

# memorandum

DATE: January 30, 1979

15A 50042

REPLY TO: PPC/PDPR/HR, Richard Shortlidge *RS*

SUBJECT: Afghanistan Trip Report - November 13 - December 8, 1978

TO: See Distribution

*Gesa + Wivian*

Attached is a copy of my Afghanistan trip report. If you have any questions, please get in touch with me.

*Kathy*

Attached:

1. Afghanistan Trip Report
2. Attachment A: Memorandum cancelling education policy meeting.
3. Attachment C: Economic Analytical Framework for Rural Primary School Construction II and Primary School Teacher Training.
4. Attachment D: Chart of CDSS Methodological framework of a Rural Household in Afghanistan

Note: Attachments B and E cannot be reproduced because of blue ink. However, I'd be happy to let you see them.

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Afghanistan Trip Report  
November 13 - Dec. 8, 1978

by

Richard L. Shortlidge, Jr.  
PPC/PDPR/HR

I. INTRODUCTION

The original purpose for my TDY was to do the economic analyses for the Teacher Training Project and the second phase Rural Schools Construction Project. This task was broadened to include assisting the EDU staff develop an analytical framework for its activities in education. In addition, PPC asked if I might use some of the time in Afghanistan to discuss the emerging Agency Education Policy with mission staff in the context of the Country Development Strategy Study. The mission agreed to let me spend a portion of my time in these policy discussions. It was not possible to have a seminar on the policy paper due to AA/IE's visit. However, the policy paper was discussed informally with mission personnel (see Attachment A).

Table I indicates how I actually spent my time while in Afghanistan. Approximately half the time was dedicated to project activities surrounding teacher training and school construction. Since the designs for these two projects have not been firmed up, it was virtually impossible to undertake the actual economic analyses of them. Therefore, it seemed reasonable to divide my project related activities into two functions. The first was to assist EDU staff in their work to formulate and design the projects. The second was to develop an analytical economic framework into which to fit the two projects. This framework is considerably broader in scope than an economic analysis for a project paper. Yet it contains the essence of the PP economic analysis. Once the project designs are fixed it should be possible to pare the broader analysis down to the elements essential for the PP. The analysis establishes the economic criteria for selecting the best alternatives in both school construction and teacher training. However, these criteria only deal with economic issues. Therefore, they may be political and social factors which ultimately preclude the most economically efficient choice. There is nothing inherently bad or good in opting for a less than efficient alternative. It simply means that a society, as

Table I: Allocation of Shortlidge's Time During Afghanistan TDY (November 13 - December 2, 1978).

<u>Activity</u>	<u>Percent of Time</u>
I. Project Related Work.....	50 percent
A. Formulation and design of Teacher Training and School Construction	25 percent
B. Economic Analytical Framework for two education projects	25 percent
II. Work on CDSS with program office	15 percent
III. Meetings with DRA officials, trip to Kandahar, and visits to TTI, AIT, ATE, World Bank, UNDP, and KURC	<u>35 percent</u>
Total	100 percent

- 3 -

represented by its government, has decided for whatever reasons, to take a less than efficient option. The analytical economic framework at least allows one to ascertain the opportunity cost associated with this choice. In other words, the framework indicates the extent to which scarce resources would not be available for other investments, given a fixed resource pie.

About one-sixth of my time went into CDSS discussions and activities. These focused mostly on the development of a conceptual framework within which to view the family or household as an economic and social entity. The family's welfare was determined in this framework by how much income it received and how it spent this income. The framework then allowed one to see, at least conceptually, how the family's welfare was effected by government programs to expand health, agricultural, and educational services or by government policies that altered factor price relationships or stimulated rural investments.

A little more than one-third of my time has spent in meetings with MOE, MOHE, UNDP and World Bank officials, in travel to Kandahar to visit schools and a TTI, and in visits to institutions such as Roshan ITI, AIT, and ATE in Kabul. While time-consuming, these meetings and visits were valuable to me in my work on the education projects. They also helped me to appreciate and understand the process of initiating and carrying out development activities in Afghanistan. I personally think that this will help me to perform my program review functions in PPC better as they pertain to Afghanistan.

This trip report is built around the three main activities discussed above. These detailed presentations are followed by a brief summary in which I outline some of my recommendations for the program in Afghanistan.

## II. PROJECT RELATED WORK

### Formulation and Design of the School Construction and Teacher Training Projects

#### School Construction

I had the privilege to participate, along with Dr. Charleson, in several meetings at the Construction Unit of the Ministry of Public Works (CU/MOPW) to review the unified primary school design plans being developed by the UNESCO Asia Regional Office team lead by Mr. Vickery. The decision by the DRA and the major donors in school construction (AID, WFP, and IBRD) to have a unified series of school designs is an extremely important step ~~forward~~ toward improving the ability of the DRA to meet its school construction targets. For USAID, this reflects a recognition that the schools construct

under Phase I were too expensive and complex to serve as the basis for a massive school construction program as envisaged over the next 5 years. For WFP, this indicates a general dissatisfaction with the poor quality of some WFP financed schools. A review of the old WFP and USAID schools indicated that the major cost and design problems stemmed from the roof and joinery. In the USAID schools, 37 percent of the construction cost is in the roof. Another 30 to 40 percent is in the joinery - windows and doors. Thus, considerable savings in school cost could be realized by redesigning the roof and joinery. While the WFP schools cost considerably less than the USAID schools, it would appear that this difference is large explained by differences in the roof designs, particularly on the Kandahar schools. The more complex roof design not only cost more in terms of materials but also in terms of skilled labor. Another major difference between WFP and USAID schools, which accounted for the higher cost of USAID schools, was the higher input of highly skilled engineers and technicians. Therefore, the cost advantages associated with WFP schools did not derive from their use of mud brick as opposed to fired brick and stone, but from these other factors.

