

PD-ABU-513

PRIMARY EDUCATION DEVELOPMENT PROGRAM
(PED)

QUARTERLY PROGRESS REPORTS 1 and 2

February 15 to March 31, 1990

April 1 to June 30, 1990

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PRIMARY EDUCATION DEVELOPMENT PROGRAM

QUARTERLY PROGRESS REPORTS ONE AND TWO

For the periods January 1* through March 31, 1990
and April 1 through June 30, 1990

OVERVIEW

This report covers activities in both provinces during the first two quarters of the contract period. In general, activities during these two quarters were centered on Program startup activities, mostly planning in nature. A summary of activities to which primary emphasis was given follows. It is followed by more detailed descriptions of the major activities undertaken. The report also discusses outstanding issues and offers recommendations, lists major activities anticipated for the next quarter, and provides a level-of-effort chart.

SUMMARY

Primary emphasis was placed on the following activities:

- Follow-up activities building on the results of the organizational studies conducted in both provinces to re-design their school directorates, creating a Directorate of Elementary Education in NWFP to become operational during 1990/91 and a Directorate of Primary Education in Balochistan to become operational at a later, more suitable time.
- Getting acquainted with the personnel and EMIS plans of Project BRIDGES; with project plans (affecting primary education) of donors other than USAID (UNICEF, Pak-German Bas-Ed, World Bank PEP II, Aga Khan Foundation, USIS, Peace Corps, Asia Foundation, and UNDP); with units in the central MOE in Islamabad (Curriculum Wing, Primary and non-formal Education [PNE]); and with the Department of Planning, Education Section, among others.
- Planning to coordinate PED activities with these plans and projects.
- Designing a study of private primary-school education in Pakistan and, through a competitive process, securing a Pakistan firm to conduct the study.
- Helping to prepare for and participate in the annual program review in each province.
- Designing and planning the first PED workshop to be held in late June.

*PED contract start date: February 15, 1990

- Preliminary planning with the Provincial Primary Education Planning Units for the development of their 1990/91 Annual Work plans.
- Planning a series of three annotated textbook workshops in NWFP.
- Planning the first PED in-country planning retreat (to be held once the team is complete, beginning on June 29).

MAJOR ACTIVITIES

o Human Resources Survey (BRIDGES-UNICEF)

The Human Resources Survey has the major goal of securing information that will help educators develop a comprehensive master plan to increase the supply and distribution of teachers, especially female teachers. Inadequate teacher supply and distribution are constraints to increasing access in both provinces and are perhaps the most severe constraints affecting access in Balochistan.

The survey data will become a part of the EMIS, will feed the development of the teacher supply and training plan, called for in both provinces' Annual Workplans, and will also be a major source of baseline data of use later in helping to determine how effective the Program has been in increasing access and equity. (See the appendix to this report for a copy of the survey design in the NWFP, which differs only slightly from that for Balochistan.)

UNICEF, which funds the survey in Balochistan, will use the results to help schedule its mobile teacher training unit. James W. Hughes, long-term Curriculum and Instructional Materials Specialist for PED, has assisted UNICEF and the Directorate of Education staff in devising the teacher training curriculum.

For PED the two major objectives of the survey are the following:

1. Identify potential candidates for teaching positions in the two provinces, for example, those people, especially females, who have the necessary educational credentials or could attain them if training were provided; retired teachers; teachers who left service to rear a family and are now over the age limit to enter teaching; military personnel; and other professionals who might be interested in teaching.

2. Identify specific village conditions that may affect teacher supply or distribution, for example, proximity to an urban or semi-urban area on a metalled road that would permit busing female teachers to and from the schools. (Frequently urban or semi-urban areas have a surplus of female teachers because they find it difficult or impossible to live in villages.)

The survey began in Balochistan in March. By the end of June it had collected data on more than 1,000 of the approximately 8,000 villages in the province. These data are entered into the R Base EMIS files as soon as they are collected.

Ms. Tahira Kaselbash, a member of the staff of the Additional Director for Primary Education, heads the survey. She and Andrea Rugh (BRIDGES), who is responsible for the overall design, designed the survey and the three pre-tests of the questionnaire, developed instructions for researchers, and designed and scheduled researcher training and data-gathering in the villages.

Survey design and development began in June in NWFP at the invitation of the Secretary of Education. With the assistance of Shah Jehan and Rafiq Khattak, soon to be the head of an EMIS/research cell in the new Directorate of Elementary Education, a survey coordinator was appointed, Ms. Kawsar Naheed. She and Dr. Rugh designed the survey, developed and finalized the questionnaires and researcher instructions, and prepared training plans and schedules.

Richard N. Cowell, the long-term PED Teacher Training Specialist, trained Ms. Kawsar to train researchers for the survey and in the translation and back translation of the questionnaire and researcher instructions. Rafiq Khattak was kept fully informed and participated to the degree his other duties allowed.

o Private Education Study

At the suggestion of USAID/Islamabad, an RFP was designed and issued to a short list of Pakistani consulting firms for a study of private education in Pakistan. The major goal of the study is to provide a descriptive and analytic information base on the status of private primary education in Pakistan to enable the government and USAID to facilitate its growth and to mobilize private and public sector resources to achieve this goal.

The three key elements in the study are as follows:

1. to identify the government rules and regulations that inhibit or promote private education and the regulatory/institutional procedures of enforcement or their lack;
2. to determine the factors contributing to the development of private educational institutions that deliver "quality" education and maintain professional standards; to develop a profile of these institutions in urban, semi-urban, and rural areas of the four provinces; and
3. to collect and analyze the capital and recurrent costs of establishing and maintaining the institutions.

The proposal evaluation committee, consisting of David Sprague and Andra Herriott of USAID; Khadam Hussein of the Ministry of Education; and Wade Robinson, PED Chief of Party, voted to award the contract to National Educational Consultants (Pvt.) Ltd., of Karachi. AED awarded the contract on June 15.

On June 19, Nuzhat Ali, Executive Director, and Anita Ghulam, Study Director, of National Educational Consultants, met with David Sprague, Andra Herriott, Wade Robinson, and Rashid Ahmed, AED consultant member of the study team, to discuss the study design, sampling frame, data collection instruments and methodology, and data analysis. Rashid Ahmed followed up by working with the study team itself on issues of design, sampling, and instrumentation prior to the first meeting of the provincial study coordinators and central staff in Karachi on June 29.

o Directorates of Primary Education

As a major benchmark in the PROAG, both provinces agreed to establish a directorate of primary education. The NWFP agreed to establish their directorate by June 5, 1990. Balochistan agreed to appoint an Additional Director of Primary Education and to work toward establishing a full directorate over a period of a year or two.

In accordance with the Annual Workplans' recommendation for technical assistance to conduct an organizational study of the Directorates, USAID supplied a consultant team for each province.

NWFP

Wade Robinson joined the NWFP team, (Don Foster and Frank Farner) for a week in mid-March, participating in site visits to Education Division and district offices and schools in Abbottabad, Swat, and Peshawar. The purpose of these visits was to gather information from education officials at all levels on school, district, division, and supervision administrative and management problems, particularly at the primary level, that would require special attention were a new Directorate of Primary Education established.

Following submission of the consultants' draft report, the NWFP Secretary of Education appointed a committee of distinguished educators, headed by the former Additional Secretary of Education, now Chairman of the NWFP Textbook Board, to evaluate the report, discuss and analyze the recommendations, and draft a new organizational structure and implementation plan for primary and secondary education in the province.

Robinson met with Mumtaz Akbar, Committee Chairman, and Shah Jehan, Committee Secretary, in late May for a general discussion of the committee's recommendations. Although its report will not be released until after thorough review by provincial officials, part of it was released recommending that a Directorate of Elementary Education be appointed before June 5 and that a Director, Deputy Director and Assistant Directors be established so that the Directorate could start functioning immediately. The recommendation was approved by the Secretary of Education and forwarded to the Chief Minister.

