effort, which demands an unreasonable amount of information and thus assures a patchwork job. Although the people's preference for ground-water is mentioned in the report's findings and serious problems are identified with surface water quality, the authors stop short of recommending that the surface water programme be discontinued in favor of alternative approaches (i.e. ground-water). This would appear to be a logical conclusion to draw from the information presented.!

KW: RURAL, EVALUATION/MONITORING, MANPOWER TRAINING, APPROPRIATE TECHNOLOGY, TRANSPORT, INFRASTRUCTURE DEVELOPMENT, PROJECT PLANNING/MANAGEMENT SUPPORT, SURFACE WATER, WATER TREATMENT, HAFIR RECTIFICATION, HEALTH IMPACT, SOCIAL IMPACT, ENVIRONMENTAL IMPACT, RESERVOIRS, LOGISTICS, FILTRATION, CHEMICAL TREATMENT, SURVEY, DIARRHOEA, DISEASE MORBIDITY

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17 PROTOTIRS SEARCH OUTPUT 17

RN: 23
 TI: A SURVEY IN RURAL BANGLADESH ON DIARRHOEAL MORBIDITY, WATER USAGE AND RELATED FACTORS: FIRST REPORT
 AU: Skoda, J.; Mendis, J.B.; Chia, M./UNICEF, WHO
 SO: UNICEF, WHO, Government of Bangladesh
 IM: 1977, June, Dacca, Bangladesh
 PG: 26 pages, (photocopied), 15 tables, 4 figures, 3 annexes
 TL: English

- !DE:! As far back as 1948, schemes were drawn up to supply the rural population with tube-well water. Following the cyclone of 1970, UNICEF accepted the rural water part of the multilateral reconstruction plan. The first WHO/UNICEF-assisted rural water supply project was completed in 1976. This consisted of installing tube-wells with locally manufactured hand-pumps in co-operation with DANIDA, WHO and the Bangladesh Department of Public Health Engineering.
- !PU:! This report was not intended to serve as a complete or definitive evaluation statement on the rural water supply construction project, but rather to deal with some of the more difficult parts of a proper evaluation (i.e. health impact and water utilization patterns). This survey was conducted to supplement previously conducted process and output evaluations.
- !ME:! The survey was directed by 2 UNICEF Water Section officers and a Medical Statistician employed by WHO. It used a cross-sectional study design to compare, at one point in time, various portions of the population differing in water supply availability, usage, and other relevant factors; and to try to seek out the relationships between these factors. The key indicator selected as a measure of health impact (status) was diarrhoeal morbidity (including any incidence of diarrhoea or dysentery over the week preceding the interview). The lengthy questionnaire also included questions on usual water source, population of each household, size of dwellings, accessibility to tube-well water, type of latrine used, and the physical characteristics of the nearest tube-well to each household. The questionnaire was tested on UNICEF staff members and in 3 villages near Dacca. The survey was conducted in 120 villages that had been randomly selected by WHO for their periodic natality/mortality studies. 27 survey teams conducted a total of 11,489 interviews over a 6-week period during the dry season (when diarrhoeal morbidity was expected to be highest). The questionnaires were coded and punched on computer cards. The resulting data were analyzed using programming and computer facilities of the Bangladesh Bureau of Statistics.
- !FI:! The survey found that, on a country-wide basis, 73% of the households were within 700 feet of a tube-well. 52% of the households used tube-well water for drinking, while 27% used ring wells and the remainder used other sources. There was, however, great variation noted from village to village. Diarrhoea and dysentery attack rates (for the week preceding the interview) were identical for tube-well and ring well users (3.9%), but much higher (7.5%) for those using surface water. Very few households used tube-well water for other purposes besides drinking—a factor which may have diluted the project's impact. The study demonstrated a typical pattern of decreasing water usage with distance and a greater morbidity for those further from the wells. Within each category of water source, the 1 to 10 age group invariably had the highest attack rate—presumably because this group is rather inconsistent and uncontrolled in their water use and other habits. A correlation was drawn

between climate (i.e. water deficit) and diarrhoeal morbidity—the drier the zone, the higher the morbidity. The attack rate was also found to vary inversely with socio-economic status (as measured in terms of floor area of the household), but it appeared that the lower socio-economic status households gained relatively higher marginal benefit from having access to tube-well water. In certain areas, where the water was found to have a high iron content, the attack rate was also higher. This suggested that the high iron content was deterring the installation and use of tube-well water, and resulted in uncontrolled use of less pure sources of drinking water. Villages with higher population density (i.e. zones of direct urban influence) were found to have slightly higher attack rates. Patterns of latrine usage were also studied. 51% of the adults used latrines (of any type), whereas only 13% of the children did so. 51% of the households sampled lived over 3 miles from the nearest government health facility and only 18% sought help from such facilities the last time they were ill enough to be bed-ridden. Most reported having seen unqualified allopaths and indigenous healers (60%). Diarrhoeal morbidity was found to be lower among populations living in thanas where Rural Health Centres were located — but this may have been an indirect relationship since the location of these Centres may be associated with the presence of other factors (i.e. higher socio-economic status) affecting diarrhoeal morbidity. A survey of bacteriological quality of water was also conducted and 30% of the tube-wells were found to be unsatisfactory. However, this was by far better than all of the other sources tested (i.e. ring wells, tap water, lake water, etc...). Improper construction, use of contaminated water for priming, improper siting and contamination during regular maintenance, were all suggested as causes for tube-well contamination. Finally the data were compared with other studies in Africa and some conducted in Bangladesh—several of which gave contradictory results.

!RE: It was concluded that the accessibility and use of tube-well water for drinking seemed to be a significant factor in maintaining better health (lower diarrhoeal morbidity) among users. Other significant factors with regard to health were the availability of water (as determined by climactic factors), the socio-economic status of villagers, urban influence and water quality (i.e. iron content). Five recommendations were made on the basis of this evaluation. The first concerned the need to seek alternatives to reduce the iron content of certain wells. The second proposed that the 1 to 10 year olds deserve special attention when designing preventive health programmes (especially in health education), because of their higher attack rates. A similar focus was proposed for people living in densely populated rural areas. The fourth recommended stepped-up education and better maintenance to increase tube-well water use for other purposes, in addition to drinking. Finally, it was proposed that the data from this survey be studied further to help rank the various factors with regard to positive or negative health impact.

!Document Quality: Format 9 Content 10!