This fact should be kept in mind when reviewing the school designs for Phase II. It is likely that the government will wish to move away from mud bricks to mainly stone and, to a lesser extent, fired bricks. Such a shift would increase the useable life of the building at very little additional cost, particularly where stone is readily available. The case for fired brick is less clear.

The Mission should very carefully examine the relative cost differences among the new school designs, which will be available next month. I would propose that these costs be broken down into costs associated with walls, roofs, joinery, and foundations. I would hypothesize that there is little difference in the costs of stone or mud brick walls and that fired brick is only marginally more expensive. Thus, the total costs of a fired brick (locally produced) school and a stone school are not likely to differ dramatically, particularly if these costs are projected over the expected life of the schools.

Although considerable progress has been made in overcoming the bureaucratic and procedural problems associated with school construction, clearly demonstrated by the speed and quality of school construction in Kandahar compared to Parwan (see attachment B), it is not clear that the current modus operandi would work well under a program to construct a thousand or more schools a year. The larger school construction activities envisaged over the next several years will likely call for major alterations in the way schools are built, materials procured and delivered, labor hired and utilized, and construction sites selected and supervised. One approach is the construction workshop center idea which has surfaced in discussions with CU/MOPW. Essentially this center would prefabricate roofs and joinery, store materials and train laborers and supervisors. It would be

strategically located within a construction area in which several schools were being built. How many schools this workshop would serve has not been worked out. Other approaches should also be considered. Since India has had considerable experience in rapidly building primary schools, the Mission might wish either to invite Indian officials to visit Afghanistan or to send appropriate Afghan officials to India.

The DRA appears to be willing to utilize some of the resources in Rural Primary Schools I to build the new prototype designs being developed by UNESCO. This idea was raised by USAID/EDU officials at recent meetings with CU/MOPW. Although the construction workshop idea was raised also, there was less willingness to experiment with it during Phase I. The workshop was seen as too untried and hence risky. However, CU/MOPW did not rule it out. This might be something which USAID may wish to test either by putting more resources into Rural Primary I or at the outset of Rural Primary II. Alterations in Rural Primary I to improve the capacity of the DRA to build schools in a shorter period of time might be one way to address many of the concerns expressed by the AID/W review of the Phase II PID. EDU staff should be encouraged to pursue these modifications by USAID/A and AID/W.

Before closing this discussion of school construction, I would like to comment on the dialogue going on between EDU and CU/MOPW officials. This dialogue is being carried out at a substantive level and important issues related to school construction and design are being debated. I think that the success of this dialogue may in part explain President Karmand's, head of CU/MOPW, willingness to tour the Kandahar schools both with Dr. Wilder and me and with the AA/NE delegation. Although the potential benefits to be derived from this dialogue as measured by an expanded school construction program are uncertain, even more so since all construction was shifted to the Ministry of Public Works, the dialogue should be encouraged and supported by USAID/A officials.

### Teacher Training

The dialogue with the DPA on teacher training has not really begun. A working group and policy group has only recently been established within the DRA to discuss the development of teacher training activities. The ability to carry out this dialogue is made for more complex by the split of teacher training functions between MOHE and MOE. The Teacher Training Institutes (TTI's) are under MOHE whereas in-service training for teachers with less than 12 years of schooling is under MOE. The problems are multiplied by the fact that the teachers being trained will teach in primary schools under the MOE.

While it is possible to read USAID's difficulties in making progress in teacher training as a sign that the DRA does not want AID involved in a sensitive area such as teacher training, it is also quite plausible that these difficulties grow out of; first, the way in which teacher training is organized within the government and, second, DRA's uncertainty how to resolve the power struggle between MOE and MOHE over which ministry should have responsibility for the training of primary school teachers. The fact that MOE has decided to establish the policy group and working group, should the TTI's be transferred to it indicates a willingness to at least discuss AID's involvement. I think that it is important that all the department heads that we talked with stressed the point that the DRA wanted AID's assistance. Although there is uncertainty about what this means, AID should not attempt to read in ulterior motives where the evidence is meager and contradictory.

The design of the teacher training project or projects is not firmed up by the DRA at this point in time. In my view considerable progress has been made since the PID in USAID's thinking about short-term ~~training~~ in-service training, and pre-service training. However, little additional progress can be made without input from the DRA.

A particularly promising idea for short-term teacher training was developed by Dr. Handleman during my stay in Afghanistan. The DRA plans to increase primary school enrollment from 29 percent to 60 percent by the end of March 1979. While there is some confusion whether the target is 60 percent enrollment of only the children of first grade age or of the cohort of children 7 to 14, the task is formidable. To accomplish it, the DRA plans to train a large cadre of teacher trainers (about 900) to go out to the provinces to train unemployed secondary school graduates as teachers. Given the absence of a well-thought out teacher training curriculum and brief period of time between now and the end of March, the probability of reaching this target in any kind of meaningful way is extremely low.

Dr. Handleman has proposed a technology based solution to the "crash" teacher training program. Although there is no way that this solution could be in place by January 1979, it could be in place by mid to late summer 1979 if an agreement is reached quickly between the DRA and USAID on the mechanism to do it, the level of funding, etc. Essentially the program would focus on critical key areas of the primary school curriculum such as mathematics which are difficult to teach and account for a large share of the repetition at the primary level. A small group of Afghan's from government offices concerned with teacher training, curriculum, textbooks, radio, TV, and evaluation combined with a couple of outstanding teachers and teacher educators would be sent to the USA. Their purpose would be to develop packaged media based teaching modules. They might work with an innovative and creative group such as the Children's TV Workshop. These sets of modules would be used to train teachers in the best way to teach; for

Best Available Document

example, the four basic mathematical operations. The U.S. has developed considerable expertise in the last two decades in packaged learning systems and improved teaching techniques. This comparative advantage should be stressed. How media might be used could be demonstrated to the DRA through the films in educational technology developed by the DSB Bureau.