Balochistan

On May 9, Sprague, Robinson, and Jim Hughes met with the Balochistan organizational study team, and Ijaz Malek, Additional Director of Primary Education, to discuss the draft report of their organizational analysis. (An earlier discussion had been held with the Secretary of Finance.)

The Additional Director agreed to recommend the appointment of four deputy director positions as soon as possible and agreed with the recommendation to separate the inspection functions from those of instructional supervision. He also indicated that the Directorate might be able to assume operational control over some aspects of primary education before the end of June 1991.

To date, the Directorate has taken no further action on the report.

- o EMIS (Development of an EMIS is the shared responsibility of PED and BRIDGES.)

In early March, Robinson met with Jorge Valdes and Don Morrison (BRIDGES) to review EMIS plans for the two provinces and coordination of the multi-donor national development effort, chaired by Warren Mellor, UNDP. In April, Robinson had further discussions with Tom Cassidy and Ernesto Quadra (BRIDGES). They agreed to recommend that the system be developed incrementally. (Mellor endorsed the recommendation.) Such an approach would allow the speed and scope of implementation to be determined by progress made and problems encountered and solved in the experimental components before full implementation takes place.

USAID advised that timely, tangible, and immediately useful products should be produced for policy makers lest their strong support for EMIS development lag and development momentum be lost. By May 8, Cassidy produced a working paper and workplan for the EMIS development. With minor revisions, it has become the workplan being followed in the NWFP and Balochistan, for which PED is responsible, and will heavily influence the work in the Sind, Punjab, FATA, Jammu Kashmir, and the Northern Areas, for which the UNDP is responsible. (See the appendix of this report for a copy of the paper.)

The multi-donor agreement stipulates that USAID will support the development in the two western provinces, will purchase computers for the entire country, and will make BRIDGES/PED technical assistance available to the remainder of the country. UNDP will coordinate the development nationwide and provide training for all but NWFP and Balochistan.

A coordinator/director for EMIS development and operations has been identified in NWFP and Balochistan, Rafiq Khattak and Javid Quershi, respectively. Plans (under BRIDGES) are for them to visit Egypt and study the EMIS, now beginning its third year, and to work with Tom LeBlanc and Jorge Valdes at Harvard for a month in July or August 1990 to receive training and prepare work and training plans and schedules in anticipation of the EMIS startup in October with the annual school census. LeBlanc and Valdes are scheduled to return to Pakistan in early September to work with their two counterparts for approximately nine or ten months.

A possible constraint to the EMIS schedule is the length of time required to complete USAID's procurement process. Computers may not be in place in time to enter annual school census data or provide training that must precede data entry.

If computers are not purchased in time, they may possibly be rented or purchased through other agencies or the provincial governments.

o **Coordination with Other Projects, Donors**

Given the large number of educational projects underway or planned that affect primary education in the two provinces, it is imperative for PED to become well-acquainted with their plans and personnel in order to examine the possibility for cross-project coordination. To that end, the following meetings were held:

- With Project BRIDGES staff at Harvard.
- With UNICEF, on the Human Resources Survey in Balochistan, which is proceeding with dispatch and without serious problem;
- With UNICEF's Yasmin Ehsan, Head of Education, and Gunnar Berlin, UNICEF consultant for the Primary Curriculum Reform Project (PCRP). Robinson and Rugh met with Ehsan for one day and with Berlin for three days to help design coordinated research, development, and technical assistance activities between PED and UNICEF during at least the first two years of the PCRP.

As a follow-on activity, Robinson met with Ehsan, Dr. Siyal of the Curriculum Wing, National Coordinator (MOE) for the PCRP, and David Sprague on May 15 to plan next steps. As a result of that meeting, Siyal held a meeting of the Deputy Directors of the Curriculum Bureaus of NWFP, Sind, and the Northern Territories. Robinson and Hughes also attended. Representatives from Jammu Kashmir, Punjab, and Balochistan were unable to attend.

The meeting resulted in a plan to hold a five-day workshop in July to redesign the baseline survey instruments, develop a sampling frame and plan, design a tentative data analysis plan and methodology, and design an observational study to be made of children in their natural activities to serve as one basis upon which to plan curriculum development relevant to village life and to the children for whom it is intended.

The workshop has been postponed until a more suitable date can be found.

As currently planned, PED's curriculum development activities are closely tied to the PCRCP. Should that not develop or be delayed further, PED may have to reconsider and replan its curriculum development activities. If the Curriculum Wing decides that PCRCP is a provincial rather than a national project, each province would then proceed at its own pace.

- * A second cross-project coordination with UNICEF has been accomplished by Jim Hughes in Balochistan. As a follow-on activity to the Human Resource Survey, the Balochistan office of UNICEF plans to develop a mobile teacher training program for those women discovered by the survey to be qualified to enter training but without the opportunity to do so. With the support of the Japanese, the UNICEF office has received a van fully equipped with A/V equipment which can move from village to village, providing short-term intensive teacher training. Jim Hughes has been instrumental in planning the curriculum for the program and providing general advice and assistance to project staff.
 - With the Aga Khan Foundation. On May 2, Sprague and Robinson met with Jeremy Greenland, Jack Schwille, and representatives of the Aga Khan Foundation to learn of their plans to establish an advanced-degree teacher training and research and development program, centered at first in Karachi but with planned outgrowth to the Northern Territories. The program would involve Michigan State University and Oxford University. Also discussed was their plan to continue the successful field-based teacher training program in NWFP, provided they could obtain permission from the Director of Schools -- which had been requested but not yet granted.
 - With USIS, Peace Corps, and the DSTP's English Language Program. At David Sprague's invitation, representatives of the aforementioned projects met on May 2 to describe their English training programs and learn what others were doing.
- Through his relationship with the Textbook Board, Hughes has assisted the Peace Corps in getting its materials for the teaching of English published for wide-scale distribution to teachers in Balochistan.
- With the Pak-German Bas-Ed Project to discuss their development of experimental Pashto language and

mathematics textbooks, supplemental learning materials, and annotated teacher editions of textbooks, and the possibilities of developing a graded vocabulary in Pashto (coincident with a similar development in Urdu) of use in preparing textbooks and other teaching/learning materials.

- With local university educational faculty who might become involved in research, development, and training activities. Sprague, Robinson, and Hughes met with the Education faculty of Balochistan University to explain PED activities, aims, and plans, and to discuss their interest in becoming involved. Hughes has continued the dialogue in the understanding they would welcome more extensive discussion of PED needs in relation to their available time and capability.
- With the World Bank Project, PEP II. The project has been extended, principally to finish building the extra classrooms called for in the original project design. Work on further development of the modules has been halted.

o Annual Program Reviews

- The first annual program reviews were scheduled for June 7 in NWFP and June 12 in Balochistan. In NWFP Robinson met with Shah Jehan and other members of the provincial coordination committee prior to the review to help prepare the necessary documentation and to discuss issues expected to arise. The review itself seemed, in general, to be fully responsive to AID concerns and explained progress made or lack of progress.

- In Balochistan, Hughes worked with Ijaz Malik and the provincial coordination committee to prepare review documentation, to discuss issues of concern, and to prepare Pakistani staff for the review. The review itself however, did not respond fully to AID's concerns, nor did it fully explain the progress that has actually been made.

o Workshop on Improving Teacher Performance: Classroom Effectiveness Studies

This first PED workshop was held from June 24-28 in Abbottabad at the NWFP Curriculum Bureau's Educational Extension Center. Twenty-nine Pakistani primary-school teacher training faculty members attended, one from each of the GCETs in NWFP and the CEEs in Balochistan plus the two Curriculum Bureau and Extension Center officials in charge of teacher education. All the PED team members

but William Darnell (who had not yet arrived in country) also were in attendance.

Andrea Rugh (BRIDGES), with the help of Nick Cowell, designed the workshop and was assisted in its presentation by Cowell and Hughes. The workshop served several purposes. For the newly established Directorate of Elementary Education, it was a chance to formally initiate activities under PED. For the participants, it was an opportunity to become acquainted with teacher trainers from both provinces and to identify those who might carry out future solution-oriented studies affecting the products of their own institutions.

