

JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)

EDUCATION DEPARTMENT, N.W.F.P.
THE ISLAMIC REPUBLIC OF PAKISTAN

**BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR THE IMPROVEMENT
IN THE PRIMARY EDUCATION
AND
THE PROJECT FOR ESTABLISHMENT
OF TEACHERS' TRAINING COLLEGE FOR FEMALE
AND PROVISION OF EDUCATIONAL EQUIPMENT
FOR
THE NORTH-WEST FRONTIER PROVINCE
IN
THE ISLAMIC REPUBLIC OF PAKISTAN**

March, 1994

NISSOKEN ARCHITECTS/ENGINEERS

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PREFACE

In response to a request from the Government of the Islamic Republic of Pakistan, the Government of Japan decided to conduct a basic design study on the Project for the Improvement in the Primary Education and the Project for Establishment of Teachers' Training College for Female and Provision of Educational Equipment for the North-West Frontier Province, and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Pakistan the first field survey team headed by Mr. Shuji Ono, Second Basic Design Study Division, Grant Aid Study and Design Department, JICA, from September 13 to October 12, 1993, and the second field survey team headed by Mr. Seiji Utsumi, Development Specialist in Educational Technology, JICA, from December 3 to 20, 1993, both constituted by members of NISSOKEN Architects/Engineers.

The team held discussions with the officials concerned of the Government of Pakistan, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Pakistan in order to discuss a draft report, and as the result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Islamic Republic of Pakistan for their close cooperation extended to the team.

March, 1994



Kensuke Yanagiya

President

Japan International Cooperation Agency

March, 1994

Mr. Kensuke Yanagiya,
President
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for the Improvement in the Primary Education and the Project for Establishment of Teachers' Training College for Female and Provision of Educational Equipment for the North-West Frontier Province in the Islamic Republic of Pakistan.

This study was conducted by NISSOKEN Architects/Engineers, under a contract to JICA, during the period September 1, 1993 to March 28, 1994. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Pakistan and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

We wish to take this opportunity to express our sincere gratitude to the officials concerned of JICA and the Ministry of Foreign Affairs. We would also like to express our gratitude to the officials concerned of the NWFP Education Department, the JICA Pakistan Office, and the Embassy of Japan in Pakistan for their cooperation and assistance throughout our field survey.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

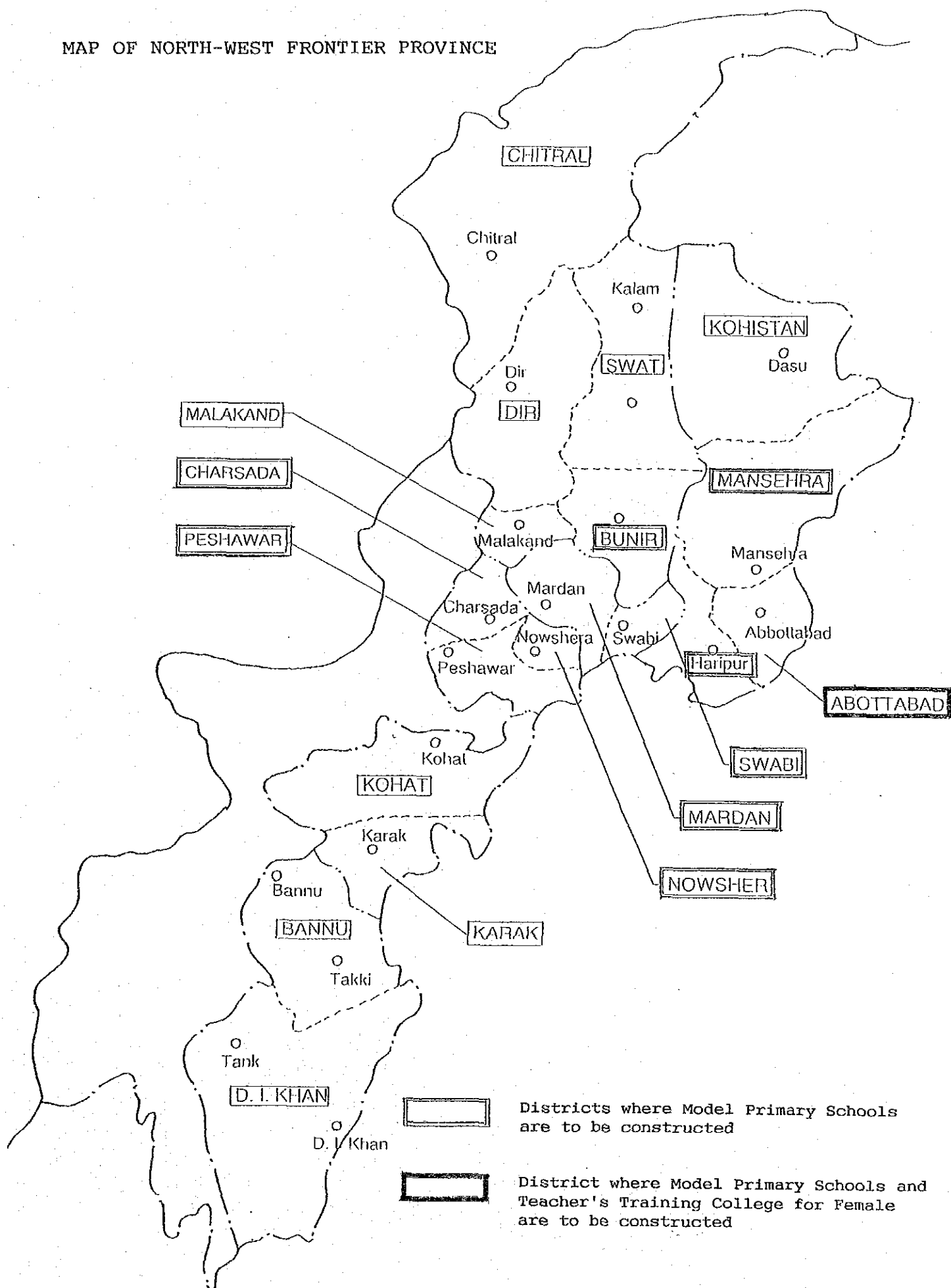


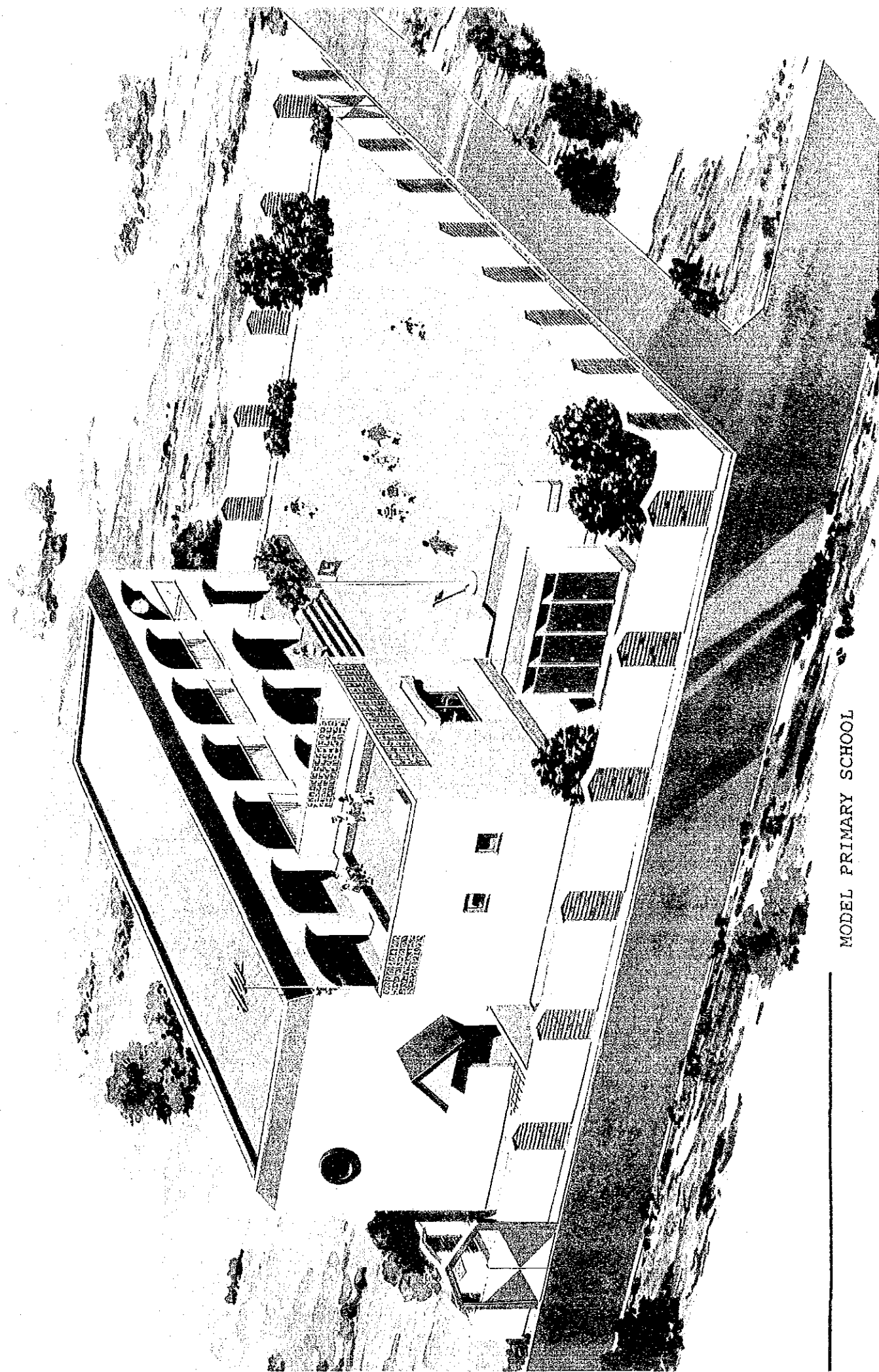
Kazunari Shirai

Project manager,
Basic design study team on the Project for
the Improvement in the Primary Education and
the Project for Establishment of Teachers'
Training College for Female and Provision of
Educational Equipment for the North-West
Frontier Province in the Islamic Republic
of Pakistan.