At the moment, this program is nothing more than an idea. It needs to be discussed with the DRA. Yet it should be supported by USAID/A. The likelihood of the DRA meeting primary school objectives in the next year without a revolutionary approach to teacher training is extremely low. Thus, the pay-offs from the Handleman approach are high while the risks are low. On the other hand, the risks for USAID are considerably higher. A considerable effort may be needed to sell the DRA on the idea. Failure to come through or succeed in the event they accept the idea, could drastically reduce USAID's credibility. I mention this not to discourage USAID from making the effort, but to underline the importance of careful planning and support within USAID for it. Also, USAID should attempt to obtain a fairly firm commitment from DSB to allow this activity to go under the DSB communication projects with the Academy for Educational Development or Stanford University. I realize that Dr. Block, (Head of Educational Technology of DSB), has given his tentative support, yet EDU needs to realize that Dr. Block's contractors are already overcommitted and that he will have major responsibilities for the new INTELSAT initiative. While I personally believe Dr. Block would make every effort to support this project in a way to maximize the likelihood of success, it is wise to bear in mind the parameters within which Dr. Block's education technology group in DSB operate.

**Best Available Document**

## Economic Analytical Framework for the Two Education Projects

The economic analytical framework for the teacher training and school construction projects is attached to this report (see attachment C). Therefore, I will only attempt to summarize it here. As mentioned in the introduction of this report, this framework serves a broader set of functions as an appendix to the Project Papers. It provides an overview of the relationships between primary education and the economy. This overview established that economic justification for investments in primary education as opposed to other levels of education. However, it does not deal with the question of whether investments in primary education are more profitable than investments in health or agriculture given Afghanistan's current level of development. Therefore, a certain degree of caution should be exercised in extrapolating an argument from this framework for investing in education rather than some other sector.

The framework suggests that the level of economic benefits to be derived from investments in primary education will depend in large measure on complementary investments made in the economy to improve agriculture, health and employment opportunities off the farm. Historically, the government of Afghanistan has not made these investments. Therefore, the benefits from primary education are unlikely to be fully realized. Yet within current conditions in Afghanistan, the benefits from investments in primary education will still be higher than investments in secondary or higher education. While the benefits are higher, they are not likely to be as high as they would be if these complementary investments were made. The evidence (i.e. secondary school unemployment) clearly indicates an overinvestment in secondary and higher education relative to primary education.

The analytical framework contains an embryonic simulation model built around school construction and teacher training at the primary level. The model postulates a set of assumptions which approximate conditions affecting the supply of educational services at the primary level in Afghanistan. The model can be used to project the impact of enrollment increases on the demand for schools and teachers and their budgetary implications. It can also be relied upon to demonstrate the impact of changes in the underlying assumptions such as a change in the student teacher ratio.

I would recommend that this model or one similar to it be used in the ongoing discussion with MOE, and perhaps MOHE at some future date. It would build an awareness within the MOE and MOHE of the various linkages within the educational pyramid and their relationships to fiscal and human resource requirements. From what I have heard in my meetings in Afghanistan and seen in the form of written reports and tables, most of the data to undertake a simulation model are available in Kabul. If the mission wished, I would be willing to explore the development of this simulation model with World Bank and BUCEN staffs in Washington. I understand that Dr. Roy Prosser of the

World Bank ran some simulation models prior to his recent trip to Afghanistan. I will attempt to obtain these in Washington along with the World Bank sector paper.

In addition to this simulation model, the analytical framework provides the various criteria for selecting the most efficient or cost effective alternatives in school construction and teacher training. The criteria for school construction relate to the design and location of schools and economies of scale in school construction approaches. The criteria for teacher training reflect the need to maximize learning gain while minimizing cost both in terms of training and recurrent cost budgets.

## II. WORK ON THE CDSS WITH PROGRAM OFFICE

The program office asked that I participate in their discussion to revise last year's CDSS. During these discussions we developed a conceptual framework in which the household, whether poor or rich, becomes the focal point. (See attachment D). Within the conceptual framework, the poor are distinguished from the rich by the lack of income generating resources and of access to services to improve their economic and social well-being. There are essentially three dynamic flows that affect the household's well-being. The first relates to factors and activities that result in income, whether in cash or kind, to the family. The second relates to how this income is used to buy goods and services and to make investments. Finally, the third relates to government programs, policies, etc., that affect either the generation of income or its expenditure and investment. It is this latter flow which ties the micro and a policy levels together.

The conceptual framework is, at the moment, largely heuristic. While it lacks the rigor and sophistication of a complex mathematical model, it does stimulate thinking about how all these various inter-relationships interact and reinforce each other. For example, the impact of increased income on demand for food may be traced. Similarly, the effect of a reduction in food prices on both consumption and income can be hypothesized.

The mission might wish to try to carry this heuristic model a few steps forward by first beginning to attempt to assign ordinal weights to the various relationships. Later on, these relationships might be measured by cardinal weights derived from statistical analyses. The value, as well as the possibility, might be explored with the Development Study Program team when it comes out early next year. I would urge the Mission to alert the DSP staff, particularly John Westly before they come, so they can begin to plan for it.