It was also an opportunity for the participants to try a workshop format to see how future workshops might be carried out. The workshop was intended to demonstrate the role of research in solving educational problems of quality and efficiency. Specifically, the participants learned some basic research skills, identified major factors affecting classroom learning that might be influenced by the actions of educators, and learned the results of classroom effectiveness studies conducted by BRIDGES in Pakistan.

In addition, the participants carried out a mini-study of factors which might appear differentially in multi-grade and single grade classes. These factors might prove to be associated with the differences in achievement scores found by BRIDGES to be significantly affected by these two contexts. The participants conducted field research in classrooms with proformas they developed and turned up observable differences in teacher behaviors, student engagement in learning, and uses of instructional time in the two contexts. Their enthusiasm for this fieldwork (expressed later in evaluations) showed evidence of the accomplishment of the final objective of the workshop which was to interest people in such studies and in collaboration in later PED work.

For BRIDGES the workshop provided an opportunity to disseminate the results of the Classroom Teaching Effectiveness Study to primary-school teacher trainers, one of the most important, if not the most important, of the audiences whose activities the results should influence.

o Staff Retreat

The first in-country PED staff retreat was held in SWAT at the Serena Hotel from June 30 through mid-day July 4.

The PED staff, complete with the arrival of Bill Darnell, Team Leader for Quetta, was joined by Andrea Rugh and Jorge Valdes of BRIDGES, and Sarah Tirmazi, USAID's Project Manager.

OUTSTANDING ISSUES, RECOMMENDATIONS

o **NWFP Participant Training.** The Evaluation and Drafting Committee for the reorganization of the Directorate of Education has recommended that the proposed long-term participant training, short-term training and study tours in the U.S. be curtailed and the money transferred to building capacity in the NWFP to conduct the required training. The committee proposes that additional technical assistance be provided to help in building local training capacity. No action has yet been taken on their report but is expected in July or early August 1990. Acceptance of the recommendation by NWFP officials and USAID will require the reallocation of some program funds and changes in the scope of work and level of effort in PED, should that be the instrument USAID chooses to use for the new effort.

o **UNICEF Curriculum Development Project.** The PCRCP seems stalled. As discussed earlier in this report, should the project remain in limbo, as it has for over three years, PED, the provincial education authorities, and USAID will need to rethink and reprogram PED curriculum and instructional materials development activities and aims.

o **Learning Coordinators Training Program.** The NWFP has accepted a proposal by the Peshawar office of UNICEF to fund a training program for learning coordinators. The 1989/90 and 1990/91 Annual Plans for NWFP call for undertaking a Learning Coordinator Effectiveness Study, which NWFP plans to do with PED assistance. If the training is to be effective, its design should follow on the outcomes of the Learning Coordinator Effectiveness Study. Careful coordination with UNICEF is called for.

o **UNICEF Mobile Teacher Training.** To be maximally effective, site selection for UNICEF's mobile teacher training activity in Balochistan, which has already begun, should be based on data from the Human Resource Survey. However, data entry and analysis will not be complete until early September or later because those responsible are being trained for the development of EMIS, particularly the school census. Again, coordination of timing and planning is vital.

MAJOR ACTIVITIES ANTICIPATED FOR THE NEXT QUARTER

(There will undoubtedly be changes in these plans since this report was prepared before provincial Annual Workplans and

implementation schedules were made final.)

o Annual Workplans

- Work with Ijaz Malik, Shah Jehan and their staff to complete development and gain approval of their 1990/91 Annual Workplans by USAID, the provincial Steering Committees, and other provincial authorities. Submit to USAID.
- Develop PED Annual Master Work Plan and submit to provincial Department of Education authorities and USAID for approval.
- Develop individual long-term advisor work plans and submit to provincial Department of Education authorities and USAID for approval.

o Private Education Study

- National Educational Consultants and PED consultant Rashid Ahmad will finish data collection, analysis, and final report by September 30, 1990.

o EMIS

- BRIDGES: begin training EMIS coordinators from Balochistan and NWFP at Harvard in July/August in a small, informal training/planning workshop. Training of field personnel in data collection, data entry, report generation, etc. will begin in both provinces in September (provided that computers are available).
- Complete approval process for school census proformas in both provinces, print, and prepare for distribution.
- With BRIDGES staff Warwick and Cassidy, prepare a planning/administrative report clearly delineating and assigning the roles, responsibilities, and authority of PED, BRIDGES, and the provincial Secretariats in EMIS development, with particular reference to the UNDP and its responsibilities. Submit drafts to USAID, Secretariat officials, and UNDP for review and comment, and final version to USAID and Secretariats for approval.

o Human Resource Survey

- Complete data entry and initial analysis of Human Resource Study, Phases I and II, in Balochistan. Decide on whether to proceed with Phase III (small, remote, hard-to-reach villages).

- Supply appropriate data set to UNICEF and Directorate of Education authorities for use with the Mobile Teacher Training Project.

- Prepare and test a demonstration of the utility of the Human Resource Study data file for use with USAID and education officials.

- Complete the training of data gatherers, supervisors; begin data collection, entry, and data analysis of Phase I villages in the NWFP.

- Correlate study data with school location, school mapping, and school construction planning.

- Set up the Human Resource Study data file in the EMIS.

- Examine the possibility of the use of the data file as one base line for formative evaluation of progress in school construction.

o Improving Teacher Performance

- In NWFP, begin study design, Pakistani counterpart selection, and instrument development for an assessment of PTC training.

- In NWFP, begin to design study, select counterparts, and begin instrument development for a study of multi-grade teaching.

- In Balochistan, begin collection of data from secondary sources, discussions with education officials, teacher trainers, for a teacher supply and training plan.

- In NWFP, begin collection of data from secondary sources, discussions with education officials, UNICEF on the development of a supervisory and learning coordinator effectiveness plan.

o Improving Curriculum Development

- In Balochistan, continue the organizational analysis of the Curriculum Bureau.

- In NWFP, begin the organizational analysis of the Curriculum Bureau.

- In both provinces, continue coordination with Peace Corps in English language materials development and teacher training.

- Begin the design of the contrastive linguistics analysis in Urdu, Baloch, Brahui, and Pashto in concert with plans to develop a graded vocabulary in Urdu and Pashto.

- Develop and submit a working paper to UNICEF on the redesign of the PCRP.

- o **Improving the Capacity to Produce Quality Instructional Materials**

- In NWFP conduct workshop on annotated teacher editions of textbooks for editors, textbook writers, and curriculum developers to improve skills in editing and writing with special emphasis on the development of annotated editions. The workshop will be open to the curriculum development staff of the Pak-German Bas-Ed Project and for Balochistan Textbook Board staff, if their duties permit them to attend.

- Continue the organizational study of the Textbook Board in Balochistan.

- Begin computer training of Textbook Board staff in Balochistan.

- Continue the development of study in Balochistan on determining the potential "longevity" of textbooks at various grade levels and school sites.

- o **School Construction**

- In Balochistan, develop criteria for school location, review school designs, select alternatives, and prepare an initial list of school rehabilitation and construction schemes.

LEVEL OF EFFORT

The estimated total level of effort for the performance of the base period of the contract (February 1990 - February 1993) is 993 person-months. Exhibit 1 indicates the level of effort provided to date.