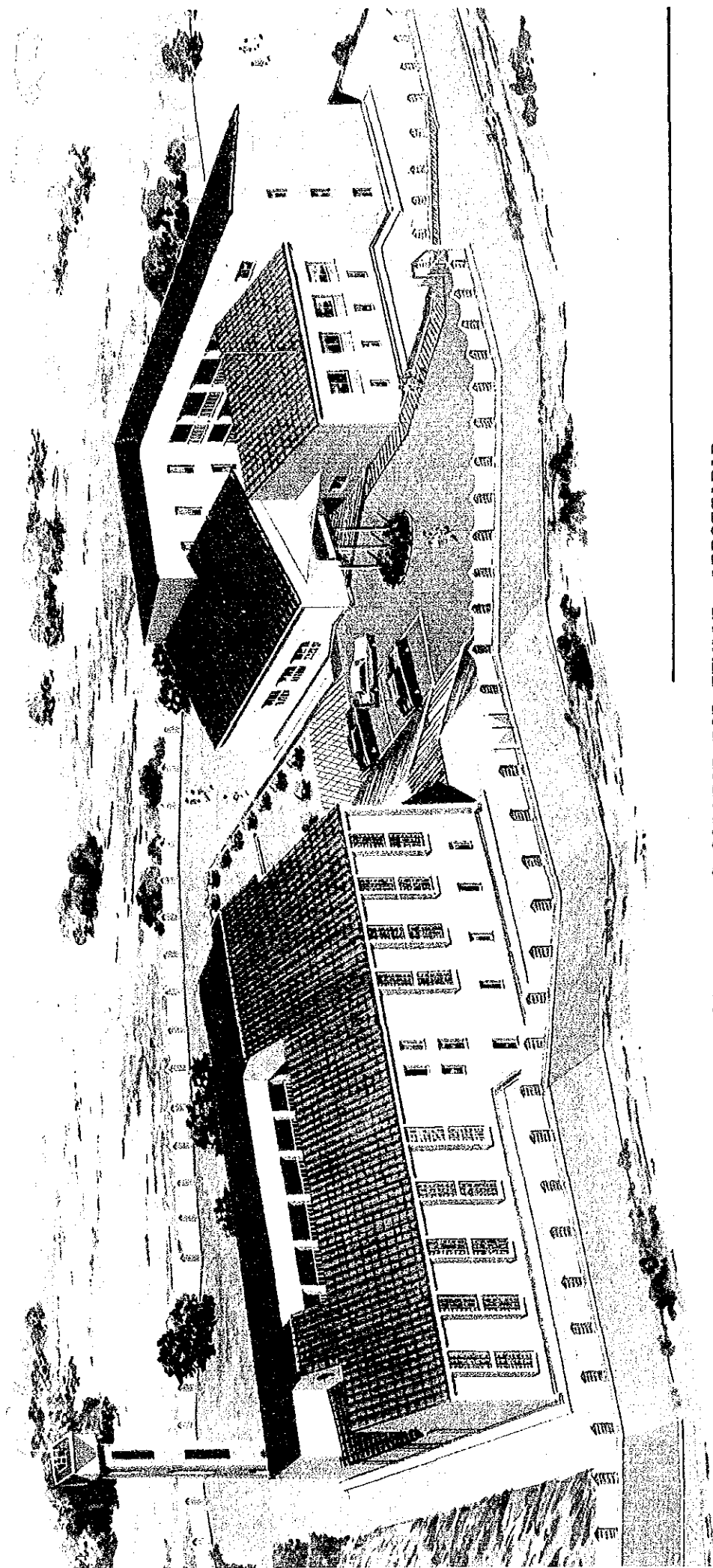
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MAP OF NORTH-WEST FRONTIER PROVINCE





MODEL PRIMARY SCHOOL



TEACHERS' TRAINING COLLEGE FOR FEMALE, ABBOTTABAD

BASIC DESIGN STUDY REPORT
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SUMMARY

The adult literacy in Pakistan stands at 29.6% (1985), while the enrollment in primary education stands at 64% for boys and 33% for girls (1985). These figures are the lowest in Asia after Afghanistan and Bhutan. Among the provinces within Pakistan, the enrollment rate in the Northwest Frontier Province (NWFP), along with that in Baluchistan, falls behind those in other provinces. The low enrollment rate among girls in rural areas is also to be noted. While there were 1.38 million children enrolled in schools in 1992, the number of children not attending school was as high as 1.5 million. Along with the unsatisfactory curriculum, low quality of teachers, poverty and lack of understanding on the part of the parents, the reasons given for the low enrollment include the shortage of school facilities and equipment.

Primary education in Pakistan lasts for five years and is not compulsory. There are no special tests for moving up to the next grade and promotion is usually automatic. Because of the Islamic tradition of separate education for boys and girls, all the public schools are classified as either boys' schools or girls' schools, but in practice many of the schools are coeducational regardless of the official classification, especially in rural areas where there may only be schools either for boys or girls.

Besides the province-run "primary schools," schools providing primary education in Pakistan include "mosque schools" attached to mosques and "mohalla schools" run by local communities. As of 1992, NWFP had 10,860 provincial primary schools, 6,373 mosque schools and 72 mohalla schools. The number of private "primary schools" was 237.

A survey of the buildings and equipment at the provincial primary schools revealed that a majority of them had only two classrooms and that as many as 58% of the buildings were in need of repair or replacement. The facilities are poor, and it is frequently the case that, there being no desks and chairs for the pupils, they have to sit on jute cloths laid out on the floor during classes, while many of the classes are in fact held in the open air. Nearly 80% of the schools have no latrines, and even where they exist, a significant number are broken or blocked and are unusable. Only 37% of the schools have drinking water. The facilities at the provincial primary schools are therefore in an extremely poor state both in terms of quantity and quality, and an early improvement of the situation is desired.

A Project Formulation Study Team was sent to Pakistan by JICA in November 1991, to study the needs for assistance in the social sector and to formulate appropriate projects. Pointing out the low level of assistance provided by other donor countries and organisations in the field of education in NWFP despite the greater need found there for such assistance in comparison with Sind and the Punjab, the Study Team recommended that the Japanese Government formulate a "package project" aimed at a comprehensive improvement of primary education, including within its scope the cooperation for improvement of the educational policies and structural reorganisation in addition to the assistance for the construction of the actual school buildings.

It was in the light of the findings of this Project Formulation Study, that the Pakistani Government made a request to the Japanese Government in November 1992 for grant aid cooperation in the implementation of projects including that for the construction of the primary schools, construction of a teacher training college and provision of educational equipment, which were all parts of the recommendation mentioned above.

In response to this request, the Government of Japan decided to implement a Basic Design Study concerning the proposed project, in accordance with which decision, the Japan International Cooperation Agency (JICA) dispatched Field Survey Teams to the host country on two occasions, for a period of 30 days between 13th September and 12th October, 1993, and for a period of 19 days between 3rd and 21st December, 1993.

Upon their return to the home country, the Survey Teams analysed the records of the consultations, the results of the field reconnaissance and the materials collected, for clarification of the background, aim and role of the project, and for a study of its significance, scope and impact, as well as its validity as a grant aid project. The basic design of the project was then drawn up on the basis of these analyses, specifying the construction sites (number of schools), the optimum scale of the project, the details of the facilities and the materials and equipment to be supplied, along with the budget estimates, the implementation schedule and the maintenance plan, and a project evaluation was implemented. The results of these surveys and analyses for items relating to the construction of the model primary schools were compiled in an Interim Report and explanation was provided on these items during the Second Field Survey. Those items relating to the construction of the teacher training college for females and the provision of educational equipment were compiled in a Draft Basic Design Study Report (Draft Report) and the Draft Report Explanation Team was sent to the host country between 28th February and 11th March, 1994.

Since it has been decided that the items covered by the two Field Surveys should be treated as two separate projects, the following report will deal separately with (1) the project for the improvement of primary education (construction of the model primary schools), and (2) the project for the establishment of the teacher training college for females and provision of educational equipment.

(1) Improvement of Primary Education (Construction of Model Primary Schools)

The contents of the request concerning the construction of model primary schools may be summarised as follows.

Facilities: construction of a total of 78 model primary schools (4 to 5 in each district of NWFP), each for 200 pupils and with 12 members of staff; each school to be provided with five classrooms, teachers' room, library, latrines, drinking water equipment etc.

Total floor area: approx. 400 m² (for each school)

Equipment: furniture (blackboards, desks, chairs, cabinets etc.)

Requests were also made for the provision of teaching materials for mathematics and sciences and mobile teaching units. It was decided, however, that investigations on these items should be included under the project for the establishment of the teacher training college for females and provision of educational equipment (See Section (2)).

While segregated education has been the norm in Pakistan, the government is today promoting mixed education with the aim of raising the enrollment rate of girls. The schools established under the present project too are to be coeducational. It has been specified that all the teachers at mixed schools must be female. This is because female teachers can teach both boys and girls, but girls from the third grade upwards cannot be taught by male teachers, while it is not possible for male and female teachers to work in the same schools.

The project also proposes the appointment of teachers with higher qualifications to the model schools. The qualification normally required for teaching in primary schools is the Primary Teacher's Certificate (PTC, acquired through a one-year course taken after completing two years of high school education), but the teaching staff at the model schools are to consist mainly of those with Certificates in Teaching (CT, acquired through a one-year course taken after completing two years of intermediate college), which qualify one to teach also at middle schools. The headteachers are to be selected from among those who have completed one-year teacher training courses after graduating from degree colleges.

The executing agency for the project is the NWFP Education Department. The officer directly responsible is the Director of Primary Education. Each model school will be placed under the jurisdiction of the respective District Education Officers (DEO's). As regards the budgetary provisions for the operation of the schools, the government has given its approval for the plans for the teachers' salaries and allowances, electricity charges, costs of stationary and other costs (total: Rs. 304,000 million per school per annum). It has also been confirmed that the proposed project sites do not overlap with other school construction projects planned by the provincial government itself and those planned with assistance from such organisations as USAID, the World Bank and the Asian Development Bank.

While the factors considered in deciding whether to go ahead with the construction of each school include the number of children in the catchment area, the conditions of the roads, power supply, and water supply and drainage, and the surrounding environment, the factors that were of particular concern under the project were the availability of the sites and teachers.

Most of the sites for primary schools constructed to date have been donated by the local landowners. Under the present project, too, reliance will be made on donations for a significant number of the sites. With a view, therefore, to avoiding future troubles in the acquisition of the sites, it was made a prerequisite in the selection of the sites that each construction site satisfy at least one of the following conditions.

- The site is government-owned and has been approved as a construction site for a primary school.
- The landowner has sworn in writing that he will donate the land to the provincial government free of charge

As has been mentioned above, the model schools are to be staffed solely by female teachers. Since, however, it is very rare in Pakistan for women to leave their homes to work in other areas, the number of qualified teachers in the relevant areas provided another major criterion in the selection of the construction sites. Investigations were therefore conducted on the availability of the various categories of teachers making up the teaching staff, using such statistics as the numbers of past applicants for teaching posts, the numbers of qualified teachers graduating from universities and teacher training colleges and the distribution of their home areas. It was found that there were sufficient numbers of potential female teachers for the model schools with the

required qualifications, and the proposed staffing plan was judged to be realistic.

During the course of the field survey, the number of schools requested was reduced to 70. For the purpose of selecting the sites for these 70 schools, the districts within the province were first ranked according to the levels of priority, and the sites satisfying the various conditions required for construction were then selected within the priority districts. In the investigations for the priority ranking of the districts, conducted using the non-attendance rate, severity of shortage of facilities and levels of interest in education as the criteria, Peshawar District was given the first place, followed by Swat, Mardan, Haripur and Mansehra, in that order. In the investigations on the individual candidate sites, an examination was made of such conditions as the numbers of children not attending school within the catchment areas and the conditions of the access roads, commercial power supply and water supply, with a view to deciding whether to go ahead with the construction of the schools.

While the character of the schools as model schools favours their construction at sites distributed evenly throughout the province, considerations relating to the efficient implementation of the construction work makes it undesirable for the school sites to be spread over too wide an area. This, together with the desire to apply a standard design to provide school buildings with the same specifications, led to the decision to limit the project area on this occasion to ten districts in the central part of the province, and to the selection of the thirty sites listed below. It was made a basic rule to include at least two sites within each district.