## III. MEETINGS AND DISCUSSIONS

A considerable share of my time in Afghanistan was absorbed in meetings with DRA staff and officials, in visits to institutions such as the TTI's,

ATE, AIT, and KURC, and in travel to visit AID financed primary schools and the TTI in Kandahar (see attachment E). While time consuming, these meetings and visits were extremely beneficial to my work on the two education projects. Furthermore, they provided me with a better perspective within which to review educational activities in Afghanistan, once I return to Washington.

The details of these meetings are not presented here since they are elaborated in the Kandahar trip report and the memoranda of conversation which are attached.

On the basis of these meetings, I remain essentially optimistic about the prospects for an USAID program in education. I must confess that I am more optimistic now than when I first arrived. This is not to say that the road ahead will be an easy one to travel, far from it. I believe that the dialogues underway with the DRA education people while often perplexing and confusing, are establishing a solid foundation for a good education program in the future. My main concern is that the mission and/or the Embassy will grow impatient with this process before it reaches fruition.

#### IV. RECOMMENDATIONS

1. USAID/A should refrain from second guessing the motives and intentions of the DRA. While it is unlikely that USAID staff will cease in their debates and discussions to attempt to understand how AID will fit within the DRA's development programs, these discussions should not be read as the justification for USAID policy decisions which impact on the ability of USAID to launch a development program in Afghanistan. The signals coming from the DRA are mixed and confusing. Therefore, USAID/A should remain patient and continue its efforts to develop a program in Afghanistan. USAID/A should be encouraged to follow this route by AID/W and the State Department.

2. The political and social climates in which USAID/A staff have been working since the April revolution are extremely difficult. The dialogue and discussion with the DRA have been frustrating and trying. These circumstances are particularly difficult for the technical staff of the mission. Their success as career foreign service officers is not measured by dialogues and discussion but the programs that these produce. Thus, the current conditions in Afghanistan would be discouraging even under the best of conditions within the Mission. However, a number of decisions regarding EDU staffing patterns appear to have been made which would adversely affect the Mission's capacity to sustain the present level of discussions with the DRA and to undertake an effective school construction and teacher training program should these materials. In my own judgment, the decision to reduce the EDU staff from two professionals to one was premature. I would urge USAID/A to reconsider this decision and to attempt to ~~reverse~~ <sup>overcome</sup> the negative effect of this decision on EDU staff morale.

3. The discussions and dialogues with MOE and MOHE officials should continue to be premised on a systematic view of education. Therefore, the linkages between school construction and teacher training should be the basis for these discussions. However, for purposes of AID's internal approval processes, they should be separated. Since the work on the school construction project is further along than teacher training, the Project Paper for school construction should come into AID/W in late February. It is unlikely that it can be submitted before then, given the absence of a unified school design and a firm fix on the number of schools to be built by AID. These are likely to be available in the first part of January. As long as USAID/EDU staff is making progress on teacher training, I see no reason to postpone signing the school construction agreement as soon as it is ready for USAID and DRA signatures.

4. The "crash" teacher training program should be separated out from the broader teacher training project. I would recommend that EDU staff assign priority to this "crash" program. This may mean some slippage on the larger teacher training program, but I believe that this is justifiable given the priority that DRA itself has assigned to the objective of moving quickly from a primary school enrollment of 29 percent to one of 60 percent. It is an excellent opportunity for the US to demonstrate quickly its willingness to support the DRA's development efforts. I would be willing to lend whatever support I can to this from Washington. I would be willing to work with DSB on it and attempt to find the fiscal resources from outside NE should the resources not be available within NE.

5. The economic analytical framework developed for the teacher training and school construction projects should be used as a basis for encouraging the MOE and MOHE to think about the linkages and ramifications both in terms of human and fiscal resources of educational policy decisions. I would urge EDU to use the framework to develop a simulation model which could be employed to indicate the various trade-offs and their costs associated with policy decisions such as lengthening teacher training, upgrading teachers' qualifications, reducing student teacher ratios, etc. While I believe the resources exist in MOE and Kabul to undertake this simple simulation, I would be willing to pursue it with BUCEN and World Bank staff in Washington.

6. The criteria for selecting the most cost-effective school construction and teacher training programs should be discussed and more fully developed with the DRA. In these discussions EDU should make it clear that these are only suggested criteria to serve as the basis for a discussion with them. The final criteria should emerge from these discussions.

7. EDU should encourage the DRA to find out more about the mass school construction program carried out recently in the western part of Uttar Pradesh ~~State~~ in India. USAID may wish to invite Indian experts familiar with this program to come ~~here~~ to Kabul for a seminar and discussions with MOE,

Ministry of Planning, and MOPW staffs. If not possible to arrange for these experts to visit Kabul, EDU should suggest that DRA officials visit the construction sites and experts in India. I would encourage EDU and Engineering staffs to accompany such a delegation to India.

8. The CDSS conceptual framework developed during the last month should continue to be the basis for in house discussions of Mission strategy. The Mission might wish to ask the Development Studies Program team to use it to structure a part of their forthcoming seminar in Kabul. The Mission might wish to consider taking this heuristic model as the foundation for a more sophisticated mathematical model which could be the basis for testing in advance the impact of various proposed program and policies on the rural household. In addition, it could assist the Mission to evaluate the effectiveness of its development programs.

9. USAID/A should not allow itself to become overly concerned with ideology as an issue in primary school education. First, there is no log to singling out education in a debate over ideology. Ideology can be a part of health education program or an agricultural extension program. Second, there is nothing inherently bad or good about ideology. It is a common characteristic of all nation states, including our own. Ideology is very much a part of the process of enculturation. The distinction to keep in mind is whether the ideology leads to a set of conditions in which there are gross violations of human rights. This is where the concern should be directed, not at ideology. If Afghanistan is able to use ideology to improve health status, increase agricultural production, and educate more children in a meaningful way without violating our sense of justice, then we should be supportive.