!CR: This was a very well written and worthwhile report. It was well organized, with an extensive table of contents and 3 useful annexes (including the survey questionnaire). The investigators used local expertise in planning their survey—making it a co-operative venture which paid off handsomely in the end. Survey questionnaires were appropriately tested and revised, and the obviously complex logistical problems of surveying over 11,000 households in 120 villages, were admirably resolved in about 6 months. The conclusions

drawn from the survey's findings are cautiously stated and sufficiently qualified — as merits a subject area as controversial as this one. Tables are included in the text, but could have been used more extensively. In several cases, important findings were not discussed (i.e. Why was the proportion with excreta disposal facilities so much higher in this survey than in the earlier WHO survey (32 vs 6%)? Why did people in saline surface water areas use tube-wells more often in spite of the fact that they were far from their homes?). It is unfortunate that the study does not compare the age distribution of tube-well users with that of others. In view of the inordinate morbidity in the 1 to 10 year age group, the age structure may have affected the survey results. Apart from this, the only major problem related to the survey of water quality. The number of water sources sampled was insufficient to make the types of comparisons and conclusions which were drawn. Although it was not possible to state conclusively (with a cross-sectional survey design such as this) that the provision of tube-well water resulted in improved health status, the survey did identify some of the significant factors which influence this relationship. The survey also came up with valuable information on water and latrine use, which can be used for revision of programme targets. This would be a good model for other projects considering impact evaluations of this sort.!

KW: RURAL, APPLIED RESEARCH/STUDIES, EVALUATION/MONITORING, APPROPRIATE TECHNOLOGY, UNICEF/NGO CO-OP (DANIDA), UNICEF/UN AGENCY CO-OP (WHO), DIARRHOEA, TUBE-WELLS, HAND-PUMPS, LATRINES, WATER USE, SOCIO-ECONOMIC STATUS, BACTERIOLOGICAL TESTING, CLIMATIC VARIATION, WATER CONTAMINATION, HEALTH SERVICES UTILIZATION, HEALTH IMPACT, WATER USE, WATER QUALITY, SURVEY, DISEASE MORBIDITY

23#

20 PROTOTIRS SEARCH OUTPUT 20

RN: 24
 TI: EVALUATION OF RURAL WATER SUPPLY PROJECTS IN THAILAND: FINAL REPORT
 AU: Weesakul, B; Hirunruksa, A; et al/National Institute of Development Administration
 SO: UNICEF, National Economic and Social Development Board
 IM: 1978, Bangkok, Thailand
 PG: 111 pages, (mimeographed), 20 tables, 1 figures, 7 appendices
 TL: English

- !DE:! The National Water supply Project in Rural Thailand was initiated in 1964. The project sought to make potable water available to all village residents for household consumption. Water has been provided from 10 different types of sources, including shallow wells, deep wells, ponds, metal and concrete tanks, tube-wells, rural piped supplies, reservoirs and canals. Eleven Govt agencies were engaged in this project, including the Departments of Mineral Resources, Health, Public Works, Local Administration, Community Development, Public Welfare, National Security Command, Royal Irrigation Department, Office of Accelerated Rural Development, and the National Economic and Social Development Board (NESDB). Through 1977, over 110,000 projects had been completed at a cost of over 2,000 million baht (US\$ 90 million).
- !PU:! This evaluation was undertaken with financial support from UNICEF through the NESDB. It aimed to review information on the process of work and identify problems in implementation, so that recommendations could be made to the Govt for formulation of future policies and programmes for the provision of water supplies. Because of budget limitations, data collection was confined to selected provinces in the Northeast.
- !ME:! The evaluation was based on a large amount of data collected from various sources at several levels. Data collection was divided into 4 steps: 1) collection of data on project management through interviews with project officers and from project documentation at the central level, 2) the use of similar methods of data collection at the regional and provincial levels, 3) preliminary data were collected from 2500 villages in 20 sample districts (these were used to stratify villages for the last step), 4) a more detailed survey was conducted of village chiefs and water supply officials in a stratified sub-sample of 250 villages. The stratification was done to assure that a variety of types of water supply projects would be represented.
- !FI:! The evaluation found that the project had been successfully implemented, with more than 100,000 installations completed over a 12 year period, but that it was far from achieving its objectives. Despite substantial progress achieved on project implementation, a number of problems were identified which stemmed from the fact that there were many gov't agencies involved in project implementation. These included: lack of definite policies or operational objectives, duplication of work, lack of procedural standards, absence of an integrated information system, inadequate co-ordination, inadequate attention given to repair and maintenance of water sources. Other problems identified included: insufficient budget, cumbersome financial regulations, lack of co-operation from village and local agencies, no communication system, terrorist threats, lack of expertise of project personnel and rapid population growth. The field survey found that projected installation-to-household ratios were highly overestimated (actual utilization was about 30% of projected figures), that a high proportion of drilled and tube-wells were broken down during the survey (this varied from 19 - 35%), that the average serviceable

age was less than 6 months for tube-wells, and between 2.5 and 5 years for drilled wells (depending upon which ministry installed them). Fifty percent of the tube-wells were considered unuseable and 40% of the shallow dug-wells had "disappeared." The survey found that water utilization rates for surface water sources (i.e. shallow wells, ponds) was twice that of groundwater sources — mostly because of equipment breakdown in the latter, but also out of preference for the former. The majority of people still consumed water from sources which were not provided by the govt. Based on this evidence, it was judged that the hope to provide water supplies which are safe and sanitary and equally distributed was still far from a reality. Cost analysis of the various water sources was also conducted, and shallow-wells had the lowest cost per man year of utilization. It was noted, however, that these were not "sanitary" water sources and that a variety of other factors would have to be taken into consideration besides cost, before selecting one type of source over another. Much of the high cost for "sanitary" sources was due to their short serviceable age and under-utilization, problems which could be reduced primarily through adequate maintenance.

!RE: Several of this paper's recommendations were made in terms of policy alternatives. These included 3 possible strategies for future project expansion (i.e. a primary focus on deep drilled wells, on economical shallow ground wells, or on shallow wells and surface ponds). The evaluation also called for a reorganization of the project's management structure along one of the following lines: 1) co-ordinated involvement of multiple agencies in project implementation, or 2) amalgamation of all agencies involved into a single unit (under the Ministry of Health, ideally). Other recommendations included increased co-ordination of efforts at the local level, and the need to develop a systematic means for repair and maintenance of water resources. Four alternatives were proposed for the latter: establishing a maintenance unit within each agency, establishing maintenance units under the provincial field offices, integrating maintenance work of all implementing agencies under the responsibility of the Provincial Administration agency, or transferring maintenance responsibility of local leaders of villagers. It was suggested that maintenance tasks could be broken down into 3 levels of complexity, with the simplest being performed by villagers themselves. Several general principles were recommended for future planning. These included: 1) that the Govt should provide additional support to the project (50 to 100% larger budget), and 2) that a desirable type of water source should be identified and most of the govt's resources should be channeled into its construction — other types would be built only in exceptional circumstances (this would permit standardization of supplies, training, maintenance procedures, etc...).

!Document Quality: Format 08 Content 08!

!CR: This lengthy evaluation report was quite well organized, with a good table of contents and a summary of the project's past performance. One of its best features was the manner in which various policy alternatives were spelled out — along with their possible implications. This left the ultimate decisions to the project officers who would have to implement them. The cost analyses were well done, and assumptions were clearly stated. There were several problems with the survey design, including the fact that it was conducted during the dry season when water use patterns were admittedly different. It is not clear how the survey was actually conducted and what sorts of instruments were used. The report's recommendations were consistent with the evaluation's findings, but the team seemed to focus on administrative/fiscal

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problems at the expense of overlooking possible educational or social aspects. No serious suggestions were made to introduce an educational component to change water utilization patterns — in spite of evidence that villagers clearly preferred their traditional water sources. The project itself provides a wonderful example of how multi-sectoral programmes should not be organized.!