(District)	(Site)
1. Peshawar	1. Hayat Abad Phase 1 2. Hayat Abad Phase 3 3. Babu Zai (Shah Alam) 4. Gulbela 5. Masho Kheil 6. Budhni
2. Nowshera	7. Taru Jabba 8. Jaloza 9. Mughulki
3. Charsadda	10. Khashiki Payan 11. New Turlandi 12. Shaki Kulali (Navi Killi) 13. Mera Umar Zai 14. Abdul Ali Killi
4. Mardan	15. Gumbat 16. Karim Abad 17. Fathma
5. Swabi	18. Topi 19. Lahor 20. Adina
6. Abbottabad	21. Bachai Dagi 22. Damthour 23. Mirpur
7. Haripur	24. Bijian

8. Mansehra

9. Battagram

10. Bunir

25. K.T. Ship No.2 Sector

26. Phulra

27. Battal

28. Polabela

29. Agarai

30. Daggar Qila

The buildings are to be made two-storeyed to fit within the standard site area of 2 kanal (approx. 1,000 m²), and six classrooms (including one multipurpose room) will be provided at each school, with corridors running on one side of the rows of classrooms. Each school will be provided in addition with such facilities as the teachers' room and storage space for teaching materials. Excavation of wells will be planned at sites without access to city water supply. For the children's latrines, Indian-style latrines washed by manual means will be used to facilitate maintenance.

(Summary of Basic Design for Construction of Model Primary Schools)

School building: reinforced concrete, two storeys

Floor area: 487 m²

Latrines: brick masonry, one storey

Floor area: 9 m² × 2

Total floor area: 505 m²

Others: well (as required), water tanks, gate, enclosure walls, flag pole, furniture

Should the decision be taken to implement the project under grant aid from the Government of Japan, a period of approximately 5.5 months will be required for the Detailed Design, and a period of approximately 24 months after the conclusion of the Contract with the contractor for the construction work and procurement of materials and equipment. The Japanese Government will be responsible for the costs for the construction of the facilities, while the Pakistani Government will bear the responsibility for site preparation and provision of power and water supply to the sites. The costs of the work to be implemented by the Pakistani Government is estimated at Rs. 2,726,000.

While the direct effect of the model primary school project will be that of approximately 7,000 children being newly enrolled in schools, there are 1.5 million children not attending school in NWFP. As a measure for raising the enrollment rate, the scale of the project is too small, and it has to be concluded that, in quantitative terms, the project will only make a minute contribution to the solution of the problem. However, the high-quality school facilities provided under this project are to function as "model schools," and will provide models pointing the way forward for the improvement on the poor school facilities constructed in the past. Furthermore, the implementation of quality education through use of the school facilities provided and the teaching materials for sciences, will help raise the level of interest in and renew the awareness concerning education at the nearby primary and middle schools and in the communities surrounding them. It will, at the same time, provide a major stimulus to those involved in education in those districts of NWFP which were excluded from the project on this occasion, and in this way, the project may be expected to have a significant impact for the improvement of primary education in the province.

While the implementation of the project will lead to greater opportunities for employment among the qualified teachers, the procurement locally of the construction materials and the implementation of the construction work by conventional methods under the project will mean that there will be opportunities for participation by local construction firms and labourers.

(2) Establishment of Teacher Training College for Females and Provision of Educational Equipment

The request concerning the construction of the teacher training college for females and the provision of educational equipment may be summarised as follows.

Teacher training college:

the construction of a new college with a capacity for 200 students on the PTC (Primary Teaching Certificate) course in the city of Abbottabad (incl. classrooms, laboratories, multi-purpose hall, administrative rooms etc.; total floor area: approx. 2,200 m²)

Attached accommodation facilities:

a student hostel, accommodation for instructors and other members of staff (total floor area: approx. 4,400 m²)

Equipment: teaching materials, audiovisual equipment, clerical and administrative equipment, furniture and utensils etc. (for teacher training college)

teaching materials, audiovisual equipment, clerical and administrative equipment (for model primary schools)

At present, there are seven teacher training colleges for females in NWFP and four more are under construction, aiming at opening in September 1994. All these have a capacity for around 200 students, and most of them offer both PTC and CT (Certificate in Teaching, for middle school teachers). While the proportions of the students on the PTC and CT courses vary from year to year, each college produces 100 or so PTC holders every year. The number of female primary school pupils per qualified teacher in NWFP, as opposed to approximately 38 for male pupils, is approximately 58 (1992), and this figure for female pupils exceeds the standard set by the Pakistani Government (40) by a factor of nearly 1.5. The district of Abbottabad, in particular, has the third highest female pupil-teacher ratio (approx. 75 - urban areas: 45, rural areas: 81) among the 20 districts in NWFP.

Under the Eighth Five-Year National Development Plan (1993/1998), the NWFP Education Department plans to construct approximately 9,500 new primary schools, nearly 70% of which are to be allocated to female pupils. Of these, the number of schools under construction at present and schools whose construction under overseas aid seems guaranteed as things stand now may be estimated at around 4,400. When one adds to these the realistic figures for the increase in the number of classrooms due to the expansion of the existing school buildings, the number of classrooms for female pupils available by the beginning of 1988 is estimated at approximately 22,000. If all these classrooms were to be filled to capacity (40), this would produce a female enrollment rate of approximately 46%.

In a study of the feasibility of such a rise in the enrollment rate, based on the records achieved under the Seventh Five-Year Plan (1988/1993), it was found that the number of female pupils had increased by approximately 210,000 from 280,000 to 490,000 over this five-year period, corresponding to an increase of over 10% in the enrollment rate from 19.7% to 30.1%. This increase corresponds to nearly three times the total capacity (average: 111 per classroom) of the

classrooms for female pupils newly constructed during this period (total: 1,886 classrooms). Under the Eighth Five-Year Plan too, therefore, one can expect a high rate of absorption of female pupils into the newly constructed facilities, and it is thought possible to achieve the above-mentioned enrollment rate of 46%, if the required numbers of teaching staff can be provided.

To fulfil the above plan while maintaining the government-standard pupil-teacher ratio of 40, one will need to supply approximately 15,200 new female teachers by 1988. The supply that can be expected during the corresponding period from the eleven colleges, which are either already in existence or under construction as mentioned above, is approximately 8,700, meaning that there will be a shortfall of 6,500 female teachers. Eleven more teacher training colleges would need to be constructed to make up for this shortfall.

Along with the high pupil-teacher ratio mentioned above, Abbottabad also has the highest enrollment rate and number of female pupils, factors which indicate the high level of interest in education in this district. At the same time a study on the possibility of securing suitable personnel for the principal and instructors at the planned teacher training college revealed that there would be no problems in enlisting the required personnel. In view of the foregoing, it is judged most appropriate to locate the new teacher training college in Abbottabad.

The executing agency for the teacher training college project will be the NWFP Education Department, the section directly responsible being the Bureau of Curriculum Development & Education Extension Services.

The PTC course is a one-year course offered to high school graduate. The course is divided into two semesters and includes ten weeks of teaching practice. For its operation, the college is to have a staff of 35, including the principal, ten regular instructors and one instructor each for physical education and drawing, as well as the administrative staff and the warden for the student hostel. For its operation costs, the NWFP Education Department has included an annual budget of approximately Rs. 1 million to cover both the staff salaries and various expenses in the Concept Clearance Paper and this has been approved by the government.

As the investigations discussed above confirmed the impact and feasibility of the proposed project, as well as the capacity of host country to implement the project, while the expected impact of the project was found to be compatible with the system of grant aid cooperation, it was judged appropriate to implement the proposed project under grant aid cooperation from the Government of Japan.

The city of Abbottabad is the administrative centre of the Hazara Division and has a population of approximately 220,000 (1981). It is located approximately 50 km in a straight line to the north of Islamabad, the capital of Pakistan. By road, it is approximately 130 km from Islamabad and 190 km from Peshawar. Due to its elevation of around 1,220 m, it is relatively cool in summer.

The proposed site for the college is situated on the slope of a hill approximately 6 km north of the centre of Abbottabad, and a tract of government-owned land, with an area of 25 kanal (approx. 12,500 m²), has been allocated for this project. It is located in an educational zone, accommodating three other colleges, a vocational institute and a military academy. While the site is set back from the main road, this is in fact suitable for a girls' college in view of the local social customs. Although the site presents rather difficult construction conditions, being a narrow strip

of sloping ground requiring levelling and with small valleys to the north and south, it is possible to draw up a design that takes advantage of the slopes.

The normal class size at the existing teacher training colleges is fifty. The class size at the proposed college will be reduced to forty to ensure more effective teaching, and the college building will be provided with five classrooms with capacities for forty students, together with an extra classroom for optional subjects, adding up to a total of six classrooms. Laboratories will be provided for chemistry, biology and physics, with their sizes corresponding to the above-mentioned class size, and other rooms too will be provided as requested.

The provision of accommodation facilities will be indispensable for a teacher training college for female students. This is because the social custom in Pakistan (purdah) does not, in principle, allow unmarried girls to live away from their parents, necessitating the provision of safe accommodation facilities in cases like that under the present project. The existing teacher training colleges for females have all, in fact, been provided with such hostels.

(Summary of Basic Design for

Construction of Teacher Training College and Provision of Educational Equipment)

Facilities (total floor area: 4,287 m²)

College building (reinforced concrete, 3 storeys, total floor area: 2,028 m²)

Hostel block (reinforced concrete, 3 storeys, total floor area: 2,259 m²)

Others (well, elevated water tank, pavement, gates, fencing, flagpole etc.)

Equipment

Teaching materials (science and mathematics, and physical education), loud speaker system, VTR unit, OHP, photocopier, vehicles, blackboards, desks, chairs, cabinets, beds, cookers etc.

(For model primary schools) teaching materials (science and mathematics), loud speaker systems, VTR units, photocopiers

Should the construction of the teacher training college for females and the provision of educational equipment be implemented under grant aid cooperation from the Government of Japan, it is estimated that a period of approximately 5.5 months will be required for the detailed design and a period of approximately 12 months after the conclusion of the contract with the contractor for the construction work and the procurement of equipment. The Japanese Government will be responsible for the construction of the facilities and provision of equipment, while the Pakistani Government will be responsible for items of work such as the levelling of the project site and the laying of power and gas lines to the site. The costs to be borne by the Pakistani Government are estimated at approximately Rs. 1,569,000.

The proposed teacher training college for females will be opened in 1996 and will supply 200 PTC holders each year. Assuming that each graduating teacher will teach 40 pupils each year, this means 8,000 children will benefit directly from the project each year.

From 1997 onwards, the graduates from the proposed teacher training college will account for approximately 10.5% of the estimated 1,900 new teachers supplied each year in NWFP, and in 1997, the first graduates from the college will increase the estimated total then of the qualified female teachers in the province (14,360) by 1.4%.

One may also expect the provision of more effective and high-grade education to result from

the use of the high-quality educational equipment supplied under the project at the proposed teacher training college and model primary schools.

As has been mentioned above, the two projects discussed in the present report form a part of the package project proposed by the Project Formulation Study Team. The package project is a comprehensive project, under which the sub-projects that can be implemented are selected from the projects requested by the government of the host country and are implemented according to the programme approach over periods extending over several years. Indispensable for this will be the processes of overall planning, implementation, monitoring and review by the government of the host country. In this connection, considerations will have to be made, for example, for a long-term dispatch of experts capable of providing guidance to the teachers and those involved in the administration of education, as well as of making recommendations for improvements in the educational policies and structures.