10. In its discussion with the MOHE and the MOE about teacher training EDU should stress that teaching techniques or methodology directed at the curriculum of the primary schools are at the heart of improving the relevancy of education in Afghanistan. At the moment, 75 percent of the curriculum of the TTI's is academic training at the post - secondary level and 25 percent of it is professional teacher training.

11. While I regret not having the opportunity to have a meeting on the education policy paper, for I would have appreciated an open discussion of it with the Mission staff, I am not terribly concerned that this discussion was cancelled. USAID/A's education strategy is in basic agreement with the proposed Agency education policy. However, I would encourage the Mission to develop more fully the educational linkages to agriculture, health, population etc. These linkages are weak in the USAID/A's education strategy. EDU staff should be brought into discussion involving essentially educational activities in the other sectors.

12. If the DRA continues to demonstrate its ability to build schools rapidly, USAID/A should consider a significant increase in the number of schools to be constructed under Phase II.

13. In conclusion let me express my appreciation to the Mission for allowing me to participate in its various activities over the last month. I have learned a great deal. I hope that my visit was equally as profitable to the Mission as it was to me. I will be delighted to assist the Mission in whatever way I can in the future. You are an excellent group of people and deserve a great deal of praise for your work under extremely difficult conditions.

Again thanks.

Richard J. Shortlidge, J.  
December 7, 1978

- Attachment A: Memorandum cancelling education policy meeting.
- Attachment B: Trip Report on Wilder-Shortlidge visit to Kandahar.
- Attachment C: Economic Analytical Framework for Rural Primary School Construction II and Primary School Teacher Training.
- Attachment D: Chart of the CDSS Methodological Framework of a Rural Household in Afghanistan (Note - chart may be obtained from George Carner's Office).
- Attachment E: "Courtesy meeting and discussion with Ministry of Education Officials", Memorandum of Conversation, November 29, 1978.
- "Meeting with Dr. Ed. Cain, UNDP", Memorandum of Conversation, December 2, 1978.
- "Meeting with Deputy Principal Roshan TTI,"  
Memorandum of Conversation, December 2, 1978.
- "Meeting with Dr. Theodores, World Bank, "Memorandum of Conversation, December 2, 1978.
- "Meeting with Mr. Formuly and Mr. Levresige, ATE,"  
Memorandum of Conversation, December 3, 1978.
- "Meeting with Director AIT," Memorandum of Conversation, December 3, 1978.

Attachment #  
A

Director & DD, Office Heads  
Mr. Silverman, Mr. Cummings

December 4, 197

AID/W/PFC, Richard L. Shortlidge, Jr.

#### Agency's Education Policy Paper Review

1. The meeting on December 5th at 2:30 p.m. to review the policy paper has been cancelled due to schedule conflicts. Since many of you are tied up this week with other meetings, it will not be possible to reschedule this meeting before I depart.
2. I have received many valuable comments from some of you already. If others of you have comments or suggestions, I would appreciate receiving them either before I leave or in Washington.
3. Of particular concern to me is where we go from here to ensure that the policy finds itself expressed in missions' programs. In the case of USAID/A, there is no conflict between the mission's program priorities in education and the policy paper. However, this is not the case in many other parts of the world, particularly in Africa. Therefore, we need to be concerned about how to help these missions reorient their priorities and strategies in education. I have thought of two ways to do this. First, PFC along with the regional bureaus and DSB could put together a video tape of a discussion of the policy paper in which many of the issues such as the balance between lower and higher education would be discussed. Second, AID/W could assemble a "travelling road show" to visit missions and work with them to establish educational program priorities and strategies.
4. For missions such as Afghanistan, we need to consider how one goes about carrying out and implementing an educational program once there is basic agreement in program priorities and strategies. For example, what kinds of questions and issues need to be addressed in the design, implementation, and evaluation of teacher training programs, school construction programs, agricultural extension programs, etc.? What do we know from programs elsewhere in the world which might help others to avoid pitfalls and mistakes. Let me illustrate what I mean from my work here in Afghanistan on the school construction project. It would be very useful to have readily available information on costs, designs, and implementation.

designs from successful school construction programs in countries such as India and Guatemala. This information could alert technicians and programmers both in AID and the host government to major problems and pitfalls which critically affect the successful attainment of school construction targets. I have thought about PPC and DSB working together to produce a series of state-of-the-art guides in major education program areas. I would like to know from you whether or not this would be useful to mission people who have to deal with the day to day problems of program design and implementation. If you think it would be valuable, I would appreciate learning from you the major educational problem areas that should be addressed.

5. You may pass along your reactions to the above before I leave on December 8th or send them to me in AID/W. Thanks.

OUTLINE

ECONOMIC ANALYTICAL FRAMEWORK FOR RURAL PRIMARY SCHOOL CONSTRUCTION  
AND PRIMARY SCHOOL TEACHER TRAINING\*

1. Introduction

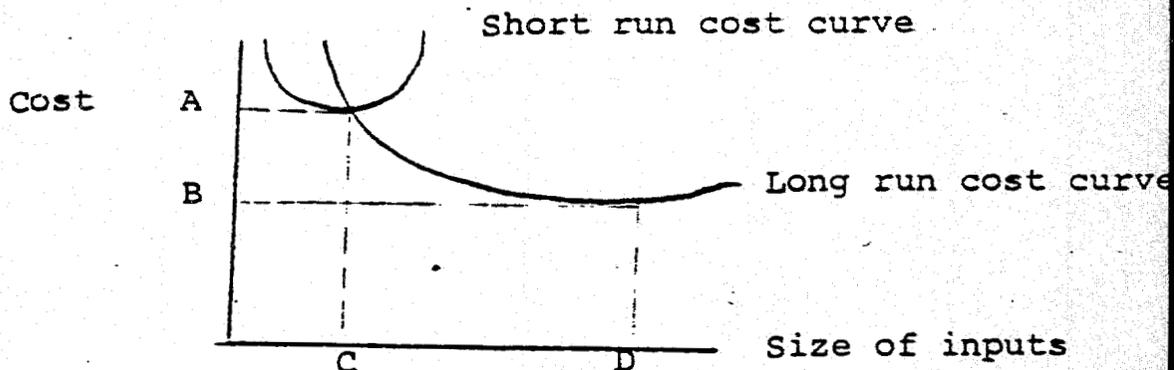
A. Overview of the analytical framework.