The following personnel provided contract services during this reporting period:

Long-term Advisors

Admn/Planner/Team Leader	<u>Peshawar</u> Wade Robinson	<u>Quetta</u> William Darnell
Tchr. Trng. Specialist	Richard Cowell	Pat Emerson
Curriculum Development/ ISD Specialist	Mona Habib	James Hughes

Home Office

Project Coordinator	Barbara O'Grady
Admn/Financial Officer	Linda Rupard
Secretary	Atsuko Kitagawa

Short-term Consultants

Private Education Study	Rashid Ahmad
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PRIMARY EDUCATION PROJECT

Exhibit 1
Level of Effort

	Year 1 1990												Year 2 1991						
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Long-term Advisors																			
Admin./Planner/Team Leader																			
Quetta (36 p.m)	-----																		
Balochistan (36 p.m)	-----																		
Teacher Training Specialist																			
Quetta (36 p.m)	-----																		
Balochistan (36 p.m)	-----																		
Curriculum Development/Specialist																			
Quetta (36 p.m)	-----																		
Balochistan (36 p.m)	-----																		
Home Office																			
Project Coordinator (12 p.m)	-----																(1.8 p.m)		
Admn/Financial Officer (12 p.m)	-----																(2.2 p.m)		
Secretary (12 p.m)	-----																(.5 p.m)		
Short-term Consultants																			
EMIS - Admn. & Mgmt. (10 p.m)	-----																		
Inservice Tchr. Trng. (11 p.m)	-----																		
Preservice Tchr. Trng. (9 p.m)	-----																		
Dist. Ed. Tchr. Trng. (9 p.m)	-----																		
R&D Spec. - Tchr. Trng. (9 p.m)	-----																		
R&D Specialist - Instruction & Materials (9 p.m)	-----																		
Other																			
Private Ed. Study Rashid Ahmad	-----																		

APPENDICES

APPENDIX A
HUMAN RESOURCE SURVEY DESIGN

HUMAN RESOURCE SURVEY:
Teacher Supply and Distribution

SURVEY DESIGN

Overall goal: To increase the supply and improve the distribution of teachers, especially female teachers, in the province of NWFP in order to facilitate a major expansion in primary education.

Survey objectives:

1. To identify potential candidates for teaching positions in rural NWFP for present and future needs;
2. To identify specific conditions affecting teacher supply in individual communities.

Scope:

In NWFP as a whole there are over 8000 villages. The survey will eventually reach most of these villages. However, because information will be most useful when it is current and because it will take time to solve the problems of teacher supply, the survey will be carried out in a phased design that provides information in as timely a way as possible.

The objective of the primary expansion program is to increase enrollments as rapidly as possible. Therefore, first priority in the survey will be given to the areas where demand for girls education is reasonably high and the teacher supply is keeping enrollments artificially low. Later phases will successively survey areas where demand for education is less and teacher supply problems are more difficult.

For the purposes of the survey, NWFP has been divided roughly into four types of district based on variations in demand for girls' education and the seriousness of the teacher supply problem:

1. District Peshawar: demand for girls' education is generally high and teachers are available. This district will not be surveyed until other areas are completed.

2. Districts which have comparatively high demand for girls' education but where problems of teacher supply still exist in some villages. These districts will be surveyed first.

Charsada, Mardan, Swabi, Abbotabad, Nowshera, Kohat

3. Districts where there is recent demand for girls'

education ↙

in many villages but where teacher supply is a problem. These districts will be surveyed second.

Mansehra, Karak, Bannu, D.I.Khan

4. Districts where there is little demand for girls' education and teacher supply is a serious problem. These districts will be surveyed to start planning for the long term needs of developing a pool of qualified teacher candidates. These districts will be surveyed third.

Kohistan, Chitral, Dir, Swat, Malakand

In each district, villages will also be surveyed in phases based on criteria of accessibility to urban areas and amenability to solutions of teacher supply:

1. Urban, defined as municipal areas where there are populations of 5000 or more. It is assumed that most of these populated areas have adequate female teachers and therefore these areas will not be surveyed.
2. Semi-urban, defined as areas of settlement within reasonably easy commute of an urban area (one hour by car). Of rural areas, these are assumed to be the most amenable to solutions (such as busing) for problems of female teacher supply. These will be the first to survey.
3. Rural, defined as areas with longer commute to urban areas (more than one hour but still accessible). More creative and varied initiatives may be needed in these areas to solve the teacher supply problems. These will be the second to survey.
4. Far-flung areas which are difficult of access. These areas may require alternative modes of delivering education, because of the distances involved and the small size of populations. A decision will be taken later whether to survey these areas.

The phases of the survey will be conducted as follows:

Phase I: semi-urban areas will be surveyed in districts in the order of priority noted above from roughly July to September 1990.

Phase II: the next tier of rural communities will be surveyed from roughly September to December 1990.

Phase III: the final remote villages in far-flung areas can be surveyed from January to April 1991 if it is decided that

this will be useful.

In the first two phases, villages will usually only be surveyed if they have a population of 200 or more. This would assume a minimum primary school age population of roughly 50 children in a population of 200. Before the third phase, an assessment will be made of the magnitude of needs in the semi-urban and rural sites, and a decision will be made whether to survey the remaining villages immediately or wait until such time as attention can be focused on the special needs of these areas. When it is decided to go ahead with the third phase, far-flung villages and smaller villages in semi-urban and rural areas will be surveyed where there exists a minimum of 20 primary school age children. Villages smaller than this will not be surveyed in these three phases.

Method:

The HRS will be directed by a Peshawar-based Survey Coordinator (SC) who will take responsibility for the design, preparation of questionnaires, selection of sample, training of local supervisors and researchers, accuracy and completion of the questionnaires, dissemination and collection of the questionnaires, and liaison with computer personnel who will input the data. The SC will also prepare a descriptive report of the findings of the survey. The SC will be assisted in the survey design, the preparation and testing of the questionnaire, development of the schedule and training plans and the preparation of the research report by a consultant provided by the USAID funded BRIDGES Project.

The Survey Coordinator will travel to district education offices to train local supervisors and researchers. Local supervisors may be chosen from supervisory staff of education offices in urban areas near to the semi-urban areas which will be surveyed in Phase I. Researchers will be nominated by these supervisors from teachers or others on the basis of their personal abilities to carry out the work accurately and within the time limits set.

The local supervisor will participate in the training with the Survey Coordinator, make work assignments to the local researchers, subject to the approval of the Survey Coordinator, distribute questionnaires and collect completed questionnaires, and check the accuracy and the recording of the information. The supervisor will personally verify that information was collected at ten percent of the sample sites. This work may be carried out after the regular working hours. Each supervisor will receive an honorarium of 500 Rs for each phase, plus 10 Rs. for every questionnaire returned in proper form. If the supervisor proves effective in the first phase, he will be reappointed to the second and third phases.

Researchers will be assigned a list of villages and given a time frame in which to complete questionnaires for each village. They must go to each of these villages, interview a responsible member of the community (local teacher, articulate community member, or other responsible person) and fill out the questionnaire themselves with the answers provided by the local person. They will return the filled-in questionnaires to the supervisor who will check each item to make sure that all the proper procedures have been followed. The researcher will receive a base pay of 50 Rs. for each completed form. From that total there will be 1 Rupee deducted for every mistake in accuracy, missing data, and format. Each perfect questionnaire will receive a bonus of 5 Rs. If it is discovered by the supervisor that the researcher did not conduct the interview or that the information is in some way falsified, then the researcher will not be paid for that questionnaire at all. The final decision in the matter of the amount to be paid for each questionnaire rests with the supervisor. Under 10 km. from his/her home, the researcher is responsible for his/her own transport; over 10 km. there will be the usual TA provided, subject to normal government rules. It is expected that because of the nature of the community based information that it can be carried out after school hours or on the weekend without disturbing the usual work of the researchers. Assignments should be distributed in such a way that no researcher has to interrupt his/her usual work to do the survey work.

Completed questionnaires will be returned to the local supervisors who will forward them to the Survey Coordinator in Peshawar (Office of the Directorate of Primary Education). Data will be fed into the computer in the newly installed EMIS system, either through the procedures and personnel set up for the purpose, or if these are not ready through a private outside contract.