A further problem is the low quality of primary school teachers in Pakistan, a situation calling for an urgent improvement of the programmes at the teacher training colleges. In addition to the considerations for ensuring the effective use of the teaching materials provided under the present project, considerations will also have to be made on the adoption of more efficient learning methods, such as group learning. Success in this respect, however, cannot be hoped for unless the teachers themselves are given the necessary experience. Investigations ought therefore be made in future on the linkage of technical cooperation to grant aid cooperation in the approach to the actual implementation of the assistance to the primary education sector in Pakistan.

CHAPTER 1 INTRODUCTION

In its National Education Development Plan (1992/2002), the Government of the Islamic Republic of Pakistan proposes the improvement of the national level of education and greater enrollment in primary education as a basis for future national development. The enrollment in primary education remains low, however, especially in the Northwest Frontier Province (NWFP), due to the shortage of educational facilities and teaching staff. It was with the aim of making the necessary improvements here that the Government of the Islamic Republic of Pakistan made a request to the Government of Japan for grant aid cooperation in the establishment of primary schools (78 schools) and a teacher training college for females, together with the provision of educational equipment.

In response to this request, the Government of Japan decided to implement a basic design study, in accordance with which decision, the Japan International Cooperation Agency (JICA) dispatched the First Field Survey Team, led by Mr. Shuji Ono (Second Basic Design Study Division, Grant Aid Study & Design Department, JICA), to the host country for a period of 30 days between 13th September and 12th October, 1993. This was then followed by the dispatch of the Second Field Survey Team, led by Mr. Seiji Utsumi (Development Specialist, Educational Technology), for a period of 19 days between 3rd and 21st December, 1993. It was decided that this First Field Survey should deal with those items relating to the construction of the primary schools, the remaining parts of the request being left to the Second Field Survey.

In the meetings with their counterparts, the Survey Teams explained the workings of the Japanese Grant Aid Programme, received confirmation on the background and scope of the request and ascertained the scope of the project, the organisational structures for the implementation of the project and for management and maintenance after its implementation, and the proposed construction sites. This was followed by various surveys, including field reconnaissance in the project area and a survey of the existing facilities, as well as consultations with the NWFP Education Department, the executing agency in the Government of the Islamic Republic of Pakistan, and other relevant agencies, concerning the basic preconditions for the project and other basic items.

Upon their return to the home country, the Survey Teams analysed the records of the consultations, the results of the field reconnaissance and the materials collected, for clarification of the background, aim and role of the project, and for a study of its significance, scope and impact, as well as its validity as a grant aid project. The basic design of the project was then drawn up on the basis of these analyses, specifying the construction sites (number of schools), the optimum scale of the project, the details of the facilities and the materials and equipment to be supplied, along with the budget estimates, the implementation schedule and the maintenance plan. The results of these surveys and analyses were compiled in the Draft Basic Design Study Report and the Draft Report Explanation Team, led by Mr. Shuji Ono mentioned above, was sent to the host country between 28th February and 11th March, 1994. The Explanation Team presented and explained the Draft Report to those concerned in the Government of the Republic of Pakistan, and a basic agreement was reached between the governments of the two countries. The results of the field surveys and the analysis work carried out in the home country have now been compiled in

this Basic Design Study Report.

The Survey Team set down the records of the consultations held with their counterparts in the Government of the Islamic Republic of Pakistan during the Field Surveys and the Draft Report Explanation in the Minutes of Discussions, which were signed and exchanged by the representatives of the two parties. The Minutes of Discussions, a list of the survey and explanation team members, the schedule of the field surveys and a list of interviewees are given in the Appendices.

CHAPTER 2 BACKGROUND OF THE PROJECT

2-1 Basic Education in Pakistan

According to figures given by UNESCO, the adult literacy in Pakistan, at 29.6% (1985), is among the lowest in Asia.

The literacy rates in Pakistan are given in the table below according to provinces and sexes. NWFP is found in the third place (Islamabad excluded), behind the two provinces of Sind and the Punjab. The disparity between the sexes is also to be noted.

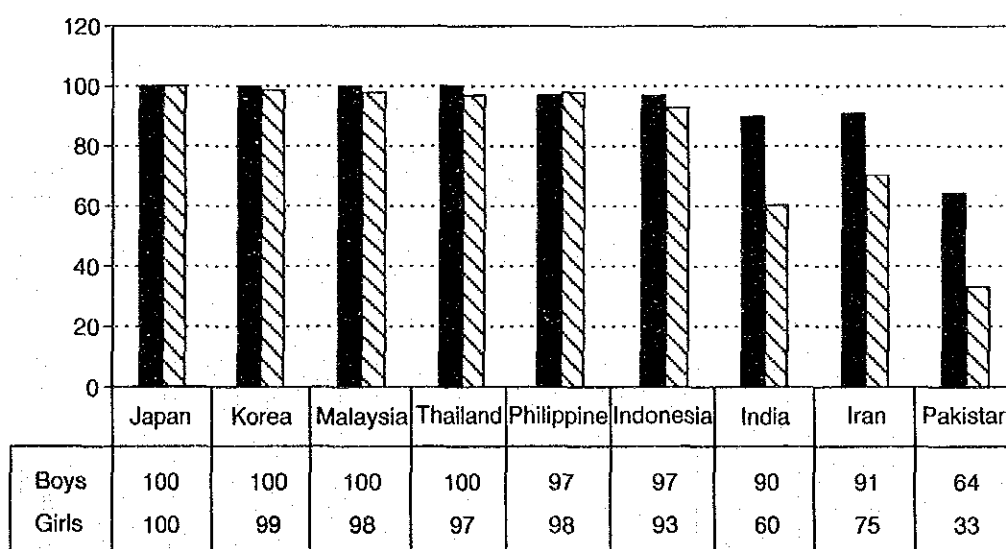
Literacy in Pakistan according to Provinces (1981)

	National	NWFP	FATA	Punjab	Sind	Baluchn.	Islamabad
Male	35.05	25.85	10.93	36.82	39.74	15.20	63.13
Female	15.99	6.48	0.79	16.81	21.64	4.32	37.48
Both Sexes	26.17	16.38	6.38	27.43	31.45	10.32	51.75



Source: 1981 National Census

The statistics on school enrollment in the figure below show the enrollment in Pakistan to be among the lowest in Asia.

Enrolment Comparison in Asian Countries (1st level, 1985)

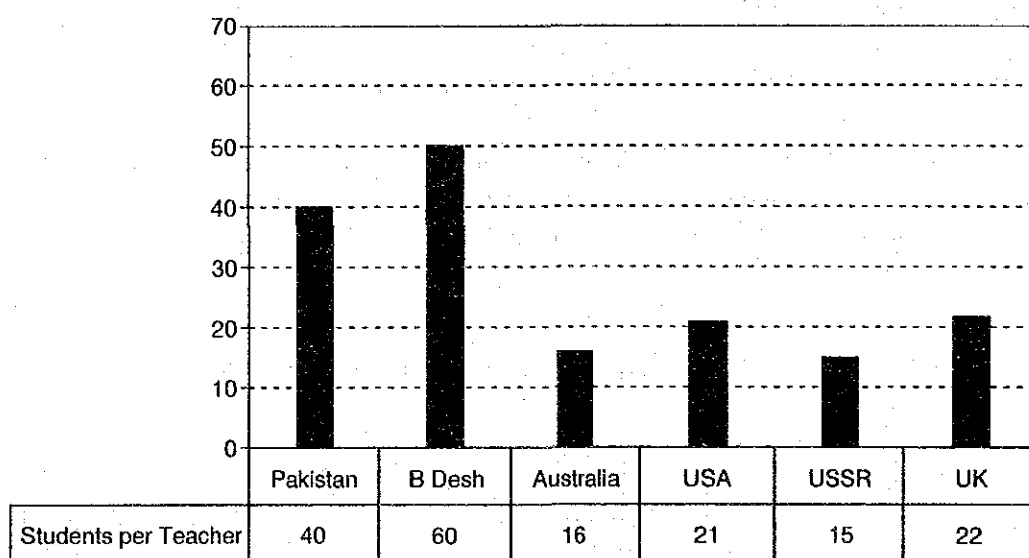


Source: UNESCO/NEC&CBE(1985)/NEMIS

 Boys
 Girls

The average student-teacher ratio of 40 to 1 is extremely high, and is about twice the ratio found in the developed countries.

Student Teacher Ratio Comparison (1990)



Source: PO Grobe 4.0 (1990)/NEMIS

2-2 Primary Education in NWFP

The numbers of various types of schools providing primary education in NWFP are shown below. Provincial primary and mosque schools account for the vast majority (97.6%). It may also be seen that most of the mosque schools are all-male schools, while among the provincial primary schools, too, two-thirds are all-male schools and less than 1% are mixed. According to our sources, however, there are cases in practice, where girls are found attending boys' schools and vice versa.

Schools Providing Primary Education in NWFP (1992)

		Provincial	Other Govt.	Private	Unknown	Total
Mosque Schools	Boys	6,204	14	6	15	6,239
	Girls	48	0	0	0	48
	Mixed	77	1	4	3	85
	Unknown	0	0	0	1	1
Mohalla Schools	Boys	27	0	0	0	27
	Girls	44	1	0	0	45
	Mixed	0	0	0	0	0
	Unknown	0	0	0	0	0
Primary Schools	Boys	7,302	22	69	10	7,403
	Girls	3,477	10	37	11	3,535
	Mixed	78	9	131	5	223
	Unknown	3	0	0	0	3
Total		17,260	57	247	45	17,609

Source: NEMIS

Statistics on the state of the facilities and equipment at the provincial schools are given below. While only 3.3% are totally without buildings among the "primary schools" proper, the buildings at as much as 58% of them are in "poor" or "dangerous" conditions and require repair or replacement. It is also to be noted that nearly 80% of the schools do not have latrines.

Buildings and Equipment at Provincial Schools in NWFP

	OK	Poor	Dangerous	None	Unknown	Electricity	Water	Latrines
Mosque Schools	1,126	724	196	2,790	1,493	1,041	2,007	161
Mohalla Schools	14	28	1	21	7	22	34	18
Primary Schools	4,076	5,227	1,022	354	179	2,378	4,021	2,401
Total	5,216	5,979	1,219	3,165	1,679	3,441	6,062	2,580

Source: NEMIS

According to the same NEMIS (National Education Management Information System) data, the total number of classrooms at the provincial schools in NWFP was 27,842, making for an average of 2.56 classrooms per school. The visits to a number of these schools during the field reconnaissance showed that the facilities in fact were extremely poor, and it is frequently the case that, there being no desks and chairs for the pupils, they sit on jute cloths laid out on the floor during classes, while many of the classes are held in the open air.

Statistics on the enrollment rates and student-teacher ratios are given below. The enrollment rate is particularly low among girls. Seen according to districts, the enrollment is abnormally low in Kohistan, as mentioned below, at 8.8% (both sexes). The enrollment in the other districts range from 33.1% in Bannu to 64.1% in Kohat.

Numbers of Pupils and Teachers in Primary Education in NWFP (1992)

	School-age children (4 to 9)	Children attending school	Enrollment rate	Teachers	Pupil-teacher ratio
Boys	1,741,183	1,122,249	64.45 %	35,657	31.5
Girls	1,636,989	492,329	30.08 %	11,978	41.1
Total	3,378,172	1,614,578	47.79 %	47,635	33.9

Source: EMIS (unqualified teachers included in the numbers of teachers)

The Project Formulation Study Report (see Section 2-4) gives the following as reasons for the low enrollment, as gathered from interviews with educational experts in Pakistan.