1. Are these two projects justifiable in terms of their anticipated social and economic benefits to Afghanistan?
2. If so, what conditions and circumstances are most conducive to the maximization of expected benefits to be derived from both teacher training and school construction? If these do not exist, will the expected benefits be sufficiently high enough to justify the investments?
3. Do these programs rely upon the most cost-effective approaches and alternatives to achieve their stated goals and objectives? If not, are the deviations

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\* Please note that this economic analytical framework is considerably broader than an economic analysis for a project paper. While it contains the essence of an economic analysis such as the criteria for selecting the approaches in teacher training and school construction, its primary purpose is to provide EDU staff with an economic analytical framework within which the two projects' development and design might take place. It is, therefore, a model which can be utilized to estimate the impact of various educational policies on human resource and recurrent cost requirements.

from the most cost-effective approach reasonably justifiable on the basis of non-economic or economic constraints which may preclude the selection of the most cost-effective approach? For example, the government may not be willing for political reasons to make necessary organizational or procedural changes required by the most cost-effective approach. An economic constraint might be the inability to realize certain economies of scale due to the absence in the short run of skilled labor. Therefore, in the short run a less cost-effective approach might have to be undertaken until this expertise is developed. (The short run cost curve may be higher than the long run cost curve. See illustration below.



In the short run schools might have to be constructed or teachers trained at a cost necessitated by the availability of inputs C. In the long run, the input constraint is relaxed and cost shifts down to B. B is

the long-run the most efficient or least cost level of teacher training or school construction.)

- B. Anticipated social and economic benefits from investments in primary education as compared to other levels of education.

Many of these relationships are fairly well studied.

Despite this, the Mission should consider improving the analytical capacity of the two Ministries of Education

to explore these relationships in Afghanistan. As a first crack the Mission might first run some simple correlations between education and agricultural productivity, fertility, and infant mortality. The agricultural relationship could

be tested using the Helmand data. The education variable in this case would be literacy. The fertility and mortality relationships might be tested using the National Demographic and Family Guidance Survey of the Settled Population of

Afghanistan carried out by the State University of New York in 1974. Other sources to examine these relationship might

be the socio-economic surveys conducted in Kabul, Kandahar, Jalalabad, and Pul-i-Khumri in 1969. Also the impact of

education on labor force participation might be explored with the SUNY data. Although these various statistical analyses

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need not be a part of the economic analyses of the two education projects, they might be a valuable exercise for the Planning Department of the Ministry of Education and the USAID/EDU staff to carry out as part of their on-going dialogue over the next several months.

1. Social rates of return from investments in primary education exceed the returns from investments in other levels of education. While the possible explanations for this fairly well established relationship are many, it indicates that there exists an imbalance between investments at the primary level and other levels of education. That is, there is an over-investment in secondary education and higher education and an underinvestment in primary education.
2. Various impacts of primary education.
  - a. Four years of education appears critical to increased agricultural productivity. The work of Dean Jamison of the World Bank and others established the existence of a threshold level of education, which appears to be 4 years of primary school. The Jamison work is based on standardized regression analyses from approximately

20 different developing countries. Jamison is probing this finding further through in-depth research in Nepal and Thailand. The work in Nepal suggests that the link between primary education and agricultural productivity is largely explained by mathematical and logical skills acquired during the first four years of schooling. This finding however is extremely tenuous. Therefore, it should be utilized with caution. However, in the teacher training area, it suggests focusing on mathematics which in most developing countries is one of the weakest area within the primary school curriculum.

- b. Most of the research in developing countries on the relationship between decreased fertility and infant mortality and education is based upon data in which the education variable is dominated by individuals with primary education. Therefore, the education variable essentially explains the difference between those without education and those with primary education

- c. Most of the analyses of the relationship between primary education and out-of-school educational activities such as agricultural and health extension indicate that primary education reinforces the benefits from investments in out-of-school education. Thus, primary education and many forms of non-formal education appear to be complements.
- d. Primary education also provides young people with the foundation for future occupational and vocational education to meet the growth in demand for skilled workers as off-farm rural employment grows.

II. Conditions and circumstances most conducive to the maximization of the expected benefits from primary education and the extent to which these exist in Afghanistan today.

- A. The size of the impact from investments in primary education is a function of economic growth. The more dynamic the economy is, the greater the impact. However, the impact remains even under rather static conditions.
  1. The more dynamic agricultural conditions are, the greater the positive impact of education on agricultural productivity. Yet the positive impact is present under traditional agricultural conditions.
  2. The size of the negative relationship between education

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and fertility is a function of rising female opportunity costs which result from expanding employment opportunities for women. Although opportunity costs are not likely to rise rapidly under rather static economic conditions, investment in education still affect the attitude of women toward the number of children they want. Thus, it is possible to distinguish the attitudinal and economic impact of education on fertility.