KW: RURAL, POLICY, EVALUATION/MONITORING, APPROPRIATE TECHNOLOGY, INFRASTRUCTURE DEVELOPMENT, MULTI-SECTORAL, DEEP WELLS, SHALLOW WELLS, SURFACE WATER, GROUNDWATER, PONDS, WATER STORAGE, PIPED WATER SUPPLY, COST ANALYSIS, HAND-PUMPS, COSTS, WATER USE, LESSONS LEARNED, BREAKDOWN RATIO, MAINTENANCE, SURVEY

24#

RN: 25
 TI: "...GREATER THAN THE HOLE": SOME PICTORIAL/FIELD/BACKGROUND OBSERVATIONS ON SOCIAL ASPECTS OF THE RURAL WATER SUPPLY PROJECT
 AU: Drucker, D./UNICEF
 SO: UNICEF
 IM: 1980, June, Rangoon, Burma
 PG: 39 pages, (mimeographed), 30 photographs
 TL: English

!DE:! UNICEF contributed over one third out of the US\$ 30 million Rural Water Supply Project in Burma since it began in 1978. Project activities focussed on well drilling and (to a lesser degree) pump installation. As a result of a growing concern on UNICEF's part that the project's health and social impact was not adequate, an ex-patriot UNICEF staff member was charged with developing the project's social aspects. After considerable debate, a budget of US\$ 600,000 was allocated for activities centering around the development of a Training Institute for teams of social development workers.

!PU:! This document was written by the advisor for the "social aspects" project, and is sort of an informal evaluation-cum-progress report on the project's development. It was intended to highlight the types of problems which occurred at various levels (i.e. central and local) during project implementation and operation, and which detracted from the project's desired impact. The report also includes a number of recommendations for actions which UNICEF should consider to resolve these problems.

!ME:! This informal evaluation report was based on field trips the author made while he was project advisor, as well as on a review of reports and correspondence related to the project. In addition to a written analysis of the project, this report included a variety of photographs of water distribution points and pump sites. The sites which the author was permitted to visit and which are depicted in the photographs were selected by the Govt and there is no specific evidence of how representative they are of the project as a whole. It was suggested, however, that these were probably the more successful project sites.

!FI:! The photographs included in this report bear out quite vividly a number of technical problems related to the design and construction of tube-well sites. These included: poor drainage, insufficient number of collection points, lack of faucets (contaminated wooden bungs were used instead to seal off distribution pipes when not in use). Distribution arrangements were not adapted to community needs, as outlets were too low, courtyards were too small for animal carts used to transport water, and in certain cases water was drawn from a trough with filth-encrusted containers. A variety of drilling problems were also encountered during field visits, including lack of screens, use of ungraded gravel and poor site selection. Drilling and pump-fitting were apparently done as two separate operations—sometimes with an interval of 3 to 8 years before the pump was installed and operating. This resulted in certain cases where wells collapsed and never produced any water at all. New pump motors were reportedly poorly ventilated and maintained—causing a number of them to burn out. In other cases, communities showed their ingenuity by using the motors for other purposes (i.e. to generate electricity). These problems were felt to be signs of very poor planning at the village level, a lack of understanding of the limitations and possibilities of the equipment provided, and vacillation of Govt responsibility for sanitation. The project's emphases on "convergence" of basic services and on community participation

were not in fact realized. The report discusses the process through which a Task force was constituted to develop a project proposal for improving the social aspects. This project went through several revisions and was transferred from department to department until it was apparently tabled.

!RE:! It was concluded that the present situation makes it very unlikely that the water project's health objectives will be achieved—indeed it was suggested that more water would mean more disease. On the basis of the observations included in this report, the report recommended two major points. First, that village level planning assistance was imperative, and second, that UNICEF advocacy was needed in Govt circles to develop a concern about the urgency of the matter in relation to the health/social objectives of the project. It was mentioned that this might be accomplished by suggesting that future UNICEF support might be jeopardized if a "social aspects" project is not incorporated into the present programme, and that funds should be earmarked for exclusive use by the "social aspects" project.

!Document Quality: Format 07 Content 07!

!CR:! This report was somewhat unusual in its reliance on pictorial evidence of evaluation findings. This medium was quite effective in this situation, since design defects were so obvious. A case study type of approach such as this helps one understand the types of problems which occur, but it does not provide any information about their magnitude. It is difficult for a decision maker to judge the representativeness of the evaluation's findings and respond with direct actions. The recommendations which have been proposed are general, but reference was made to more specific recommendations in other project documentation. The photographs in this report provide a very good example of what can result from poor design and lack of concern for sanitation. The fate of a "social aspects" component which is tacked onto an existing water programme—as a project in and of itself, rather than incorporated into the larger programme from the beginning—is revealing, and is a valuable lesson to learn from this report.

KW: LESSONS LEARNED, RURAL, EVALUATION MONITORING, DIESEL PUMPS, HAND-PUMPS, GROUNDWATER, DRILLING RIGS, SANITATION, TRAINING OF SOCIAL DEVELOPMENT WORKERS, COSTS, HEALTH IMPACT, WATER CONTAMINATION, PROJECT PLANNING/MANAGEMENT SUPPORT, ADVOCACY/PROMOTION, COMMUNITY PARTICIPATION, TUBE-WELLS, WELL DEVELOPMENT, SOCIOLOGICAL ASPECTS

25#

RN: 26
 TI: EVALUATION OF RURAL WATER SUPPLY SCHEMES IN INDIA
 AU: Sundaresan, B., et al/National Environmental Engineering Research Institute (NEERI)
 SO: Central Public Health and Environmental Engineering Organization (CPH & EEO) of the Ministry of Works and Housing
 IM: 1982, Sept., Nagpur, India
 PG: 346 pages, (offset), numerous tables, numerous figures, 2 appendices
 TL: English

!DE:! Having participated in the UN Water Conference in Argentina in 1977, India is committed to the objectives of the IDWSSD as outlined in the conference resolution. A number of targets for both water supply and sanitation coverage levels have been set and it has been estimated that about Rs. 146 billion (US\$ 13 billion) will be needed to achieve the targets set forth for the decade. The focus of this particular review was essentially on rural water supply schemes, which ranged from tube-wells with hand-pumps to chemically treated piped water supplies with house connections. No information was provided about UNICEF's participation in this project.

!PU:! This report was sponsored by the Central Public Health and Environmental Engineering Organization (CPH & EEO), Ministry of Works and Housing to critically review and evaluate water supply schemes already implemented in different parts of the country and to identify factors which have contributed to their success and those that have hampered their progress. The resulting feed-back was to help avoid pitfalls in future programmes and optimize utilization of resources. The report focussed on technological, administrative, financial and socio-economic constraints to effective implementation, operation and maintenance of the schemes; and indicated recommendations for future planning, design and implementation.