- 1) Schools are unattractive to children.
 - a. There are too many pupils to a class.
 - b. There is a shortage of playgrounds.
 - c. The classes, consisting of repeated rote-learning and tests, are boring.

- d. The classes are centred on textbooks and neglect the pupils' experiences and experiments.
 - e. The curricula are too heavy, resulting in cramming.
 - f. The teachers are authoritarian and do not give the pupils sufficient freedom.
 - g. The teachers are underqualified and untrained, and cannot give lessons that are interesting for the pupils.
 - h. The low social status and wages of the teachers discourage gifted persons from becoming teachers. The actual teachers have often been forced into teaching by the lack of other employment and, as such, are unenthusiastic.
 - i. The school rules are too restrictive and force obedience on the pupils.
- 2) Parents do not allow their children to attend school.
- a. The parents are often too poor to pay the school fees.
 - b. Poor parents need their children to work and earn money.
 - c. The parents need their children to help them in farm and household work.
 - d. The parents do not understand the need for and usefulness of education (esp. in the case of poor parents, and education of girls).
 - e. In the case of girls, the parents do not wish their daughters to attend classes taught by male teachers they do not know well.
 - f. There are often no schools within safe reach of the homes.

The promotion rates from the first to the second year were only 37% in urban areas and 29% (22% among girls) in rural areas of NWFP in 1983-1984 (according to the Project Formulation Study Report). Recent statistics show an improvement in this respect, with more than a doubling of the figures, as can be seen below.

Promotion Rates in Primary Education in NWFP (1991 to 1992)

		Kachi ↓ CL 1	CL 1 ↓ CL 2	CL 2 ↓ CL 3	CL 3 ↓ CL 4	CL 4 ↓ CL 5
Boys	Promotion Rate	81.4	85.7	87.0	88.3	83.6
	Repetition Rate	9.8	8.3	8.0	7.3	7.0
	Dropout Rate	8.8	5.9	5.0	4.4	9.5
Girls	Promotion Rate	73.7	80.6	85.8	84.1	86.8
	Repetition Rate	11.6	9.6	9.7	9.6	8.4
	Dropout Rate	14.7	9.8	4.5	6.2	4.8
Both sexes	Promotion Rate	79.2	84.4	86.7	87.3	84.3
	Repetition Rate	10.3	8.7	8.4	7.9	7.3
	Dropout Rate	10.5	7.0	4.9	4.8	8.4

Source: EMIS CELL, NWFP Primary Education

2-3 Development Plan for Primary Education in NWFP

The following policies were set out for primary education in the Seventh NWFP Five-Year Plan (1988-1993).

- a) improve equity by making access to primary education universal;
- b) increase the rate of literacy through expansion and improvement of primary education, paying special attention to the participation of girls;
- c) reduce the gender bias in primary education by narrowing disparities between boys and girls in access to educational facilities;
- d) motivate the private sector to play an active role;
- e) improve physical facilities by providing buildings for shelterless schools, by adding classrooms in overcrowded schools and by equipping them with furniture and human resources;
- f) open up recruitment possibilities for graduates as teachers;
- g) abolish the maximum age limit for recruitment for local teachers in their areas;
- h) improve text books; and
- i) *improve data collection systems for generating reliable statistics.*

While these policies are being continued under the Eighth NWFP Five-Year Plan (1993-1998), the emphasis under the new plan has been on the improvement of the enrollment rate for girls, reduction of the numbers of pupils dropping out mid-course, and the reduction of the unnecessary expenditure. The central policies under the Eighth NWFP Five-Year Plan are discussed below.

1. Promotion of mixed education

- A greater number of girls' schools will be established and these will be made open also to boys. The separate educational systems that exist for boys and girls will be abolished to reduce expenditure. A public notification has been made to the effect that there are no impediments against girls attending boys' schools and vice versa. Mixed classes are, in fact, already found at 37% of all the primary schools in NWFP and in Abbottabad District, for example, girls account for 43% of the pupils at boys' schools. The schools newly constructed in areas where there are no strong objections to mixed education will no longer be given sexual designation. It is expected that there will 442 such schools by 1995.
- In the administrative system for primary education too, investigations will be made on the steps to unify the posts of the separate officers from the District Education Officers downwards that exist for males and females. This measure is to be in effect by 1995.

2. Provision of more female teachers

The segregated schooling system in effect at present requires the placement of female teachers at girls' schools. This requirement is not difficult to satisfy in urban areas, but

difficulties are encountered in rural areas and especially in the remoter parts of the province. Despite the larger number of schools newly founded in rural areas, there are shortages in these areas of females who hold teaching qualifications and are willing to teach. The target under the Eighth Five-Year Plan is to increase the supply of female teachers by 10% each year. For this purpose, plans are now under way to encourage retired female teachers to return to teaching posts, to relax the provision that boys' schools should be staffed solely by male teachers and girls' schools by female teachers, to lower the qualifications required for entrance to teacher training colleges, and to provide training by mobile teaching units for prospective female teachers in remote areas.

3. Improvement of procedures for selection and acquisition of school sites

The selection of the school sites is a major factor affecting the enrollment and promotion rates of female pupils. If the sites selected lack access roads, are too distant or are unsafe, girls will be discouraged from attending the schools. The NWFP government has decided that 50% of the newly established primary schools should be constructed at sites determined on the basis of the needs calculated from statistical data. With the aim of minimising the delays and political interference in the selection and acquisition of schools sites and construction of school buildings, District Education Boards will be established to monitor the selection procedures and the progress of the work and to remove the causes of the delays and hindrances. Measures will also be taken to ensure the early opening of the proposed schools, for example through temporary lease of existing buildings while waiting for the acquisition of sites and completion of school buildings.

As a further measures, two-shift systems will be introduced where possible at the existing schools. This will lead to an increase in the capacities of the schools without raising the expenditure for construction costs. A Construction Advisory Unit has been established at the NWFP Directorate of Primary Education to ensure improved efficiency in school construction.

4. Rationalised appointment of teachers

The frequent transfer of teachers from one post to another prevents teachers from making full use of their leadership and teaching capabilities. A system for computer processing of data on individual teachers (years since appointment to the present post, frequency of past transfers etc.) is to be put into operation during 1993 (fiscal) with the aim of rationalising the procedures for appointment and transfer of teachers and is to be made available for use at the District Education Offices etc. There are plans also to input data on students on PTC courses into the system.

5. Promotion of private sector activities

An enlargement in the role of the private sector will lead to a reduction of the financial burden on the government and to improved educational opportunities. With the aim of promoting private sector education, the NWFP government has established the Frontier Education Foundation, which is funded by the provincial government and USAID. The foundation aims to promote private sector activities through policies for encouraging the expansion of private education for female pupils and in rural areas, where the needs are the greatest.

6. Improvement of data base and Education Management Information System

The lack of reliable education-related information has in the past hindered the efficient implementation and experience-based improvement of education management in NWFP. A computer system, called the Education Management Information System (EMIS) has

now been developed and is being used by the Directorate of Primary Education.

As in other provinces, the EMIS for NWFP should be linked to the National Education Management Information System (NEMIS), which is under development. (At present, NEMIS deals only with statistical data on the numbers of pupils.) EMIS is to be fully operational with computers installed at each Sub-Divisional Education Office during the first half of 1994.

2-4 Outline of the Request

As a result of a study on the assistance being provided to Pakistan by various countries, which was conducted over a period of approximately one year starting in December 1989, JICA named the social sector, and primary education and basic medical care in particular, as the area in which future assistance from Japan should be concentrated, and pointed out that training of personnel and expansion of primary health care were indispensable for the medium to long-term socioeconomic development of Pakistan. This need for the expansion of the social sector was reiterated by the Mission for High Level Policy Dialogue, led by Mr. Muto, which was sent to Pakistan in December 1990.

It was under these circumstances that a Project Formulation Study Team was sent to Pakistan by JICA in November 1991, to study the needs for assistance in the social sector and to formulate appropriate projects.

This Study Team recommended that the Japanese Government formulate a package project for assistance in the field of primary education in NWFP, pointing out as the reasons the fact that, in comparison with Sind and the Punjab, the level of the assistance provided by other donor countries and organisations in the field of education in NWFP was low, while there was a high need for such assistance there. The recommendation, aimed at a comprehensive target of the improvement of primary education, proposed not only assistance in the construction of the actual school buildings, but also the improvement of the educational policies and structural reorganisation to ensure that the facilities thus provided are put to effective use, and suggested the implementation of technical cooperation for this purpose.

It was in the light of the results of this Project Formulation Study, that the Pakistani Government made its request to the Japanese Government for grant aid cooperation in the implementation of projects including that for the construction of the primary schools, which was a part of the recommendation mentioned above.

Under the concept for primary schools in this project, properly equipped schools were to be established as "primary model schools" at selected sites within NWFP and quality education was to be provided at these schools through deployment of highly-qualified teachers. Four to five such schools, each with 200 or so pupils and 12 teachers, were to be established in each district (at the district and tehsil headquarters and other major cities and town). Each school would be provided, besides with five classrooms, with such facilities and equipment as a teachers' room, a library, latrines, drinking water, desks and chairs for pupils and teaching materials for mathematics and sciences. It was in accordance with this concept that the request was made for cooperation in the establishment of a total of 78 schools with their sites covering all the districts of NWFP.

Scope of Request (for each primary school)

- Facilities: five classrooms (each 25 ft by 18 ft)
Teachers' room, library, latrines, drinking water equipment
Total floor area: approx. 400 m²
- Equipment: furniture (blackboards, desks, chairs, cabinets etc.)
teaching materials for mathematics and sciences (56 types)
mobile teaching units

On the grounds that there is a shortage of facilities for training of female primary schools teachers in NWFP, a request was also made for the construction of a new teacher training

college for females (with a student hostel) in the city of Abbottabad. The college, with a staff of 35, was to cater for 200 students on the PTC (Primary Teaching Certificate) course. The contents of the original request may be summarised as follows.

Summary of Request (for Teacher Training College)

Teaching facilities:

classrooms ($\times 7$), laboratories ($\times 3$), library, multi-purpose hall, gallery, principal's office, instructors' room, administration staff room, common room etc.

Total floor area: approx. 2,200 m²

Accommodation facilities

hostel for students (dormitories, common room, dining hall, dispensary, warden's room etc.)

Total floor area: approx. 3,100 m²

accommodation for instructors, accommodation for staff

Total floor area: approx. 1,300 m²

Equipment: furniture (blackboards, desks, chairs, cabinets, beds etc.), teaching materials for mathematics and sciences, physical education equipment, books, audiovisual equipment, clerical equipment, utensils for students' hostel, vehicles etc.

CHAPTER 3 OUTLINE OF THE PROJECT

3-1 Appropriateness of the Project

The state of primary education in NWFP has been discussed in Chapter 2. There is a serious shortage of school facilities, giving rise to a strong demand for construction and repair of school buildings.

Even if all the 78 schools named in the request were constructed under the project, this would have little impact, in simply quantitative terms, in solving the problem of the 1.5 million children not attending school in NWFP. The significance of the project lies rather in the impact these model schools would have for the qualitative improvement of primary education in each district by providing models for and as places for experiments on how primary schools should operate. In this regard, the project is deemed appropriate, while the organisational structure for its execution in the Pakistani Government is deemed satisfactory. It is therefore thought appropriate to implement the project wherever the necessary conditions exist with regard to such items as the availability of the sites and the construction conditions, availability of teachers, adequate number of pupils and reception on the part of the local residents.