3. The demand for more and more children to bring in additional income for the family and to guarantee a source of future income during old age diminishes as the economy is transformed from a traditional one to a modern one. Modernization increases the demand for skilled labor relative to the demand for unskilled labor. This necessitates greater investments in education to increase a family's economic position. Thus, given scarce family resources, the family improves its long run economic position by concentrating its limited resources on few rather than many children. This leads to reductions in fertility and improvements in child health.

4. Increased rural incomes expand the demand for goods and services which in turn increases the demand for skilled and unskilled labor to produce and provide these goods and services. Over time, the relative, and eventually the absolute, advantage favors skill or educated workers. This argument draws directly upon the work of Victor Fuchs and others who have analysed how an economy shifts from an agricultural base to a service one during the course of development.

B. Do these conditions exist in Afghanistan? If not, are they likely to exist in the future? What does this mean for expanding primary education?

1. These conditions do not exist in Afghanistan today. Although considerable progress has been made over the last three decades, most of this progress is concentrated in the capital and provincial cities. Reliance on a capital intensive industrial development strategy has increased the gap between urban and rural areas and resulted in limited employment growth outside of agriculture.

2. Within education, the emphasis has been on secondary and higher education. This emphasis coupled with

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the slow rate of growth in urban industrial employment is beginning to be reflected in growing unemployment among the better educated. It also has contributed to the out-migration of highly skilled manpower to other countries.

3. Although primary education has expanded during this period, there exists an imbalance between investments in primary education and higher level education. Given the lack of educational investment in rural primary education in Afghanistan, there appears considerable room for primary education to make a positive contribution to increased agricultural productivity and reduced infant mortality even under less than dynamic growth conditions.
4. The benefits from investments in primary education are realized in the long run. Primary education establishes the basis for dynamic economic growth. Although in the short run, it may have negative effects such as greater rural to urban migration and put pressure on the expansion of secondary and higher education, it establishes the basis upon which long run economic growth will depend.

It is important to realize that no country, regardless of its development strategy, has achieved economic growth and development without broadening the base of the educational pyramid.

Many of the OPEC nations are having serious problems realizing the full economic benefits from their oil dollars due to severe manpower and labor scarcities. The absence of a broad based educational system contributes to this problem. The lack of education contributes to serious inflationary wage pressures which in the long-run could defeat their developmental efforts. These pressures are lessened by importing skilled labor from the outside. An interesting exception is Iraq which is taking its time to invest in services such as education to create the infrastructure for long term economic development.

5. Thus, in conclusion, expansion of the base of the educational pyramid is an essential aspect of development. Although reliance on a capital intensive development strategy results in the benefits from this investment being less than

they would be under a more broad based development strategy, they are still larger than investments in other levels of education. While there is uncertainty about the growth strategy to be followed by the DRA, it appears to be a modified capital intensive strategy with increased attention to rural areas and agriculture. Such a strategy would strengthen the argument in favor of primary education expansion.

III. Assessment of DRA's capacity to increase access to and relevancy of primary education.

- A. The DRA's objective is to increase primary school enrollment from 29 percent to 60 percent of the school aged population (7 to 14 years old) over the next 5 years.
- B. The resource requirements to meet this objective assuming basic changes in the underlying educational parameters.
  1. Assumptions behind the estimates:
    - a. Repetition and dropout rates (wastage) remain unchanged. See the Nystrom study for these figures.
    - b. Unit cost of primary education remain unchanged.
      - Unit cost data are cited in Nilson's 1977 study on the 7 Year Plan targets for primary education.

- c. Growth in population stays at 2.2 percent over the 5 year period. The actual growth rate in the school age population may be lower due to higher infant mortality rates. The U.S. Census Bureau's population model for Afghanistan could be used to estimate age specific population cohorts. The model also might be a good source for mapping the grade specific changes that would have to occur in enrollment to achieve the 60 percent enrollment objective. The model could also estimate the changes in the composition or enrollment mix (boys/girls urban/rural) required to achieve targets.
- d. Student teacher ratios at primary level remain unchanged. The overall primary school ratio is 37 to 1. We need to know the grade specific ratios. These should be available through data collected by the Ministry of Education.
- e. The average number of students per primary school is 192. However, this figure is estimated by dividing total primary school enrollment by the number of schools. No distinction was made between village schools and primary schools. Furthermore, it is based upon an 8 grade primary education.

new 4-4-2 scheme will require that estimates of the total number of schools and teachers be based on assumptions about the average number of students and teachers per school.

- f. Each child enrolled in primary school to be given a full set of textbooks each year.
  - g. A real annual rate of growth in GNP of 3.0 percent.
  - h. Government revenues of 12 percent of GNP.
  - i. No change in the relative numbers of students entering secondary education from primary education as well as no change in the proportion of secondary graduates going on to higher education.
  - j. No change in school construction or teacher training costs.
2. Comparison of annual changes in composition of primary school enrollment required to meet objective, based upon a simulation model run by the DRA's Ministry of Education, the U.S. Bureau of the Census, or the World Bank. From our discussions with the World Bank Representative in Kabul, Roy Prosser of the World Bank ran some simulation models before his recent trip to Afghanistan.

a. By Sex: The attainment of a 60 percent enrollment ratio will require substantial changes in the proportion of females enrolled in school. Presently almost 50 percent of the boys of primary school age are enrolled in school. The enrollment of girls is about 8 percent. Given the wastage rate assumption, the attainment of this enrollment ratio objective will likely depend on what happens to female enrollment.

b. By urban-rural breakdown: A large proportion of the children making up the 29 percent primary school enrollment reside in urban areas. Increase in primary school education will depend upon major expansion in rural areas.

c. By major and minor language groupings.