Costs: The following are the anticipated costs for the survey:

Costs for 1990: First two phases for semi-urban and rural areas

Item	No. of units	Unit cost Rs.	Total Rs.
Survey Coordinator (for extra work)	10 mo.	500.00	5,000
TA/DA	60 da.	110.00	6,600
Honorariums (for 2 phases) (supervisors)	30	1000.00	30,000
Checking accuracy	6000	10.00	60,000
Collecting information (researchers)	6000	55.00	396,000

TA (for costs beyond 10 kms)	4000	25.00	100,000
Training costs			
TA/DA	400	60.00	24,000
other	20	500.00	10,000
Photocopying (questionnaires)	6000	15.00	90,000
Computer (imputing)	6000*	2.00	12,000
Report	50	50.00	2,500
Consultant (USAID)	0	0.00	0
TOTAL (for Phase One and Two) (Conversion rate \$1.00 = Rs.20.3)			Rs.736,100 \$36,261

* 200 characters per unit

Costs for 1991: Third Phase for Far-Flung Areas

Item	No. of units	Unit cost	Total
		Rs.	Rs.
Survey Coordinator (for extra work)	6 mo.	500.00	3,000
DA	20 da.	110.00	22,000
Honorariums (for 2 phases) (supervisors)	30	500.00	15,000
Checking accuracy	2000	10.00	20,000
Collecting information (researchers)	2000	55.00	110,000
TA (for costs beyond 10 kms)	2000	25.00	50,000
Photocopying (questionnaires)	2000	25.00	50,000
Computer (imputing)	2000*	2.00	4,000
Report	50	50.00	2,500
Consultant (USAID)	0	0.00	0

TOTAL (Phase Three)
(Conversion rate \$1.00 = Rs.20.3)

Rs.276,500
\$13,620

GRAND TOTAL FOR SURVEY

Rs.1,012,600
\$49,882

* 200 characters per unit

APPENDIX B

A Workplan Plan for the Establishment of
An Educational Management Information System
in NWFP and Balochistan

A WORKPLAN PLAN FOR THE ESTABLISHMENT OF
AN EDUCATION MANAGEMENT INFORMATION SYSTEM
IN NWFP AND BALOCHISTAN
UNDER THE
PRIMARY EDUCATION DEVELOPMENT PROGRAM (PED)
USAID

[A working paper]

Tom Cassidy
Project BRIDGES
Harvard Institute for International Development

May 8, 1990

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INTRODUCTION

This paper proposes a workplan for the development of provincial level EMIS in Balochistan and NWFP. The proposed plan differs most significantly from other documents in suggesting that a commitment to the placement of computers in each district be delayed: (i) to permit a resolution of outstanding organizational and cultural issues, (ii) to provide time to train PED provincial EMIS counterparts and formulate a coordinated EMIS plan with them; (iii) to permit an assessment of realistic levels of effort and resources required to implement a district-based EMIS, and (iv) to permit the building of a coalition of support for EMIS development among those already working in the education system and who may be critical to successful implementation. In principle, I agree with the idea of district-based EMIS, but local realities force me to suggest a more conservative, and I think, practical approach.

I recommend a phased approach to implementation covering the period May 1990 to September 1993 as follows:

Phase I (5/90-9/91)

Counterpart training, establishment of provincial level EMIS cells, training, initial development and testing of system components, analysis of the feasibility of district-based EMIS, and assessment of future training requirements.

During Phase I, EMIS cells will be established in three pilot districts and three provincial education offices in each province. At the provincial level EMIS cells will be established in the Additional Directorate/ Directorate of Primary Schools, the Directorate of Schools, and the attached to the planning cell in the Secretariat.

Phase II (10/91-9/92)

Focus on applications development and data utilization, training, system refinement, and system installation and operationalization in additional selected district and provincial offices.

Phase III (10/92-9/93)

System installation and operationalization in remaining identified district and provincial offices; continuing applications development, training, and evaluation and recommendations for future activities.

ASSUMPTIONS AND PRINCIPLES GUIDING THE PROPOSED PLAN

1. As currently proposed, separate administrative authorities will be set up in both provinces to manage primary education. In Balochistan this will be the Additional Directorate of Primary Education; in NWFP, the Directorate for Primary Education.
2. The objective for the development of an EMIS is improved management, planning, policy analysis, and decision-making capabilities within relevant education offices at the district, provincial, and federal levels.
3. An EMIS is more than simply a data collection, storage, and maintenance system. EMIS efforts should be judged on the extent to which dissemination of data/information is broad and the data/information is used. EMIS development activities must give explicit attention to dissemination and utilization activities.
4. EMIS should be structured, when possible, in ways that assist administrative staff in the performance of routine operations, but this is not its primary objective.
5. EMIS should provide a capability to monitor progress toward the attainment of objectives outlined in current Government of Pakistan development plans and of objectives set for the Primary Education Program (PED), i.e., increased access, improved efficiency, improved quality, and the equitable distribution of educational opportunity and resources throughout Pakistan.
6. The PED EMIS must provide data on all elementary schools (primary & middle) operating under all authorities in each province.
7. Support should be provided to the directorate of schools and provincial secretariat for the establishment of a more comprehensive province-wide EMIS.
8. Care must be taken to insure that the PED EMIS is structured so as to maximize potential for compatibility with province and national level EMIS efforts while at the same time insuring that regional differences are respected.
9. EMIS activities should be located within the formal educational system and within an existing line organization.
10. Data and processing requirements vary by level and function. Functional units should be provided with data sets which are as complete as necessary for use at their respective levels in the organizational structure.

11. The EMIS should provide as broad a range of data as it is practical and possible to gather on student enrollment, student achievement, education personnel, facilities, and costs. Additional types of information, e.g., on population or the results of research, should be integrated in EMIS at appropriate levels.
12. EMIS design and development efforts should involve close collaboration with Pakistani counterparts during all phases.
13. Maintenance of all equipment will be through contracted maintenance agreements with local vendors, preferably in Balochistan and NWFP.

EXPECTED OUTCOMES OF PHASE I

PHASE I Counterpart training, establishment of provincial level EMIS cells, training, initial development and testing of system components, analysis of the feasibility of district-based EMIS, and assessment of future training requirements.

The expected outcomes of Phase I are:

- (1) counterpart directorate and secretariat staff capable of assuming increasingly greater responsibilities for the implementation of the EMIS;
- (2) broad based support for EMIS activities in selected provisional, divisional, and district education offices;
- (3) a computer training laboratory located in the directorate of primary education in each province;
- (4) an EMIS cell in the primary/education directorate in each province;
- (5) the establishment of an EMIS cell in the directorate of school in each province;
- (6) an EMIS cell in the secretariat in each province;
- (7) EMIS cells in three pilot districts in each province;
- (8) a computer-based school level database containing basic education data for all public elementary schools, e.g., enrollments, personnel, facilities, achievement, and costs;
- (9) an improved centrally printed proforma for use in the collection of school level data on students, achievement, personnel, facilities, and costs.
- (10) the identification of sources of data and a plan for collecting data from schools operating under other authorities in each province, e.g., private sectarian and non-sectarian schools, railroad schools, military schools; and the negotiation of access to this data;
- (11) senior level education managers in the directorate(s) and secretariat who understand what an EMIS is and its potential utility in educational management, planning, policy analysis, research, and decision making.

- (12) an assessment of threats to the quality of data in the current system and a detailed plan for minimizing threats to data quality in the proposed system;
- (13) an assessment of further training needs of the staff from EMIS activity cells at the district, divisional, and provincial levels and staff from selected functional units at each level;
- (14) a plan for insuring the equitable distribution of EMIS resources across both the male and female streams; and
- (15) a detailed plan for Phase II, October 1991 to September 1992, and a general plan for Phase III, October 1992 to September 1993.

DETAIL ON PHASE I ACTIVITIES

1. Training of counterpart staff to enable them to assume increasingly greater responsibilities for the implementation of the EMIS;

- a. Training for PED/directorate EMIS coordinators, including:

Principles and elements of EMIS design.
Understanding threats to the quality of data.
Computer-based decision support in education.
General computer literacy.
Relational database design, development and use.

This training could be provided in-country but it might be advisable to combine training with a study visit to another country. Training could then be provided in the host country. This could be in the US but it might also be possible, as well as more interesting and relevant, to coordinate this training with BRIDGES efforts to develop district-based EMIS currently underway in Egypt. This training should be for three to four weeks, no less than two weeks.

- b. Training for EMIS personnel in the primary directorate, directorate of schools, and secretariat of each province.

Training would be as above for PED coordinators but greater attention would be given to technical skill development.