3-2 Executing Agency and Operational Structure

Education in NWFP falls under the jurisdiction of the Education Department in the provincial government in Peshawar. The Ministry of Education in the federal government is responsible for devising and promulgating, as well as monitoring and assessing the application of, the national educational concepts, policies and standards, but the powers pertaining to and the responsibilities for their execution lie with the provincial governments.

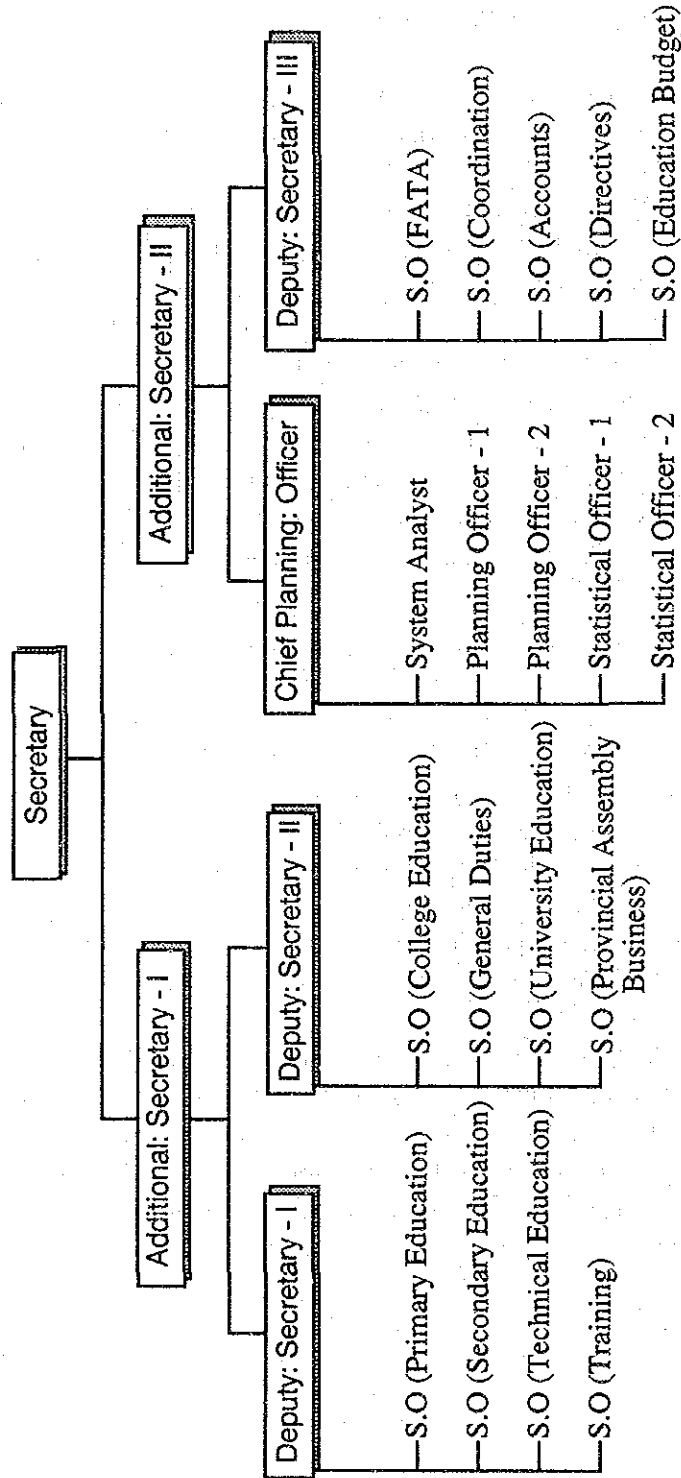
The executing agency for the project under discussion will, therefore, be the NWFP Education Department, the officer responsible in the headquarters of the NWFP Education Department being the Chief Planning Officer and that in the ancillary sections being the Director of Primary Education.

Primary education in NWFP is the responsibility of the Director of Primary Education, who is assisted by the District Education Officers (DEO) appointed for each district, respectively for male and female pupils. Under these, there are the Sub-Divisional Education Officers (SDEO) for male and female pupils in each tehsil, as well as the Assistant SDEO's for each markaz.

The number of those working in the primary education sector, from the Director of Primary Education downwards, has been reported at 74,556 (1992).

Organization Chart

Education Department (Secretariat Level)



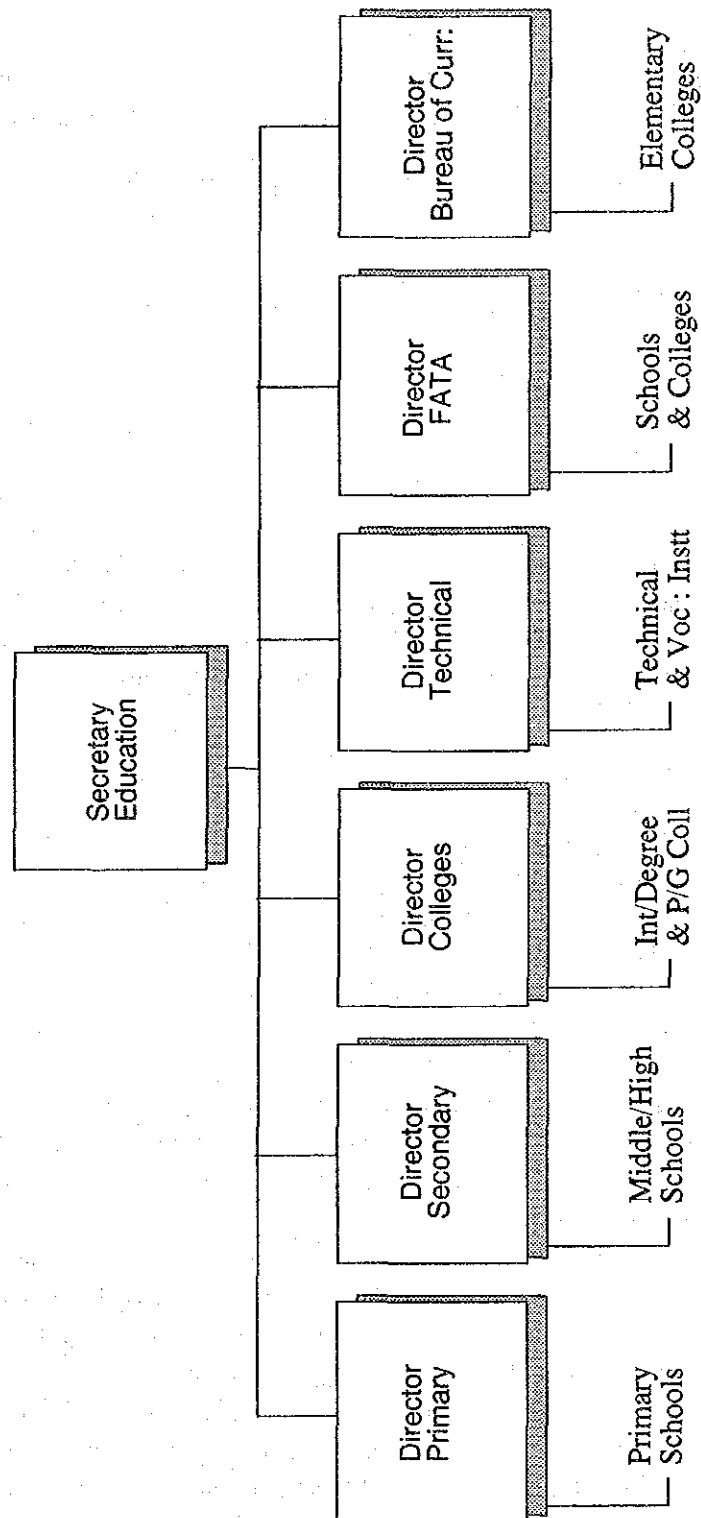
S.O : Section Officer

FATA: Federally Administered Tribal Area

Directorate Level Chart to be included.

Organization Chart

NWFP Education (Attached Deptts:)



The annual expenditures for the primary education sector in NWFP, which may be divided into recurring costs and development costs, are as follows.

Year	Recurring costs		Development costs	
	Expenditure	Percentage in expenditure on education	Expenditure	Percentage in expenditure on education
1988	909.876	43.4 %	174.136	37.1 %
1989	855.411	40.6	213.537	42.5
1990	1,200.466	46.9	173.164	29.6
1991	1,559.694	49.3	296.315	39.8
1992	1,774.812	48.4	1,007.248	68.3

It may be seen that the recurrent costs for primary education account for around 45% of the total annual budgets for education (around 11% of the total provincial budget). There are major fluctuations in the development costs, which are thought to be due to the trends in the assistance from various donor countries. There was a sudden increase in the figure for 1992, but this is the budget figure and it is not known if this amount was spent in reality.

3-3 Plan of Operation

While the Islamic tradition of Pakistan has encouraged segregated education in the past (although many schools are in fact mixed), the government is today promoting mixed education and the schools established under the present project are to be coeducational. All the teachers at mixed schools must be female. This is because female teachers can teach both boys and girls, but girls from the third grade upwards cannot be taught by male teachers, while it is not possible for male and female teachers to work in the same schools.

Besides the provision of improved facilities, appointment of teachers with higher qualifications to the schools as model schools is planned under the present project. The qualification normally required for teaching in primary schools is the Primary Teacher's Certificate (PTC), acquired through a one-year course taken after completing two years of high school education. The teaching staff at the model schools planned under the present project are to consist mainly of those with Certificates of Teaching (CT), which are acquired through a one-year course taken after completing two years of intermediate college and which qualify one to teach also at middle schools, and are to have the composition shown below.

This, however, does not imply that all primary schools should have such teaching staff in future. There are no clearly-defined policies concerning future treatment of teaching staff with PTC's, and the policy adopted here should be understood as an experimental measure, or an attempt to make a breakthrough in the present unsatisfactory state of primary education.

Staffing Plan for Model Schools

1. Teaching Staff

	Qualification	B.P.S. Class	Number
Headmistress	M.A./M.Sc., B.Ed.	16	1
Lady Teachers	B.A./B.Sc., CT	14	6
Theology Teacher		7	1
Physical Education Teacher		9	1
Total			9

2. Other Staff

	B.P.S. Class	Number
Chowkidar (Janitor)	1	1
Peon (Factotum)	1	1
Sweeper	1	1
Total		3

For the budgets to cover the costs of running the planned schools, the following annual costs are included in the Concept Clearance Paper for the construction plan (Rs 304,000 per school per annum). This seems satisfactory.

Annual Running Costs for Model School

Salary (headmistress)	Rs 24,250
Salary (teachers x 8)	137,520
Salary (other staff x 3)	33,120
Housing allowance	58,460
Living allowance	1,764
Medical allowance	7,700
Commuting allowance	7,000
Communication costs	6,000
Electricity	6,000
Heating	6,000
Stationary	6,000
Others	10,000
Total	Rs 303,814

3-4 Study on the Project Components

Factors considered in deciding whether to go ahead with the construction of the schools include the availability of the sites, availability of the teaching staff, number of children in the catchment areas, infrastructure conditions (roads, power supply, and water supply and drainage) and the surrounding environment. In this section, studies are made on the problems relating to the sites and the teaching staff, which are common to all the proposed sites.