3. Resource Requirements over next 5 years to meet the objective.

a. Number of primary school teachers by grade.

1. Newly trained teachers; demand for preservice training.

2. Existing teachers; demand for in-service training.

- b. Number of primary schools broken down into lower primary schools (1-4 grades) and upper primary (5-8 grades).
  - 1. Number of replacement schools.
  - 2. Number of new schools.
- c. Number of new textbooks
  - 1. By grade
  - 2. By major language group
  - 3. By minority language group
- d. Fiscal resource requirements according to annual recurrent and capital expenditures compared with base figures for 1977/78. The fiscal estimates include changes in secondary and higher education.
  - 1. Total annual recurrent and capital costs.
  - 2. Total annual recurrent and capital costs as a percent of anticipated GNP. Analysis will probably indicate a significant increase in the proportion of GNP devoted to education since the growth in GNP will likely not be sufficient to maintain the current 1.90 percent of GNP.
  - 3. Total annual recurrent and capital costs as a percent of anticipated government

revenues. With no change in the relationship between GNP and government revenues, the share of government revenues devoted to education will probably increase dramatically over the present level of about 16 percent.

4. Identification of major gaps in meeting the required number of primary schools, teachers and texts through a comparison of planned activities by DRA, IBRD, WFP, and others. Examine the extent to which AID resources could be relied upon to fill the gap. Total resource requirements to eliminate the gap are likely to exceed AID's capacity to come up with the financial and technical resources. This analysis will undoubtedly lead to a reassessment of the model's assumptions and require consideration of major alterations in the underlying parameters of the education system. This means identifying intervention points in the system where changes will have the greatest impact on internal and external efficiencies. Key areas include:

- a. School construction cost
- b. School construction time
- c. Teacher training cost
- d. Teacher training time
- e. Selection of teachers

IV. Selection of most cost-effective alternatives in primary school construction and teacher training to enhance internal and external efficiencies

A. School Construction

1. Possible alternatives in school construction include the following:<sup>(1)</sup>

- a. Simplification of school design to reduce the total cost of building a school. Most of the cost of a school in Afghanistan is in the roof and the joinery. Therefore, the greatest savings will stem from a school design which significantly alters these costs.
- b. Reductions in the number of days required to construct schools. Present school designs and materials' procurement lengthen the amount of time

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(1) Their impact on capital expenditure requirements and ability to meet 60 percent enrollment objective should be tested by running them back through the simulation model developed under III.

required to construct schools. Also certain design features such as the poured concrete beams in the AID financed schools in Kandahar result in inefficient labor utilization, since the work force is idled while the concrete beams dry.

c. New construction techniques such as construction centers to produce prefabricated materials for schools may improve the efficiency with which schools can be built. This technique remains untested in Afghanistan, although the potential impact appears great. Such centers would make optimum use of scarce skilled construction labor.

## 2. School construction criteria

### a. Design selection criteria

1. Lowest cost per square meter
2. Lowest mandays per square meter, particularly the number of skilled mandays.
3. Lowest annual maintenance requirements both in terms of costs and skilled labor inputs.
4. Greatest life expectancy and hence lowest present value of costs.

b. Siting and location of schools criteria - optimum placement of schools considering.

1. Demographic characteristics
  2. Physical characteristics
  3. Availability of potable water
- c. Economies of scale criteria - selection of construction techniques and designs which allow for significant savings in costs and the utilization of scarce materials and labor resources. Examples of ways to realize economies of scale are the decision by USAID, DRA, and WFP to agree to a unified school construction program and the discussion to develop construction workshops or centers.

B. Teacher Training both pre-service and in-service

1. Possible alternatives in teacher training to improve internal and external efficiency include the following:<sup>(1)</sup>
  - a. Alternatives to improve instructional quality and relevancy and reduce wastage.
    1. Emphasis on teaching methodology rather than content.
    2. Emphasis on key aspects of the curriculum most likely to be relevant to the lives of the majority of the people.

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(1) (Their impact on recurrent costs and reductions in wastage should be tested by running them back through the simulation model developed under III).

3. Integration of textbooks and teacher training
  4. Reliance upon educational technology (i.e. radio) to improve instructional quality.
- b. Alternatives to reduce the costs and time associated with teacher training.
1. Reduction of years of training from 2 to 1.
  2. Elimination of the secondary education requirement for admittance into teacher training.
  3. Concentration on the essential things a teacher at the primary level needs to know in order to be able to effectively teach. De-emphasize the post-secondary curriculum at the Teacher Training Institutions.
- c. Alternatives to lower recurrent costs associated with instructional staff and buildings.
1. Double shifting of staff which results in a less than doubling of instructional staff.
  2. Full-year operation of schools.
  3. Increase in the student teacher ratio.
  4. Reliance upon trained teachers with less than 12 years of education.
2. Teacher Training Criteria
- a. Selection of that alternative which has the greatest impact on student learning at the

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- a. Selection of that alternative which has the greatest impact on student learning at the

primary level.

- b. Selection of that training approach which is the least cost way to achieve the maximum learning gain among primary school students.
- c. Selection of that training approach which leads to the attainment of the 60 percent enrollment objective in the shortest period of time.
- d. Selection of that alternative which minimizes recurrent costs associated with instructional staff.

it should be noted that the benefits to be derived from improvements in teacher training will largely flow from a more relevant education reaching children. The number of instructional years required to achieve a functional basic education will go down. On the other hand the annual per student cost is likely to go up. For example, the radio math project in Nicaragua resulted in higher annual instructional costs. However, the qualitative improvements in student math achievements significantly reduced wastage rates. Reductions in wastage in turn lowered the number of instructional years to produce a primary school graduate. Thus, the total cost of educating a child at the primary level fell.