Training in-country, using PEDs own training facilities (see 3, below) or in Islamabad using the facilities of the Academy for Educational Planning and Management. Training would be conducted by the HIID staff and consultants assisted by AEPAM staff. EMIS staff from both provinces could be trained together. This training should be no less than one month.

- c. Regular, perhaps monthly, seminars on EMIS issues as they evolve. All persons involved in EMIS design and development in the directorate and secretariat would be invited. These could be coordinated by the PED/directorate EMIS coordinator and/or HIIDs longterm EMIS consultants.

2. The establishment of a broad base of support in selected provisional, divisional, and district education offices.

This "activity" really speaks more to how EMIS work should be conducted. The success of EMIS will depend in large part on the degree of cooperation received from data providers and data users alike. Care must be taken to keep various individuals and functional units involved; their opinions should be solicited routinely and they should be kept informed of EMIS activities on a regular basis. The importance of this idea should be underscored. The PED/directorate EMIS coordinator is directly responsible for this.

3. The establishment of a computer training laboratory and support facility located in the directorate of primary education.

Computer training will be a major component of the phases of EMIS design and development. Initial training will focus on the development of databases, computerized proformas, and standardized reports. Training in the utilization of data in planning, policy analysis, and decision making will be emphasized in later stages. Research activities are a major part of PED activities - a rural settlements survey has already begun. School mapping is proposed. No adequate facilities exist in Quetta or Peshawar that could support the type and volume of computer training and related work proposed under PED. Already, researchers have had to contract with other donor agency projects for computer support, and the project is just beginning.

This facility would require 10 computers, 6 printers (one laser printer), an overhead projection unit, desks, tables, etc. The laboratory could be set up for demonstration purposes to simulate a fully functioning EMIS, a concept few understand but which could be easily demonstrated in this way. When not being used for training the unit could be used by and/or provide support to other PED researchers and planners.

Although located in the directorate of primary education this facility would be used in the service all EMIS training activities.

4. The establishment of an EMIS cell in the primary education directorate.

The primary education directorate EMIS will be responsible for the development and regular updating, printing, and distribution of all proformas for use in collection of data from primary schools. The unit will work closely with the secretariat EMIS cell to insure that proformas are consistent with designs for province and national EMIS. The unit will

also be responsible for the design and development of database applications including the development of computer-based data entry screens and standardized reports which will form the basis for district level EMIS activities. Additionally this unit will provide regular and on-request assistance to district EMIS staff.

The cell will be responsible for consolidating data on primary schools for all districts, the generation of initial education indicators, basic data analysis, the development and publication of annual statistical reports, and the distribution of reports and complete sets of computer-based education data.

The unit will be staffed by five persons: a director, two assistants, and two field support staff.

Will require training for staff as outlined in section 1, above, as well as the purchase and installation of three computers, two printers (one laser), a power stabilizer, a UPS, and possibly air conditioning. Regular support will also be required from PED EMIS consultants.

5. The establishment of an EMIS cell in the directorate of schools in each province.

The directorate of schools EMIS will be responsible for the development and regular updating, printing, and distribution of all proformas for use in collection of data from all secondary and higher secondary schools. The unit will work closely with the secretariat EMIS cell to insure that proformas are consistent with designs for province and national EMIS.

The directorate EMIS cell will be responsible for data entry for all secondary and higher secondary schools in the province, the generation of initial education indicators, basic data analysis, the development and publication of annual statistical reports, the distribution of reports, and the distribution of complete sets of computer-based education data to relevant offices.

The unit will be staffed by five persons: a director, an assistant, two data entry people and a field support person.

Will require training for staff as outlined in section 1, above, as well as the purchase and installation of two computers, two printers, a power stabilizer, a UPS, and possibly air conditioning. Regular support will also be required from PED EMIS consultants.

6. The establishment of an EMIS cell in the secretariat in each province.

The secretariat EMIS cell will be responsible for consolidating data for all stages and types of schools for the entire province, the generation of education indicators, basic data analysis, the development and publication of annual statistical reports, the distribution of reports, and the distribution of complete sets of computer-based education data to relevant planning offices in the secretariat, provincial ministry, and federal education authorities.

This cell will receive and consolidate data from the directorate of schools for all public secondary and higher secondary schools and from the additional directorate for all public primary schools. Additionally, this cell will also be responsible for collecting and consolidating data for all schools operating under other authorities: private schools, railroad schools, and military schools.

The cell will be staffed by three people: a director, an assistant, and field support person.

This cell would be attached to the Office of Deputy Secretary of Education-Development in Balochistan; to the Secretariat Planning Cell in NWFP.

Training will be required as outlined in section 1b and 1c, above. Also required: the purchase and installation of one computer, two printers (one a laser printer), a power stabilizer, a UPS, and possibly air conditioning. Regular support will also be required from PED EMIS consultants.

7. EMIS cells in three pilot districts in each province;

Directorate EMIS cells will be responsible for the distribution, collection, and entry of proformas for all primary schools in the district. They would also be responsible for printing standardized district level reports and distributing complete sets of computer-based data to relevant provincial level offices.

These cells would be located on the male side of the district education structure in NWFP but would be responsible for the data entry and the generation of standardized reports for the female side. There is no parallel female district structure in Balochistan. Data for female primary schools will be entered at the directorate level.

Three people will be needed in each district: a director and two assistants/data entry people.

Requires minimally the installation of a computer, a printer, a power stabilizer, and an uninterrupted power supply (UPS) in each pilot district. May also require the installation of air conditioning. Suitable space must be provided by the district office.

Training will have to be provided that includes an introduction to computers and the use of predefined computer applications.

8. Design and development of a computer-based school level database for all public schools containing basic education data, i.e., enrollments, facilities, and personnel.

This activity is considered vitally important. Properly conducted it will provide baseline data for assessing PED impacts on education in each province. It will also provide the basis for the development of locally focused materials for use in workshops focused on data utilization in management, planning, and decision making.

This activity will be the responsibility of the PED EMIS coordinator working closely with HIID consultants.

Existing proformas will be updated and improved and printed centrally, which is not current practice. Proformas will be in multiple copies: one remains at the school, one stays with the DEO for him/her to use in the normal manner, one will be passed directly to the EMIS cell in the directorate or additional directorate of primary schools. DEOs, SDEOs, and, in Balochistan, female divisional education officers will be trained in their use and made responsible for distribution and collection of the proformas. Data will be entered at the provincial level using 10-12 temporary data entry staff who will be hired for a period of four weeks. They will be trained in data entry using a predefined computer-based proforma exactly like the paper-based proforma. Data entry could be done using the computers in the computer laboratory.

This is an ambitious undertaking but of critical importance. BRIDGES experience in the Sindh and in other countries has been that nothing does more to focus attention on EMIS and issues of data quality and data utilization than a database of local education data. Given the importance of this activity a detailed outline of related activities is provided to assist local personnel with the organization of this task in section 9, below.

9. Development of an improved centrally printed proforma for use in the collection of school level data on students, achievement, personnel, facilities, and costs.

Detail of activities for development of a new education proforma and initial database development:

- a. Design and development of an improved annual schools census proforma. (May-June)
- b. Negotiation of the use of this proforma in place of existing proforma. (May-June)
- c. Development of a code book and instructions for use of the new proforma. (June/July)
- d. Translation of the proforma into Urdu. (August)
- e. Type setting and printing of the proforma. (Sept)
- f. Development of database and computer-based proformas, and initial data reports. (Sept)
- g. Demonstration and training for DEOs, SDEOs, and female division education officers. (early Oct) *Not? pay centers in change*
- h. Distribution of the proforma through DEOs using existing structures. (Oct)
- i. Data entry on proforma. (Oct 31)
- j. Collection of copies of completed proformas by DEOs, SDEOs and female education officers. (Nov)
- k. Followup meeting with DEOs, SDEOs, and female education officers to gather all forms and discuss the data collection experience. (early Dec)
- l. Followup unreturned proformas. (Dec)
- m. Locate and make arrangement for hiring temporary data entry personnel. (Oct-Dec)
- n. Computer data entry at the provincial level. (Jan)
- o. Data checking, computer validation, and followup significant errors.
- p. Prepare and distribute complete database to principal users.