!ME:! The study consisted of field visits to villages for on-site observations, collection and analysis of water samples; personal interviews with villagers regarding degree of service, health status, environmental sanitation, etc...; and discussions with engineers of State Public Health Engineering Departments and local officials. Survey questionnaires were developed and field tested for gathering information about water systems and about beneficiaries (i.e. health status). Sixty-six water supply schemes in 11 states were randomly selected from a list of all schemes serving population groups below 1000 and between 1000 and 10,000 persons, and which had been in operation for at least 2 to 3 years. Relevant data for seventeen reference (control) villages were also collected for comparison—to help in efforts to establish the project's impact on the health status of the user community. The water schemes selected included simple hand-pump tube-wells and piped supplies serving communities through public stand posts and/or house connections.

!FI:! The evaluation found that planning and implementation of water supply and sewerage systems was the responsibility of Public Health Departments/Water Supply and Sewerage Boards in every State. Planning, investigation, and design were undertaken at the state level, and implementation was carried out under the supervision of Superintending Engineers. Problems identified during planning and implementation phases included: inability to meet objectives with reference to adequacy and reliability of yield at the source; inability to meet user demands for higher levels of service; delay in according approval for taking up the designed schemes; unsound construction of tube-wells, stand

posts and overhead reservoirs; and lack of an organized evaluation/monitoring system to guide future planning. Problems identified during operation and maintenance phases included: unsatisfactory maintenance when systems were maintained by local bodies, costly maintenance when they were maintained by PHEDs, irregular power supply (adversely affecting degree of service), ineffective batch disinfection, unsatisfactory quality of supplies obtained from surface sources, and lack of community participation. A positive feature identified was the satisfactory performance of India Mark II deep well hand-pumps (service and bacteriological quality of water). Other problems included insufficient financial allocation and low degree of financial contributions from village communities; lack of motivation, health education and community participation; poor environmental sanitation; lack of knowledge and records on water-borne diseases. Constraints to project implementation included: scarcity and delays in shipment of materials, inadequate allocation of funds for capital works, lack of trained personnel for operation and maintenance, inadequate funds for operation and maintenance, outmoded administrative and financial procedures causing delay in implementation, non-availability of adequate data on health aspects (resulting in inability to meaningfully interpret the project's health impact), and financial powers of Engineering staff not commensurate with professional capabilities and responsibilities. Specific findings with respect to each of the States surveyed were also reported.

!RE:! Four sets of recommendations were made on the basis of this extensive evaluation effort. Twenty general recommendations were made. These included: a need to make water supply a core sector with resource allocation which matched the magnitude of the problem; a need for national norms for classification of villages and allocation of funds; a need for administrative changes to improve co-ordination, to link water supply with development efforts in other sectors, to encourage decentralization and to strengthen district level infrastructure; a need for a strong health education component using Health Guides selected from amongst the villagers; a need for training centres for operators of rural water supply schemes; a need for greater community participation, a need for improvements in logistics for supply of materials, a need for a stronger information system and a monitoring and evaluation system. The evaluation recommended that maintenance should be entrusted to district level Govt. agencies with wider application of the 3 tier maintenance system found in Tamil Nadu; that efforts should be made to increase the level of service (including provision of house connections where desired); that provisions should be made to levy a water tax on beneficiaries to ensure operation and maintenance; and that each state should have a research and development wing with 2% of investment earmarked for R & D. The second set of recommendations concerned revised design norms including a 57% increase in the rate of supply for house connections and a 125% increase for public stand posts (PSPs)/hand-pumps. This would require the downward revision of the number of persons that could be served by one PSP (from 250 to 150). A third set of recommendations concerned general guidelines for system design (i.e. design period; per capita supply; choice of technology, treatment and distribution systems). The fourth set of recommendations consisted of specific suggestions for improvement of individual water supply schemes at the state level.

!Document Quality: Format 09 Content 08!

ICR: This lengthy report was very well organized, with a good summary of the evaluation effort, its findings, and its recommendations. In addition, detailed information is included about water supply schemes in each state which was covered by the investigation. This should prove useful at the state level. The analysis of the water supply programme (in aggregate) is somewhat weak and few of the aggregated data are included in the report. Without more information of this kind, it is difficult to judge the accuracy of the conclusions which were drawn. The methods adopted for sampling and assessing the technical aspects of the various water schemes were appropriate and the entire evaluation effort made effective use of national research expertise. The survey questionnaire used to assess the health status of beneficiaries could have been improved to eliminate a number of leading questions, and to make it more adapted to village level vocabulary. It is not clear whether or not the results of this particular survey were ever analyzed in aggregate, since only the most general observations are noted in the report. This was not a very effective instrument or study design for assessing the programme's health impact. The recommendations are sufficiently specific, but appear somewhat optimistic in light of the financial constraints identified by the study. Nevertheless, they cover a wide range of improvements which could increase the project's impact and improve its functioning.!

KW: RURAL, EVALUATION/MONITORING, MANPOWER TRAINING, APPROPRIATE TECHNOLOGY, LOCAL PRODUCTION, TRANSPORT, INFRASTRUCTURE DEVELOPMENT, PROJECT PLANNING/MANAGEMENT SUPPORT, COMMUNITY PARTICIPATION, PIPED WATER SUPPLY, TUBE-WELLS, HAND-PUMPS, PUBLIC STAND POSTS, HOUSE CONNECTIONS, WATER USE, WATER QUALITY, WATER STORAGE, COSTS, MAINTENANCE, HEALTH IMPACT, WATER TREATMENT, CHEMICAL TREATMENT, SURVEY

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RN: 27
 TI: REPORT ON THE SITUATION OF WOMEN IN THE TARGET VILLAGES OF THE UNICEF DOMESTIC WATER SUPPLY PROJECT IN BAHR EL GHAZAL PROVINCE, SUDAN
 AU: Russel, Annemarie
 SO: UNICEF
 IM: 1979, Oct., Khartoum, Sudan
 PG: 40 pages, (photocopied), 34 tables, 3 annexes
 TL: English

!DE:! The Domestic Water Supply Project was conceived to meet the perceived need for clean water by both rural village inhabitants and Govt officials in Sudan's Southern Region. Clean water is viewed as a prerequisite for the success of the Region's ambitious National Primary Health Care Programme, yet the entire Southern Region was estimated to have only 99 wells in 1974 (i.e. about 50,000 persons per well). The project's general objectives were to improve the general health and nutrition levels, and socio-economic conditions of the rural inhabitants in the project area through the provision of safe water, and to improve the general situation of women by providing easy access to water. Project activities included 2 areas: the water supply operations (i.e. site selection, drilling, hand-pump installation, operation and maintenance functions) and training (of managerial and technical counterparts, workshop staff, drillers and village attendants). The project sought to create an institutionalized, well functioning organization staffed by Sudanese for planning, co-ordinating, and implementing rural water schemes.