(1) Site Acquisition

Most of the sites for primary schools constructed to date in NWFP have been donated by the local landowners. This is due largely to the shortage of government-owned land, and has been a major obstruction in expanding the educational system. Under the present project, too, reliance will be made on donations for a significant number of the sites.

The average cost for 2 kanal (approx. 1,000 m²) of land is around 5 to 6 lakh rupees. This corresponds to around 25 years' pay for a single teacher, and acquisition of land at such costs will place a major burden on the Directorate of Primary Education, most of whose budget is spent on the wages for the teaching staff.

From the point of view of the landowners, on the other hand, land is not a particularly valuable commodity, except in densely-populated cities such as Peshawar. Troubles, however, between the landowners and governmental agencies after such transfers of land are not infrequent.

The Survey Team has taken this point into consideration, and has made the availability of land the most important factor in the selection of the construction sites under this project, making it a prerequisite that each construction site satisfy one of the following conditions.

- The site is government-owned and has been approved as a construction site for a primary school.
- The landowner has sworn in writing (affidavit) that he will donate the land free of charge.

(2) Feasibility of Providing Teaching Staff

As has been mentioned in Section 3-3, the model schools established under this project are to be staffed by teachers with higher qualifications than normal, who are also all to be female. It is very rare in Pakistan, however, for women to leave their homes to work in other areas, and this means that the number of qualified teachers in the relevant areas provide another major criterion in the selection of the construction sites. Investigations are made below on the availability of the teachers according to the categories of teachers making up the teaching staff.

1) Senior English Teachers (S.E.T.)

Senior English teachers will be appointed as headmistresses. These are teachers who hold the degrees of Bachelor of Education (B.Ed.), which is acquired through a one-year teacher training course taken after completing the regular undergraduate courses (B.A. or B.Sc. - Note: Institutions offering such courses are called "degree

colleges" in Pakistan.). There are only two regular universities with powers to confer B.Ed.'s in NWFP, the Peshawar University and the Gomal University, in D.I. Khan, while the Allama Iqbal Open University (A.I.O.U.) offers a correspondence course in education.

The numbers of S.E.T.'s applying for posts at middle schools in response to the advertisements placed by the NWFP Public Service Commission in February of this year are given in Table 1. A total of 1,017 candidates applied for the 240 posts. It may be seen that the applications were concentrated in the areas around Peshawar (Zone 2), D.I. Khan (Zone 4) and Abbottabad (Zone 5), and that even in the northern area around Swat (Zone 3), where there were the fewest applicants, the number of applicants exceeded the number of the proposed primary school sites named in the request.

The numbers of female students enrolled in the B.Ed. and M.Ed. (Master of Education) courses at the University of Peshawar over the past five years are shown in Table 2 according to their home areas. The figures show that nearly 40 B.Ed.'s are produced each year by Peshawar University alone (Around 70% of the students are said to obtain the degrees.), and that the vast majority of the students on both the courses come from the area between Peshawar with Islamabad.

There are fewer students from the southern part of the province around D.I. Khan, but it is thought that the students from this area are taken in by the Gomal University, and the overall distribution of the students will be more or less the same as in the data on the applicants to the Public Service Commission.

The B.Ed. course at the Allama Iqbal Open University was established in 1987. A total 314 students, of whom 40% are reported to be female, have since obtained B.Ed.'s through this course in the Peshawar area alone, and a total of 779 students (of whom approx. 300 are female) from the Peshawar area are on this course at present.

The above statistics suggest that there will be no problems in securing the S.E.T.'s required in any of the districts.

2) Teachers with C.T. (Certificate in Teaching)

These teachers will make up the bulk of the teachers at the model schools. They are teachers holding Certificates in Teaching (C.T.), which are acquired through a one-year course at Colleges for Elementary Teachers (CET), taken after obtaining Intermediate Certificates (I.C.) by completing courses at the level of preparatory courses at university (Note: Institutions offering such courses in Pakistan include "higher secondary schools" and "intermediate colleges.") and passing the intermediate examinations.

The numbers of applicants for the teaching posts offered by the NWFP Directorate of Secondary Education over the past five years are shown in Table 3. It may be seen that the numbers of female applicants with C.T.'s have exceeded the numbers of posts available by factors of three to five over the past few years, with the latest figure (1992) indicating an excess of nearly 500 qualified persons. Last year in particular, there were more than 13 applicants for each post, with the number of applicants exceeding 1,200. Since the number of teachers with C.T.'s in NWFP as a whole as of November of last year was 1,136, this means that there were as many applicants as the number of those actually teaching.

Table 1 EMPLOYMENT STATUS FOR SENIOR ENGLISH TEACHER (SET) IN 1993

Gender	Numbers of Posts (a)	Numbers of Applicants (b)	(b) / (a)	Attendance for the Examination		Total Population in Zone (d)	Population / Attendance (d) / (c)
				Total	Zonewise Breakdown (c)		
Male	456	3,723	8.16	3,442	Zone 1	392	
					Zone 2	752	5,038
					Zone 3	905	3,240
					Zone 4	952	2,211
					Zone 5	441	5,070
Female	240	1,017	4.24	913	Zone 1	9	
					Zone 2	334	11,342
					Zone 3	78	37,590
					Zone 4	288	7,309
					Zone 5	204	10,961

* Legend : Zone 1: Federal Administrative Tribal Area (FATA)

Zone 2: Peshawar, Charsadda, Nowshera, Swabi, Mardan

Zone 3: Swat, Buner, Dir, Chitral, Kohistan, Malakand Ag.

Zone 4: D.I. Khan (including Lakki and Tank), Bannu, Kohat, Karak

Zone 5: Haripur, Abbottabad, Mansehra

* Remarks : 1. Data on Numbers of posts, applicants and attendance were collected from N.W.F.P. Public Service Commission.

2. Data on zonewise population is based on District Census Reports 1981, Population Census Organization, Islamabad.

Table 2

DISTRICTWISE NUMBERS OF FEMALE STUDENTS IN PESHAWAR UNIVERSITY/I.E.R. (1988-1992)

Name of the District	Course for B.Ed.						Course for M.Ed.						Total
	'88	'89	'90	'91	'92	Total	'88	'89	'90	'91	'92	Total	
1. Peshawar	20	20	18	12	27	97	5	1	1	5	2	14	111
2. Abbottabad	7	9	8	6	2	32	0	1	5	3	0	9	41
3. Mardan	8	2	3	6	3	22	1	1	1	1	3	7	29
4. Swat	1	4	1	2	4	12	0	0	0	0	0	0	12
5. Malakand Ag.	1	1	2	3	3	10	0	0	1	1	0	2	12
6. Nowshera	0	0	3	5	1	9	0	0	0	0	2	2	11
7. Karak	1	0	5	4	0	10	0	0	0	0	0	0	10
8. Swabi	0	0	2	1	5	8	0	0	0	0	1	1	9
9. Bannu	0	2	0	1	2	5	2	0	0	1	0	3	8
10. D.I. Khan	2	1	0	1	2	6	1	0	0	0	0	1	7
11. Charsadda	0	0	3	2	0	5	1	0	0	0	0	1	6
12. Haripur	0	0	0	2	1	3	0	0	0	1	2	3	6
13. Kohat	2	0	0	2	0	4	0	0	1	0	0	1	5
14. Mansehra	2	1	0	0	0	3	0	0	1	0	0	1	4
15. Chitral	1	1	0	1	0	3	0	0	0	0	0	0	3
16. Dir	0	0	0	1	0	1	1	0	0	0	0	1	2
17. Kohistan	0	0	0	0	0	0	0	0	0	0	0	0	0
18. Lakki	0	0	0	0	0	0	0	0	0	0	0	0	0
19. Tank	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Buner	0	0	0	0	0	0	0	0	0	0	0	0	0
FATA	1	0	0	0	0	1	0	0	2	0	0	2	3
Other Province	2	4	4	2	0	12	0	0	0	2	0	2	14
(Total)	48	45	49	51	52	243	11	3	12	14	10	50	293

* Remark: The above data were collected from Institute of Education and Research, Peshawar University.

Table 3

EMPLOYMENT STATUS OF TEACHERS FOR MIDDLE/HIGH SCHOOLS (1988-1992)

Year		CT		PET		TT	
		Male	Female	Male	Female	Male	Female
1988	Nos./A	1,734	264	93	17	NA	NA
	Nos./P	292	81	117	41	108	34
	Nos./Q	1,442	183	▲ 24	▲ 24	NA	NA
1989	Nos./A	1,792	228	70	14	NA	NA
	Nos./P	271	86	91	31	82	34
	Nos./Q	1,521	142	▲ 21	▲ 17	NA	NA
1990	Nos./A	3,043	292	125	Nil	NA	NA
	Nos./P	186	66	111	53	116	54
	Nos./Q	2,857	226	14	▲ 53	NA	NA
1991	Nos./A	2,765	1,285	23	24	NA	NA
	Nos./P	318	98	117	44	115	41
	Nos./Q	2,447	1,187	▲ 94	▲ 20	NA	NA
1992	Nos./A	3,513	614	NA	NA	NA	NA
	Nos./P	261	131	90	53	100	59
	Nos./Q	3,252	483	NA	NA	NA	NA

* Legend: CT ----- Certificate of Teaching
 PET ----- Physical Education Teacher
 TT ----- Theology Teacher
 Nos./A --- Numbers of Applicants
 Nos./P --- Numbers of Posts Sanctioned
 Nos./Q --- Numbers of Unemployed Qualification Holders
 NA ----- Data Not Available

* Remark: Data on 'Numbers of Applicants' and 'Numbers of Posts Sanctioned' were collected from the registre of Examination Division and Assistant Director of Directorate of Secondary Education, Peshawar, respectively, on September 28, 1993.

A total of 347 students (of whom approximately 140 are female) from the Peshawar area alone have obtained C.T.'s so far at the Allama Iqbal Open University, where the C.T. course was set up in 1989, and 344 students are on the course at present.

Although no data could be obtained on this occasion on the numbers of students obtaining C.T.'s at the Colleges for Elementary Teachers, the statistics given above indicate that there are likely to be no problems in securing the required number of teachers with C.T.'s. The regional distribution of personnel with C.T.'s is expected to be similar to those of S.E.T.'s.

3) Physical Education Teachers (P.E.T.)

This qualification is given to those completing the one-year courses at the Physical Education Colleges after obtaining I.C.'s in the same way as those going on to the C.T. courses.

According to the figures given in Table 3, there has been a shortage of both male and female P.E.T.'s each year. The actual figures for the supply of P.E.T.'s are not known, and the qualification requirements for the P.E.T.'s at the model schools may have to be relaxed. At present, there are 482 female P.E.T.'s (average of 24 in each district) working in the middle school sector in NWFP.

4) Theology Teachers (T.T.)

Theology teachers teach Islamic studies, which is a compulsory subject at primary schools. T.T.'s receive their qualification upon completion of a one-year course at the colleges for training of theology teachers, called Dalululum, which they enter after leaving high schools.

Although no detailed data could be obtained during the Field Survey on the supply of T.T.'s, according to the Directorate of Secondary Education, there are over twice as many applicants as the posts available each year. At present, there are 446 female T.T.'s (average of 22 in each district) working in the middle school sector in NWFP.

From the foregoing, it may be concluded that there are a sufficient number of potential female teachers for the model schools with the required qualifications and it is judged that there will be no major problems in securing the staff for these schools.

The academic qualifications required for gaining the various teaching certificates in Pakistan are listed in Appendix 4, at the end of this report.