9. The identification of sources of data for schools operating under other authorities, e.g., private sectarian and non-sectarian schools, railroad schools, military schools.

A thorough picture of the state of education in each province will depend on the gathering of complete data on all stages and type of education. If administrative responsibility for primary schools remains in the Directorate of Schools the collection of data on other stages (secondary and higher secondary) could be accomplished more easily than is outlined above. If on the other hand primary/elementary schools are placed under the jurisdiction of a new authority, as proposed, the appropriate location for the convergence of data on all stages and types of schools, as defined by existing organizational culture and practice, is the secretariat MIS cell. Whichever happens one or another cell will be responsible for making all arrangements to secure necessary data from the appropriate authorities and/or to develop a plan for collecting data directly from schools should it be found not to be readily available from other sources. This may not be as difficult as it at first seemed it would be. There are very few military and railroad schools. Most of the private schools are found in the larger urban areas. In Balochistan most of the estimated 200 private schools are located in Quetta.

The director of the secretariat EMIS working with the resident EMIS consultant will be responsible for insuring that data on all schools is accounted for in the provincial EMIS, one way or another.

10. Training and demonstrations for senior level education managers and planners in the directorate(s) and secretariat.

A properly structured and reliable EMIS should lead to better management, planning, policy analysis, research, and decision making, but only if it is used for more than the routine generation of standardized reports. Training and demonstrations for senior level people would be focused on introducing them to the use of an education management in terms of the opportunities it presents for asking and answering different types of questions. Training and demonstrations would take place following the completion of province wide databases as outlined above. An objective of these workshops would be the identification of meaningful applications of the data and the identification of ways to make the EMIS more responsive to the needs of management in later phases.

11. An assessment of the threats to the quality of data in the current system and a detailed plan for minimizing threats to data quality in the proposed system.

Improving the quality of data available to decision makers requires a thorough understanding of existing and potential threats to the quality of data. Once threats are identified, better collection instruments and manual and computer-based data checking and validation procedures can be developed to reduce the threats to data quality.

An EMIS consultant will be responsible for this assessment which would be conducted in such a way as to provide training to EMIS staff at each level on ways to identify and deal with threats to the quality of data. The results of this assessment would be reported in written form and presented in an EMIS training seminar.

12. An assessment of further training needs of the staff from EMIS cells at the district, divisional, and provincial levels and staff from selected functional units at each level.

On going assessment by EMIS consultants in consultation with EMIS cell directors, other EMIS staff, and education leaders.

13. A plan for insuring the equitable distribution of EMIS resources across both the male and female streams.

The division of education into male and female streams will pose a dilemma for EMIS development when focus shifts from data collection to issues of data utilization. Data collection is relatively straight forward. A single EMIS cell could serve both sides equally well. Data utilization is a less innocent activity. In a very real sense not having direct access to a computer could seriously disadvantage the female side, a basic contradiction to the stated goals of the GOP and the PED. For example as the male side becomes increasingly sophisticated in using the computer it could gain a significant advantage in the preparation and presentation of ADP schemes, the basis for much of education development in Pakistan. At this time, I lean toward being prepared to supply computers equally to the female side.

14. A detailed plan for Phases II and III, October 1991 to September 1992.

This will involve an assessment of all Phase I activities to determine required future levels of effort. Visits will be made to all districts in each province to assess the feasibility of putting computers in each district. [Visits have already been made to over half of the districts in each province by BRIDGES EMIS consultants.]

HUMAN RESOURCE REQUIREMENTS

The proposed work plan outlined here is based on the understanding that two long term (9 month) EMIS consultants will be contracted beginning September 1990. One will work in NWFP and one in Balochistan. Shortterm consultants will be used to advise EMIS efforts and provide training, both in Pakistan and abroad. Additionally, the plan assumes that local EMIS staff will be identified and in place soon, certainly before September 1990. In NWFP the director of EMIS of the new Primary Education Directorate is in place but no one else is. In Balochistan, the director of EMIS has not been identified as yet, but some very good people are available who could move quickly to fill some of the EMIS positions.

Efforts should be made to hire people who are team players willing to crossover formal job titles and descriptions from time to time to get things done. EMIS consultants and the director of the PED EMIS cell should take explicit actions that encourage cooperation among the various EMIS cells at the Provincial level.

Staffing Patterns (by province)

[Note: An effort was made to keep titles and BPS grades consistent with existing civil service guidelines. Some adjustment may be required, but I would argue that the directors of EMIS cells must be assigned at a grade of BPS-18 grade on the basis that the success of information system development is often tied to the status of the information unit director. Status in Pakistan is closely linked with civil service grades.]

In the Directorate (NWFP) or Additional Directorate (Balochistan) of Primary Education

- One Deputy Director of EMIS (BPS-18)
- Two Assistant Directors for EMIS (BPS-17)
- Two Computer Assistants (Field Support) (BPS-16)

- One Deputy Director of the Training Center (BPS-17)

- Ten temporary office assistants for data entry (??)

In the Directorate of Schools

- One Deputy Director of EMIS (BPS-18)
- One Assistant Director for EMIS (BPS-17)
- One Computer Assistant (Field Support plus) (BPS-16)
- Two Data Entry Operators (BPS-14)

In the Secretariat

One Deputy Director of EMIS (BPS-18)
One Computer Assistant (Field Support plus) (BPS-16)
One Data Entry Operator (BPS-14)

In Each District Education Office

One Assistant Director for EMIS (BPS-16)
One Data Entry Operator (BPS-14)
One Office Assistant (BPS-11)

Job Descriptions (parts are adapted from Morrison, 4/9/90)

Longterm EMIS Consultants

Two people; one assigned to NWFP and One to Balochistan. Responsible for overall coordination with PED EMIS director. Provide in-country training. Assist coordination of other training. Direct support for Directorate of Schools and Secretariat EMIS cells including database, proforma, and report development. Ongoing assessment of future training needs. Analysis of feasibility of establishing EMIS in all districts.

Short term EMIS Consultants

Advise long term EMIS consultants and local EMIS staff re overall EMIS design and development. Training, particularly with regard to computer-aided planning, analysis, and decision making. Training both in Pakistan and abroad, possibly including the organization of short study tours to meet with education officials in other countries working on EMIS development.

Deputy Directors of EMIS cells BPS-18.

One each in the Primary Education Directorate, Directorate of Schools, and Secretariat. Three in each province. Total of six across both provinces.

Responsible for the management of the Cell and the direction of the efforts of the staff. The job would be to supervise and lead the development of database applications in the province both with respect to applications at the provincial level as well as at the district level. This person would work on the development of proforma and report formats and production of annual statistical reports. A large part of the job will be maintaining working relationships with the heads of planning units in the directorate and secretariat.

This person will be responsible for insuring that maintenance agreements for all equipment in the Directorate of Primary Education and all districts is kept current and that all warranty and maintenance agreements are honored, if needed.

These people should be experienced computer users with a broad understanding of information development and utilization. Experience in data collection, database design, and statistics is desirable. A background in science or mathematics is desirable. It would be preferable to have someone with knowledge of educational systems and/or educational planning. As required by GOP for this grade, they must have an MS degree from a foreign institution or an MS, plus experience and/or additional specialized training if degree is from a Pakistani institution.

Assistant Directors for EMIS BPS-17

Two in the primary education directorate. One each in the directorate of Schools and the Secretariat. Four in each province. Total of eight across both provinces.

At the province level these people would work closely with the director to operationalize database and application designs. They would be responsible for day-to-day computer-based development activities. They will be responsible for arranging for regular and "crisis" maintenance of equipment in their EMIS cell.

At the district level their responsibilities will be more varied. They will be computer/information system generalists responsible for all aspects of data collection and data entry. They will be responsible for maintaining the data in good order and also maintaining all equipment.