!PU:! This report had two general purposes: 1) to assess the impact of the improved fresh water supply in the project area on the lives of rural women and their children, whose major task is to transport water, and 2) to explore the overall situation of rural women and their children with regard to their work, health, pre- and post-natal care, education and felt needs; with a view towards future programming for this population.

!ME:! The evaluation report was based on a mini-survey which was conducted during the author's one-month stay in Wau and environs during the dry season of 1978. The survey was a type of anthropological profile study of a sub-sample of the project's population. A total of 16 villages were visited and individual questionnaires were administered by the author, with the assistance of a translator, to a total of 15 rural women. No information was given about how the interviewees were selected, nor was the representativeness of this sample discussed. Interviews were also held with relevant personnel, traditional birth attendants (TBAs), women's club leaders, and social service employees. This survey was a supplement to the overall evaluation of the UNICEF Water Supply Project in Bahr El Ghazal Province, which was produced as a separate document.

!FI:! The findings of this survey included wide-ranging descriptive information about the situation of rural women and children in the project area, and a more limited assessment of the project's impact on these target groups. The survey found that most women interviewed were aware of the relationship between clean water and good health and most of them reported a reduced incidence of illness for themselves and their families since using the UNICEF hand-pumps. However, none of the women were using the project hand-pumps exclusively for their water needs. It was also noted that other sources were increasingly used during the rainy season. Most reported that the pumps had significantly reduced the amount of time spent fetching water (by about 6

hours per day), but that this did not result in an increase in the amount of water used. For most of the sample, the time gained from use of the hand-pumps appears to be channelled into food processing, duma (native beer) brewing, relieving children of some of their chores, or more general daily tasks. Sanitation facilities in the project area were described as grossly inadequate. The report goes on to describe general characteristics of the village women interviewed (i.e. age marital status, tribe, etc...), as well as specifics about pre- and post-natal care, work, social institutions, needs, and water use patterns. A number of problem areas were identified by these women. These included: being overworked, insufficient time and materials to process local beer for sale, lack of adequate transport, and worry about aging without security afforded by spouse and/or children. Other respondents voiced a number of other concerns as well, including: lack of a medical equipment and drugs at medical facilities, lack of a proper marketplace, shortage of schools, difficulty of obtaining food commodities, and insufficient agricultural surplus for marketing.

!RE: It was concluded that the UNICEF Domestic Water Supply Project had been successful in reducing the time spent by women and children in transporting water and, according to the self-reports of interviewed beneficiaries, the incidence of gastro-intestinal illness. However, the report also showed that the present situation of women and children in the project area remained enormously complex and did not lend itself to simple solutions. The majority of the report's recommendations were related to the need to conduct additional surveys of feasibility studies to gather data for programme planning. Specific aspects which were to be explored included: women's water use patterns and their role in decision-making; use of TBAs and traditional healers; feasibility of using "wet nurses" and Female Community Development Social Workers; feasibility of developing "Maternity Hostels", day-care networks, extension services for women, vocational training, wood conservation and appropriate technology for household heating and cooking needs; fetal mortality, nutrition status, hygiene beliefs and practices, child spacing, immunization, and language and communication patterns (for possible development of appropriate media for educational purposes). Other recommendations included: 1) advocacy for increased village and Govt interest in TBAs and traditional healers, 2) training of TBAs, 3) advocacy for the hiring of female Community Development Social Workers, 4) curriculum revision for rural girls to include practical and vocational training, 5) provision of grinding mills for processing of grains and 6) extension of social/supportive service of the Dept of Social welfare to the project area.

!Document Quality: Format 09 Content 08!

!CR: !This well organized report provides a wide variety of descriptive information about the situation of women in the project area. It features a good summary of findings, an excellent table of contents, and the survey findings are nicely presented in table form (as an annex) for those interested in more detailed information. The survey design has major faults insofar as sample selection is concerned. This renders conclusions made about water use, time savings and health impact virtually indefensible. What it lacks in quantitative analysis, however, is made up for by its thorough treatment of qualitative findings. These are presented in very objective and culturally sensitive terms, and provide valuable insights into the attitudes and

30 PROTOTIRS SEARCH OUTPUT 30

practices of village women in the project area. This anthropological approach (using a limited number of informants supplemented by the personal observations of the investigator) is appropriate for gathering this type of descriptive information.

KW: CHILDREN 0-5, CHILDREN 6-15, PREG/LACT WOMEN, RURAL, SITUATION/TREND ANALYSIS, EVALUATION/MONITORING, ADVOCACY/PROMOTION, MANPOWER TRAINING, APPROPRIATE TECHNOLOGY, LOCAL PRODUCTION, INFRASTRUCTURE DEVELOPMENT, PROJECT PLANNING/MANAGEMENT SUPPORT, COMMUNITY PARTICIPATION, HAND-PUMPS, WELL DRILLING, SOCIOLOGICAL ASPECTS, ANTHROPOLOGICAL ASPECTS, WATER USE, TRAINING OF VILLAGE ATTENDANTS, TRAINING OF MANAGERS, TRAINING OF WORKSHOP STAFF, TRAINING OF DRILLERS, TRADITIONAL BIRTH ATTENDANTS, HEALTH CARE, SURVEY

27#

RN: 28
 TI: JOINT EVALUATION OF THE UNICEF-SUPPORTED DRINKING WATER PROJECTS IN KORDOFAN AND SOUTHERN REGIONS, PART I: GROUNDWATER PROJECTS
 AU: Adang, J.A.; Rahman, O.A.F.A; et al/Rural Water Development, National Administration for Water, Ministry of Finance, UNICEF
 SO: UNICEF, Govt of Sudan
 IM: 1982, June, Khartoum, Sudan
 PG: 75 pages, (mimeographed), 4 tables, 20 appendices
 TL: English

!DE:! This report actually consists of 2 separate evaluations in different areas (i.e. Wau and Kadugli) of southern Sudan. Each was somewhat different in scope, and had different findings and recommendations, but their methodologies were essentially the same. The Wau project began in 1976 with the target to construct 2,500 wells fitted with hand-pumps by the end of 1985 (supplying improved water supplies to 48% of the rural population). The project faced some technical problems with the design and development of wells, and the anchoring of hand-pumps. As a result, only 416 wells had been completed by mid-1982 and there had been a high rate of breakdowns. The project was managed by UNICEF expatriot staff at the time of the evaluation. The total UNICEF contribution for the period 1981-85 was estimated at US\$ 9.4 million. The Kadugli project featured two activities: a groundwater project, similar to that in Wau, and a programme for surface water (rectification of hafirs and water storage and treatment). The surface water project was evaluated in a separate report, therefore it was not considered in this evaluation. This project began in 1977 with an estimated UNICEF commitment that began at US\$ 1.9 million and was later raised by US\$ 4.5 million. The groundwater portion of this project established a target to construct 900 wells fitted with hand-pumps by 1985 (supplying 40% of the rural population). By mid-1982 only 109 wells had been completed. Implementation was hampered primarily by the lack of spare parts for drilling rigs and by the high proportion of dry holes drilled. Project management was handed over to the NAW in early 1982. Total UNICEF contribution for the groundwater project in Kadugli from 1981-85 was estimated at US\$ 3.7 million.