These people should be experienced computer users with significant hands-on experience in database design and development. A background in science or mathematics is desirable. Experience with computer programming would be helpful. It would be preferable to have someone with knowledge of educational systems and/or educational planning. As required by GOP for this grade, they must have either an MA or MS degree in physics, statistics, mathematics, or economics and three years of computer experience, or a BA degree and five years experience working with computers.

Assistant Director of the Computer Training/Support Center BPS-16

One in each province.

Responsible for the management of the Computer Training/Support Center; scheduling usage, maintaining equipment, keeping materials stocked, etc.

This primarily a management/coordination job, but familiarity with computers and educational planning and research would be useful. As required by GOP for position of this rank, a BA degree and related experience is required.

EMIS Computer Assistants (Field Support), BPS-16.

Two in the primary education directorate of each province. One each in the Directorate of Schools and the Secretariat. Total of four in each province. Total of eight across both provinces.

A central aspect of the strategy of the EMIS system is to have regular contact between each district and provincial staff trained in Database Management Systems (DBMS) and basic computer maintenance and security procedures. These officers would be responsible for regular visits to each district, following up missing or poor quality proformas with SDEOs, evaluation of the operations, continuing training of members of the district cells, the writing of new report forms or data entry forms as may be required, and generally for all activities which will ensure the smooth and timely functioning of the data gathering and entry system.

In the directorate of schools and the secretariat, this person would also work with the assistant directors on the development of enduser applications and reports.

These people should have some computer experience with particular experience in database design and statistics. They should have an interest in information system development work. It would be preferable to have someone with knowledge of educational systems and/or educational planning. As required by GOP for persons of this grade, they must have a BA degree

Data Entry Operators BPS-14

Two in the Directorate of Schools, one in the secretariat, and one each in the pilot district offices. Six in each province. Total of 12 across both provinces.

These people will be computer/information system generalists. They will assist with all aspects of data collection and data entry. They may be called on to follow up missing proformas, assist DEOs, SDEOs, and others in understanding and using proformas, to print regular reports, etc.

These people should have had some exposure to computers, possibly as data entry persons. They should be interested in developing their personal computer skills. As required by GOP they must have, minimally, a 2nd Class Metric degree and "a maximum speed of 10,000 depressions an hour," and related experience.

Office Assistants BPS-11

One in each of the pilot districts. Three in each province. Total of six across both provinces.

These people are entry level data entry staff. They should, at the least, have some experience as a typist. Appropriately trained and certified typists interested in computers would be desirable. These people will be responsible for inputting data using a computer-based proforma. As required by GOP they must have, minimally, a 2nd Class Metric degree.

TRAINING

Both formal and more informal training will be provided throughout Phase I. Informal training will be ongoing as it is a major part of the scope of work for longterm EMIS consultants. More formal training will be provided by both longterm EMIS consultants and shortterm consultants. The following is a summary of training to be offered during Phase I. Dates are approximate, to be arranged by EMIS directors and longterm EMIS consultants. Unless otherwise noted training will occur simultaneously in each province:

<u>Dates</u>	<u>Nature of Training</u>	<u>Participants</u>
7/28-8/22	EMIS study tour. Egypt & US. EMIS concepts and computer use.	EMIS Dep Dir. NWFP & Bal. Dir of Primary.
9/12	Intro to EMIS. Demonstration.	PED program staff. EMIS staff, all cells.
9/15-26	Database design, development, & use. Hands-on dev of computerized proformas.	EMIS staff, all cells.
10/6-10/7	Intro to EMIS. Demonstration. Intro to new proformas.	All DEOs.
10/8-10/10	Intro to EMIS. Demonstration. Intro to new proformas. Understanding and using the new proformas, threats to the quality of data, etc.	All SDEOs.
10/13-10/17	Intro to computers. Data entry using computerized proformas.	All pilot district EMIS staff.
10/20-10/31	Advanced database design & development. Hands-on dev of output reports.	EMIS staff, all cells.
11/20-11/21	Followup data collection seminar.	All DEOs.
11/24-12/5	Advanced database design & development. Hands-on.	EMIS staff, all cells.
12/8-1/5	Data entry. Training & entry of schools data, all districts.	Temporary data entry staff.
1/19-1/30	Data validation, retrieval, computations, & reports.	EMIS staff, all cells.

2/10-2/11	Database utilization in educ planning, research, & analysis.	PED program staff. EMIS staff, all cells.
3/28-4/1	Database utilization in educ planning, research, & analysis.	Selected Prov Educ Officers.
4/3-4/17	Advanced database development.	EMIS staff, all cells.
May	??? (study tours?)	???
June	???	???
8/1-8/30	Computer-based planning & policy analysis. [Harvard University workshop]	Selected EMIS staff. Selected educ off.

HARDWARE AND SOFTWARE SPECIFICATIONS (adapted from Morrison, 4/9/90)

Profile of Needs

	<u>AT-style 286 machines</u>	<u>AT-style 386 machines</u>	<u>graphics printer</u>	<u>Laser printer</u>
Dir Primary	1	2	1	1
Dir Schools	1	1	1	1
Secretariat	1	1	1	1
Pilot district	1 (3)		1 (3)	
Computer Center	8	2	4	1
<hr/>				
Total per Prov	14	6	10	4
<hr/>				
Total PED	28	12	20	8
SPARES	$\frac{8}{36}$	$\frac{2}{14}$		

Hardware Specifications

→ plus 2 computer proj systems

AT-style 286 Machines

At-style computer (80286 CPU with at least a 12 Mhz chip on an AT bus), with a 60-70 megabyte disc operating at under 30 millisecond average access time, a 5 1/4" floppy disc (1.2 meg. capacity), a 3 1/2" floppy disk (1.4 meg. capacity), monochrome graphics monitor, 2 megabytes of memory, serial and parallel ports. [Note that in some districts the choice of equipment might be a 'lap-top' rather than a desk top model. In these cases, the 'lap-top' with its portability, ability to run off batteries, and generally more robust design (although usually more expensive) would be installed with a normal monitor and key board in its usual location. Needs to be discussed.]

AT-style 386 Machines

AT style computer (80386 CPU with at least a 25 Mhz chip on an AT bus), with a 150 megabyte ESDI disc operating at under 20 millisecond average access time, a 5 1/4" floppy disc (1.2 meg. capacity), a 3 1/2" floppy disk (1.4 meg. capacity), VGA color graphics monitor, 3 megabytes of memory, serial and parallel ports.

Graphics Printers

Graphics printer, wide carriage, with capabilities for draft and near letter quality print in 10 and 12 CPI print as well as condensed print. The speed in draft mode should be rated at least at 180 CPS. The machine should be able to print on tractor-fed paper as well as single sheets. The print buffer should be at least 4k bytes. Cable for connection to printer to be included.

Laser Printers

Specifications unavailable.

Additional Equipment

Each computer will require:

- (i) A voltage stabilizer rated at least at 1000 watts.
or
An uninterruptible power supply unit (UPS) with at least 30 minutes operation after power loss. This would be needed in any area where power disruptions are frequent.
- (ii) A total of 6 two-way switch boxes for each province.
Total of 12 to cover both provinces.
- (ii) A Suite of software to include MS-DOS 4.01 or higher, a spreadsheet package (e.g. LOTUS 1-2-3), a database manager with full SQL capabilities (e.g. RBASE), a sophisticated and widely used word processor (e.g. Word Perfect), data management utilities (e.g. Norton Utilities or PC Tools) and a graphical user interface (e.g. MS Windows and a mouse).
- (iii) Covers for all computers and printers.

Each computer facility will require:

An air conditioner rated at a volume appropriate to the area to be cooled. This would be typically at 10,000 BTUs.

THINGS THAT COULD GO WRONG WITH THIS PLAN

Long term consultants not available.	(Unlikely)
EMIS positions not sanctioned.	(Possible)
Positions sanctioned, but not filled.	(Possible)
Positions not filled in a timely manner.	(Possible)
Hardware acquisitions delayed.	(Likely)
Problems with printing of proformas.	(Unlikely)
Lack of cooperation of DEOs, SDEOs, etc.	(Possible)
Training will require additional effort.	(Possible)
Untimely availability of funds.	(Possible)