!PU:! The purpose of these two evaluations was to examine the extent to which the Wau and Kadugli groundwater projects had achieved the overall objective of providing sufficient quantities of safe water and education about its safe use for drinking, bathing and other domestic needs, thereby improving the general health and socio-economic conditions of the people. The evaluation focussed on the managerial and technical aspects of the projects, including: management capability and co-ordination, logistics, construction, maintenance and operation, water quality, hydrogeological work, monitoring and reporting, water use, education, and standardization.

!ME:! Both evaluations were conducted by the same team, composed of 6 principal members (including 2 civil engineers, 2 hydrogeologists, a drilling engineer, and an economist). The team based its findings and recommendations on a review of existing documents, discussions with project and advisory staff, and a one-month field visit to observe procedures of well construction, platform erection and hand-pump installation, as well as to inspect existing handpump installations.

IFI: Wau. The evaluation found the following problems related to this project: Site selection was satisfactory except in certain cases when requests were sent directly to the Project manager—bypassing Provincial authorities. Water quality was chemically suitable, although high in iron and manganese, but bacteriological quality was poor, especially after the rainy season. Well drilling and design problems, including insufficient development, resulted in the collapsing of wells in unconsolidated formations and a high proportion of dry holes. Maintenance and operation were reportedly hampered by the high cost of mobile maintenance teams and poor reporting of breakages, resulting in frequent breakage of connecting rods and a high proportion of pumps out of order (31% during this survey). Sanitation was lacking around the well sites and pollution from cattle was noted to be a particular problem. There was also no provision for clothes washing or bathing. Management problems centered around the fact that the project was still entirely in the hands of UNICEF expatriots and that provisions for the training of Sudanese counterparts was poorly planned and inadequate.

Kadugli: This evaluation noted that one of the major problems affecting project implementation was financial—only about 1% of the US\$ 6.95 million in "noted" funds had actually materialized. Other problems included the following: Site selection was hampered by the need for better maps/aerial photographs and the lack of proper equipment for siting of boreholes. As there was no lab for analysis of water quality, this aspect was not carefully appraised, but some samples which were tested showed satisfactory bacteriological quality. Well drilling and design were hampered by a severe shortage of spare parts and fuel supply problems, but the team also found inappropriate design in certain geologic formations and improper capping/development of dry boreholes—rendering later attempts to improve water yield fruitless. It was reported that 50% of the boreholes were dry, a factor which was reflected in a relatively high cost per successful well of US\$ 2,500 (as opposed to \$1,620 per borehole). Maintenance and operation were hampered by inadequate, centralized, costly maintenance teams, and surveys in the project area found a high proportion of wells out of order (between 15 - 43% in different surveys). Logistical problems were caused by the breakdown of vehicles and the lack of a laboratory for water quality analysis. A small survey of water use found an average of 303 daytime users per pump and an average utilization rate of 24 l/capita/day. The team noted that the project had done practically nothing on sanitation, but that a workshop was held in Feb. 1982 to take up this topic. While project management had been turned over to NAW in Kadugli, the UNICEF "advisor" still released UNICEF supplies and cash and a number of management problems were reported, including: disagreements over recruitment and job descriptions, a high turnover rate for project managers, and a lack of personnel with managerial capability. The project's training component had only been partially implemented, and this was restricted to on-the-job training.

IRE: Two general recommendations were made to improve the functioning of both projects. These were: 1) to improve and standardize reporting/monitoring procedures, and 2) to advocate the local manufacture of hand-pumps for the projects. In addition, six sets of recommendations were made for each project as follows:

Wau: 8 recommendations related to water availability and quality (i.e. explore feasibility of rehabilitation or construction of alternative water sources, manual drilling techniques, and improvements in the system for monitoring water quality). A total of 15, mostly technical, recommendations were made in relation to well construction and hand-pump installation (i.e.

provision of certain supplies and equipment, training of drillers in well design, recruitment of more staff, and the establishment of a better reporting system). Another 15 recommendations related to improvements in logistics. These included the construction of stores, a sub-office and a lab; administrative reorganization; recruitment of a mechanical instructor, RWD counterparts and mechanics; the provision of spare parts and the organization of a recording and inventory system. 6 recommendations were made to improve operation and maintenance, including decentralization of maintenance work at various levels, training of maintenance personnel, provision of tools and spare parts for pump caretakers, the distribution of a manual on hand-pump maintenance, as well as a number of technical suggestions.

Kadugli: This evaluation report made 10 recommendations to improve water availability and quality. These focussed upon improving site selection through the provision of maps/aerial photographs, surveying equipment and training for well drillers, and on establishing a laboratory for water quality monitoring. 15 recommendations were made with regard to improving well construction and developing existing dry wells. These included the provision of various supplies and drilling equipment, the recruitment of an additional drilling team, the adoption of several different drilling techniques, the fencing of well sites, and improved recording of information about drilling. 8 recommendations were made to improve logistics, including: recruitment of a chief mechanic, reorganization of stores and parts inventory systems, the provision of 6 trucks, and improvements related to the laboratory. Operation and maintenance improvements were the focus of 8 more recommendations. These included: establishment of mobile maintenance teams as an interim measure, the decentralization of maintenance functions over the long term, the establishment of a well development unit, the urgent repair of loose pump stands, and the improvement of maintenance recording and reporting. 4 recommendations were made to improve water use and sanitation, including: the initiation of surveys and regular monitoring of water use; and the improvement of sanitary conditions around wells with community participation in the construction of wash slabs, cattle watering places, and in the improvement of drainage. Finally, 8 suggestions were made to improve project management. These included: training of management personnel, hiring of a training officer, improved supervision, and the definition of job descriptions and personnel responsibilities.

!Document Quality: Format 09 Content 08!

!CR: This lengthy report was quite well organized, with a table of contents, a brief summary, and a number of appendices (which include the terms of reference for the evaluation). Technical and managerial components of the project are considered in appropriate detail, but water use, the training component, and general policy issues are somewhat neglected (perhaps the fault of the terms of reference, rather than of the evaluation team itself). Recommendations are very specific and follow directly from the evaluation findings. Not only are they discussed in the text, but they are presented in aggregate at the end of the report as well—a useful format for those who must translate this information into action. Taking up each of these projects independently was a good idea because of their differences, and the recommendations which have been proposed reflect each project's differing needs quite well. Nevertheless, a bit more discussion would have been helpful about how well these projects fit into the larger context of water supply and primary health care programmes on the national level.!

34 PROTOTIRS SEARCH OUTPUT 34

KW: RURAL, EVALUATION/MONITORING, MANPOWER TRAINING, PROVISION OF SERVICES,
APPROPRIATE TECHNOLOGY, LOCAL PRODUCTION, COMMUNITY PARTICIPATION, HAND-PUMPS,
WELL DRILLING, INFRASTRUCTURE DEVELOPMENT, PROJECT PLANNING/MANAGEMENT
SUPPORT, TRAINING OF MANAGERS, TRAINING OF DRILLERS, TRAINING OF MECHANICS,
TRAINING OF PUMP CARETAKERS, WELL DEVELOPMENT, COVERAGE, LOGISTICS, WATER USE,
WATER QUALITY, COST ANALYSIS, COSTS, MAINTENANCE TEAMS, BREAKDOWN RATIO, WATER
STORAGE

28#

RN: 29
 TI: REVIEW OF THE RURAL WATER SUPPLY PROJECT, BURMA
 AU: Mendis, B; Streick, J; Wantanabe, E./UNICEF
 SO: UNICEF
 IM: 1982, June, Rangoon, Burma
 PG: 58 pages, (photocopied), 4 tables, 2 annexes
 TL: English

!DE: The Dry Zone Rural Water Supply Project was developed as part of the Third Four-year Plan (1978-82). The original plan conceived the construction and equipping of 1,700 tubewells in 1,600 villages in the central dry zone of Burma. UNICEF had been associated with earlier tubewell drilling programmes, implemented by the Rural Water and Sanitation Department of the Ministry of Agriculture and Forests, since the early 1970s through the provision of pumps and pipes for hospitals. Under the Third plan, UNICEF provided consultancy services for the preparation of supply lists for spare parts, and the provision of drilling equipment accessories and support equipment, power- and hand-pumps, piping, well casings, transportation, water-testing equipment, geophysical instruments and training. UNICEF's total commitment was approximately US\$ 13.1 million for this 4 year period, the Australian Govt provided US\$ 16.6 million plus an additional 6 million for 3 years thereafter. WHO also co-operated in the programme.

!PU: In the words of its authors, this review of the Rural Water Supply Project was "not a programme audit... (nor) an evaluation." The objective of the review was to examine factors internal to UNICEF—including its programming procedure, management structure, and decision making process—and identify their shortcomings, through an historical analysis of selected problems within the project. By analysing this experience it was hoped to learn how implementation of other projects could be improved in the future.

!ME: This project review was conducted by 3 UNICEF staff members. 2 were directly involved with the project's implementation and the third was a regional auditor from Bangkok. Although the methodology is not explicit, it is assumed that the findings were based on a review of existing project documentation (work plans, call forwards, correspondence, etc...) and on the personal experiences of the 2 review team members who were directly associated with the project.

!FI: The review focussed on 6 major problem areas: Procurement, repair facilities, logistics, personnel, the decision making process within UNICEF's Rangoon office, and future planning. Problems related to procurement included the observations that decisions to provide supplies and equipment were made as a result of chance factors rather than on the basis of systematic feasibility analyses, and that, in the event that such analyses were conducted (i.e. for the selection of pumps), there was little or no follow-up action—resulting in the ultimate procurement of inefficient pumps with high operating costs. In addition the procurement process was hampered by inefficiencies resulting from processing delays and the choice of improper or unnecessary parts and equipment—thus tying up a considerable amount of project funds in inventory. It was felt that these problems were generally due to weaknesses in the planning stage. The inadequacy of repair and maintenance facilities was also cited as a major problem, and attributed to the inability of the Govt or UNICEF to see past the physical set-up of workshops, and to consider the availability of mechanics, tools, accessories, spare parts and an inventory

system to ensure their proper functioning. Logistics problems identified included verbal and insufficiently documented decisions about supply call forwards and serious inefficiency in clearing, forwarding and storage. These problems were reinforced by apathy on the part of RWSO officials who refused to see logistics as a major problem. It was felt that UNICEF lacked consistency in applying pressure through concrete action to bring about change. Problems related to personnel centered on recruitment and training. These were highlighted by disagreements between UNICEF and RWSO over the function of some of the personnel inputs from UNICEF, by inability of UNICEF HQ to understand and interpret the recruitment needs of the project and thus identify suitable candidates, and by the failure to fully meet training needs necessitated by programme expansion and use of new technologies. Problems identified in the decision-making process within UNICEF, Rangoon, were attributed to overlapping and unclear responsibilities for UNICEF programme and technical staff. This resulted in situations when one person overstepped his domain and acted independently in areas beyond his competence, or where non-technical staff avoided involvement in the project, assuming that all decisions were too technical for a layman's comprehension. In the area of future planning, UNICEF's actions also presented some major problems. These included insufficient analysis of the long term implications of supporting a project which would continue to be heavily dependent on external support, and inadequate concern for changing targets and the implications such changes would have in view of the project's given operational constraints.

!RE:! While a number of suggestions were made at various points in the text about ways in which the project could have avoided some of the problems which were identified, there was no real list of specific recommendations made on the basis of this report. Instead, the report concluded with general observations about the project. These included the observation that UNICEF became increasingly involved in this project without conscious appraisal of whether such involvement was in line with UNICEF's mandate, without adequate planning, and without an analysis of logistic or organizational constraints. It was suggested the Programme division should have exercised tighter control over expenditures, that the project should have depended less on the technical expertise of one person, that the provision of supplies and equipment should have been linked to the provision and acceptance of technical services, that there should have been more thorough preparation of call-forward submissions, that UNICEF should have considered the possibility of expediting recruitment by contracting out to a consultancy firm for the technical input, that better co-ordination about technical matters related to recruitment should have taken place between DPA and WES section, that UNICEF should have avoided introducing anomalies in the project personnel hierarchy (as was done by upgrading posts to render salaries internationally competitive without a corresponding increase in responsibility), that UNICEF should have exercised more consistent and active participation in logistics, that it should have clarified the decision making process in the Rangoon office, that concrete steps should have been taken to ensure that the health objectives of the project were met, and that a long term plan for self-reliance should have been included in the project.

!Document Quality: Format 08 Content 07!

!CR: This somewhat atypical report was fairly well organized, with a brief project description and summaries of most of the sections. It is unusual in it's focus on problems internal to UNICEF, with only perfunctory reference to external problems and constraints. This approach might have been appropriate in another setting, but given the unique programming constraints in Burma, this report gives the reader the impression that a large part of the total picture is missing. Very few actual recommendations were made on the basis of this report. Instead, a number of conclusions were drawn about why the project had difficulty and it was left to the reader to infer the types of actions required to overcome these problems. A much more direct approach would have been more useful from an operational standpoint. Appended to this report are a note for the record from UNICEF's Senior Policy Advisor for Water and Environmental Sanitation, M. Beyer (15 Jan. 1983), and some technical comments by B. Kojicic (25 Aug. 1982). These dispute some of the findings. Beyer's note includes the observations that the review process did not include anyone with first-hand professional experience in groundwater technology, and that it did not incorporate the views of persons directly involved in the project. Kojicic refutes claims that the procurement process was unsystematic, suggesting that technically sound decisions were made for the purchase of drilling rigs, and that the choice of pumps was dictated by the Burmese Govt. On the positive side, the conclusions listed do provide a good deal of insight into the sorts of problems which UNICEF field offices should be alert to in future planning efforts. These include the danger of being drawn into a project without first assessing it's conformity with UNICEF's mandate, and the danger that a moderate initial investment in a project will raise expectations that UNICEF will meet a bottomless pit of unforeseen needs which come up during implementation.!

KW: RURAL, EVALUATION/MONITORING, MANPOWER TRAINING, LOCAL PRODUCTION, INFRASTRUCTURE DEVELOPMENT, PROJECT PLANNING/MANAGEMENT SUPPORT, UNICEF/NGO CO-OP (AUSTRALIAN GOVT), UNICEF/UN AGENCY CO-OP (WHO), WELL DRILLING, HAND-PUMPS, DIESEL PUMPS, LOGISTICS, MAINTENANCE, REPAIR, PROCUREMENT, PERSONNEL, LESSONS LEARNED, DRILLING RIGS, COSTS

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RN: 30
 TI: PILOT TRAINING PROGRAMME FOR WATER SUPPLY AND ENVIRONMENTAL HEALTH PERSONNEL:
 FINAL EVALUATION
 AU: Jones, Dr. R.W.
 SO: UNICEF, Team Misr, WHO, Ministry of Health, UNDP
 IM: 1983, March, Alexandria, Egypt
 PG: 27 pages, (photocopied), 5 tables, 1 figure, 13 annexes
 TL: English

- !DE:! In 1981, this pilot training programme, designed to further the aims of the National Drinking Water Supply and Sanitation Decade (NDWSSD), was developed jointly by the Ministry of Health of the Egyptian Government, WHO, UNICEF and UNDP. A private firm of engineering and management consultants was hired to implement the training programme. Initial activity consisted of a survey of training needs and training facilities. This served as a guide for the development of course curricula and selection of trainees. Training was to be provided for 3 levels of personnel (professional, technical and administrative) and a total of 10 courses were taught (entitled Water Supply, Environmental Health, Human Resources Development, Project Administration, Construction Supervision, Pipe Fitting, Maintenance I and II, Rural Development and Pump Operation).
- !PU:! This evaluation was conducted to evaluate the project and to make recommendations toward possible future activities along the lines of this pilot programme.
- !ME:! The final evaluation was conducted by a consultant, and although the exact methodology was not stated, it is apparent that the design which was adopted was that of an evaluation by objectives—the success of the project determined by it's ability to achieve it's stated objectives. It is assumed that the findings were based on a review of project documents, class rosters, course evaluations and progress reports.
- !FI:! The findings of this evaluation were grouped into 2 groups, an assessment of the project's objectives and an assessment of the project's success at achieving it's proposed outputs. It was noted that the project's objectives were satisfactory, but a slightly more precise rewording was proposed to make them more quantifiable. The assessment of outputs included the following findings: 1) That the training needs survey was subjective in nature, being based upon personal interviews with a limited number of individuals, and that response to a lengthy questionnaire concerning training needs was poor. Nevertheless, the completed questionnaires were used as guidelines for project development. 2) A suitable training centre was not identified during the course of the project. 3) A sampling of training modules raised questions as to the appropriateness of including substantial blocks of time to certain subjects for technical trainees. In addition, the English language development training was found to be too brief and inappropriate to such training courses. 4) The training of trainers was somewhat achieved, even though only about 1% of the original 169 trainees had any explicit training responsibilities associated with their jobs. It was felt that this deficiency was offset by the fact that nearly 75% of the trainees fell into the professional and supervisory categories and could therefore be expected to transfer their newly acquired knowledge to other employees. 5) The objective of providing training for "selected" personnel was not very well achieved. There was a wide variance in educational qualifications which occurred in each

of the courses, as well as in class size. The majority of the courses had trainees from a very limited geographical spread and the selection process was not targeted to the governates which had been designated.

!RE:! The report concluded that there were many positive aspects to the initial Joint Training Project which produced a pilot training programme. These included successful co-operation between the Govt and 3 international agencies. The project was developed using indigenous expertise and the established timetable and budgeting were scrupulously adhered to. The interest stimulated among the trainees was intense, although this was somewhat difficult to appraise objectively. The pilot programme indicated the need for realistic and practical training, complementary and additive to basic academic and/or job acquired knowledge, as well as the need for the provision of more specific basic skills at the secondary school level. It was recommended that Phase II of the programme should be pursued as quickly as possible and that it should be primarily concerned with the selection and establishment of a national training centre. The first choice for such a centre was suggested as the Ministry of Health's Occupational and Environmental Research Centre. Initially, training needs could be handled at the core centre with selected courses presented in local areas through a mobile unit. It was indicated that refinement of the training modules would be needed, and that it was unproductive to include English language training in technical courses. Recommendations were also made for the establishment of a library and for the careful examination and fulfillment of staffing needs. Part of the initial responsibility for the core centre would be to train trainers for subsidiary centres. It was recommended that efforts be made to identify key personnel from other agencies responsible for in-house training, and include them in the training process to mobilize their support. Other suggestions included the raising of initial training targets to 350-400 trainees per year, and the increase of training time by 20% by presenting material 6 days a week rather than 5—permitting course length to be reduced or additional material to be presented. It was recommended that a curriculum expert be hired to review, tighten, and strengthen training modules and that an evaluation methodology should be established to evaluate the success of courses taught.

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!CR: This was very much a "by the books" evaluation design for a training programme—the programme being evaluated on the degree to which it was able to meet it's own documented objectives. This is a useful methodology when adequate effort is put into the setting of specific/operational objectives during the planning phase (a pre-requisite which is often not satisfactorily achieved). The decision to focus on the project's output was reasonable, given that one would not expect significant measureable impact after only one year of implementation. The use of quantitative methods to examine problems such as trainee characteristics, geographical coverage, and class attendance was convincing. The major weakness of this evaluation was that it did not deal adequately with the course content (an oversight quickly brushed aside by noting that most of the course material was in Arabic). This and the fact that the report gives little insight into the management process, make the report somewhat dry. One of the report's conclusions, that the objective of training trainers was substantially achieved in light of the fact that most of the trainees were professionals and would thus pass on their knowledge to other employees, is very questionable.!

40 PROTOTIRS SEARCH OUTPUT 40

KW: EVALUATION/MONITORING, MANPOWER TRAINING, INFRASTRUCTURE DEVELOPMENT,
INTEGRATED/MULTI-DISCIPLINARY, UNICEF/NGO CO-OP (TEAM MISR), UNICEF/UN AGENCY
CO-OP (WHO, UNDP), TRAINING OF TECHNICIANS, TRAINING OF PROFESSIONALS,
TRAINING OF ADMINISTRATORS, TRAINING OF HEALTH PERSONNEL, PILOT PROJECT

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