3-5 Selection of the Project Sites

The total number of schools requested, as has been mentioned in Section 2-4, was seventy-eight. The difficulty, however, of surveying all the sites distributed over such a wide area within the limited amount of time available during the field survey led to the exclusion of the sites named for the two remote districts of Chitral and Kohistan, resulting in the reduction of the number of sites considered to seventy. (The locations of the 70 sites are given in the "Minutes of Discussions" in the Appendix.) The procedure used for the selection of the sites is described below.

(1) Selection Method and Criteria

For the purpose of selecting the construction sites for the model schools, the districts within the province were first ranked according to the levels of priority, and the sites satisfying the various conditions required for construction were then selected within the priority districts. The following were used as the selection criteria.

(District Priority Criteria)

- Priority should be given to districts with low enrollment rates.
- Priority should be given to districts with greater shortages of school facilities (numbers of classrooms).
- Priority should be given to districts with high level of interest in education.

(Site Priority Criteria)

- Only those sites where the numbers of children not attending school within the catchment areas exceed to the capacities of the schools should be selected.
- Sites that are extremely difficult to reach are excluded.
- Priority should be given to government-owned land, where one can be certain of being able to use the land.
- In the case of sites donated by landowners, the promise of donation must be secured in the form of affidavits.
- Priority should be given to sites where utilities such as commercial power and water supply are available.

The results of the investigations at each of these steps are outlined below.

(2) Priority according to Districts

The following statistics were obtained as the bases for the judgement of "district priority."

- 1) Non-attendance rates
- 2) Classroom shortage
- 3) Number of pupils per classroom
- 4) Number of pupils per teacher

While items 1) and 2) provide straightforward data, item 3) provides indications of both the shortage of facilities and the level of interest in education. Since there are sufficient primary school teachers (P.T.C.'s), in terms of quantity if not of quality, in each district, item 4) was utilised as an indication of the levels of interest in education in each district. The districts within the province were ranked according to their levels of priority in terms of these four criteria. They are listed according to the total numbers of points in Table 4. Peshawar was given the highest priority, followed by Swat, Mardan, Haripur and Mansehra, in that order.

Table 4

DATA COLLECTION SHEET FOR DECIDING DISTRICT-WISE PRIORITY ON CONSTRUCTION OF NEW PRIMARY SCHOOL IN N.W.F.P

Sheet No. 1/2

Pri- ority	District	Data on School Aged Children and Students			Data on Classrooms and Teachers			Priority Criteria and the Points				
		Nos. of Children A	Nos. of Students B	Nos. of Unenrolled Students C=A-B	Required Nos. of Classrooms D=A/40	Existing Nos. of Classrooms E	Existing Nos. of Teachers F	Uneducated Ratio of Children C/A	Necessary Nos. of Classrooms D-E	Nos. of Students Per Classroom B/E	Nos. of Students Per Teacher B/F	Points
1	Peshawar	M : 132,412 F : 124,472 (T) : 256,884	M : 93,937 F : 35,951 (T) : 129,888	M : 38,475 F : 88,521 (T) : 126,996	M : 3,310 F : 3,112 (T) : 6,422	M : 1,606 F : 781 (T) : 2,387	M : 2,559 F : 1,050 (T) : 3,609	49.4% (8)	4,035 (20)	54.4 (20)	36.0 (20)	58
2	Swat	M : 129,368 F : 120,549 (T) : 249,917	M : 83,478 F : 28,631 (T) : 112,109	M : 45,890 F : 91,868 (T) : 137,758	M : 3,234 F : 3,014 (T) : 6,248	M : 1,843 F : 675 (T) : 2,518	M : 3,376 F : 850 (T) : 4,226	55.1% (11)	3,730 (18)	44.5 (19)	26.5 (11)	59
3	Mardan	M : 110,781 F : 104,030 (T) : 214,811	M : 71,971 F : 31,869 (T) : 103,840	M : 38,810 F : 72,161 (T) : 110,971	M : 2,770 F : 2,601 (T) : 5,371	M : 1,941 F : 871 (T) : 2,812	M : 2,366 F : 1,014 (T) : 3,380	51.7% (9)	2,559 (15)	36.9 (12)	30.7 (17)	53
4	Haripur	M : 61,449 F : 58,351 (T) : 119,800	M : 38,284 F : 26,946 (T) : 65,230	M : 23,165 F : 31,405 (T) : 54,570	M : 1,536 F : 1,459 (T) : 2,995	M : 1,078 F : 397 (T) : 1,475	M : 1,482 F : 614 (T) : 2,096	45.6% (5)	1,520 (10)	44.2 (18)	31.1 (19)	52
5	Mansehra	M : 154,009 F : 135,557 (T) : 289,566	M : 71,843 F : 31,932 (T) : 103,775	M : 82,166 F : 103,625 (T) : 185,791	M : 3,850 F : 3,389 (T) : 7,239	M : 2,376 F : 978 (T) : 3,354	M : 3,437 F : 1,162 (T) : 4,599	64.2% (17)	3,885 (19)	30.9 (7)	22.6 (9)	52
6	Nobistan	M : 71,010 F : 49,511 (T) : 120,521	M : 10,219 F : 389 (T) : 10,608	M : 60,791 F : 49,122 (T) : 109,913	M : 1,775 F : 1,238 (T) : 3,013	M : 192 F : 76 (T) : 268	M : 322 F : 65 (T) : 387	91.2%(20)	2,745 (17)	39.6 (14)	12.0 (1)	52
7	Buner	M : 35,904 F : 33,198 (T) : 69,102	M : 24,936 F : 6,031 (T) : 30,967	M : 10,968 F : 27,167 (T) : 38,135	M : 898 F : 830 (T) : 1,728	M : 558 F : 181 (T) : 739	M : 995 F : 119 (T) : 1,115	55.2% (12)	989 (8)	41.9 (16)	27.8 (13)	49
8	Abbottabad	M : 83,214 F : 78,190 (T) : 161,404	M : 55,790 F : 39,567 (T) : 95,357	M : 27,424 F : 38,623 (T) : 66,074	M : 2,080 F : 1,955 (T) : 4,035	M : 1,593 F : 721 (T) : 2,314	M : 2,194 F : 983 (T) : 3,177	40.9% (3)	1,721 (13)	41.2 (15)	30.0 (16)	47
9	Nowshera	M : 68,426 F : 64,020 (T) : 132,446	M : 48,108 F : 21,886 (T) : 69,994	M : 20,318 F : 42,134 (T) : 62,452	M : 1,711 F : 1,601 (T) : 3,312	M : 1,172 F : 460 (T) : 1,632	M : 1,931 F : 602 (T) : 2,533	47.2% (6)	1,680 (12)	42.9 (17)	27.6 (12)	47
10	Dir	M : 101,550 F : 101,088 (T) : 202,638	M : 63,214 F : 18,869 (T) : 82,083	M : 38,336 F : 82,219 (T) : 120,555	M : 2,539 F : 2,527 (T) : 5,066	M : 1,890 F : 547 (T) : 2,437	M : 3,011 F : 677 (T) : 3,688	59.5% (15)	2,629 (16)	33.7 (8)	22.3 (8)	47

* Legend : M, F, and (T) in the above table mean Male, Female, and Total, respectively.

* Remarks : 1. Source of the above data is as follows:

- Data 'A' : 'DISTRICT-WISE PROJECTED POPULATION OF N.W.F.P., AGE GROUP 5-9 YEARS', Prepared by System Analyst, Education Department, N.W.F.P.

- Data, 'B', 'E' and 'F' : 'Education Management Information System (EMIS) Research', Development & Evaluation Wing, Directorate of Primary Education, N.W.F.P.

2. Data 'D' is set up as the standard classroom contains forty (40) numbers of students.

3. Points in each criterion are provisional relative points to decide the district-wise priority.

Table 4

DATA COLLECTION SHEET FOR DECIDING DISTRICT-WISE PRIORITY ON CONSTRUCTION OF NEW PRIMARY SCHOOL IN N.W.F.P.

Sheet No. 2/2

Pri- ority	District	Data on School Aged Children and Students			Data on Classrooms and Teachers			Priority Criteria and the Points			
		Nos. of Children A	Nos. of Students B	Nos. of Unenrolled Students C=A-B	Required Nos. of Classrooms D=A/40	Existing Nos. of Classrooms E	Existing Nos. of Teachers F	Uneducated Ratio of Children C/A	Necessary Nos. of Classrooms D-E	Nos. of Students Per Classroom B/E	Nos. of Students Per Teacher F/F
11	Swabi	M : 78,428 F : 78,420 (T) : 151,848	M : 53,952 F : 24,760 (T) : 78,652	M : 24,476 F : 48,720 (T) : 73,196	M : 1,961 F : 1,836 (T) : 3,797	M : 1,573 F : 654 (T) : 2,227	M : 1,835 F : 694 (T) : 2,529	48.2% (7)	1,570 (11)	35.3 (10)	31.1 (13)
12	Charsadda	M : 78,154 F : 74,230 (T) : 152,384	M : 50,809 F : 16,820 (T) : 67,629	M : 27,345 F : 57,410 (T) : 84,755	M : 1,954 F : 1,856 (T) : 3,810	M : 1,294 F : 544 (T) : 1,838	M : 2,361 F : 686 (T) : 3,047	55.6% (13)	1,972 (14)	36.8 (11)	22.2 (7)
13	Bannu	M : 57,183 F : 53,376 (T) : 110,559	M : 27,813 F : 8,833 (T) : 36,646	M : 29,370 F : 44,543 (T) : 73,913	M : 1,430 F : 1,334 (T) : 2,764	M : 1,077 F : 543 (T) : 1,620	M : 1,298 F : 554 (T) : 1,852	66.9% (19)	1,114 (9)	22.6 (4)	19.8 (4)
14	Malakand Ag.	M : 34,473 F : 32,951 (T) : 67,424	M : 25,573 F : 14,365 (T) : 39,938	M : 8,900 F : 18,586 (T) : 27,486	M : 862 F : 324 (T) : 1,186	M : 556 F : 370 (T) : 1,026	M : 990 F : 418 (T) : 1,408	40.8% (2)	660 (5)	38.9 (13)	28.4 (14)
15	Kohat	M : 56,422 F : 54,029 (T) : 110,451	M : 51,910 F : 18,931 (T) : 70,841	M : 4,512 F : 35,098 (T) : 39,610	M : 1,411 F : 1,351 (T) : 2,762	M : 1,490 F : 552 (T) : 2,042	M : 1,802 F : 623 (T) : 2,425	35.9% (1)	720 (6)	34.7 (9)	29.2 (15)
16	D.I. Khan	M : 63,216 F : 58,550 (T) : 121,766	M : 32,633 F : 13,329 (T) : 45,962	M : 30,583 F : 45,221 (T) : 75,804	M : 1,580 F : 1,464 (T) : 3,044	M : 1,398 F : 679 (T) : 2,077	M : 1,682 F : 738 (T) : 2,420	62.3% (16)	967 (7)	22.1 (3)	19.0 (2)
17	Tank	M : 18,850 F : 17,795 (T) : 36,645	M : 10,384 F : 2,432 (T) : 12,816	M : 8,466 F : 15,363 (T) : 23,829	M : 471 F : 445 (T) : 916	M : 427 F : 179 (T) : 606	M : 455 F : 179 (T) : 634	65.0% (18)	310 (2)	21.1 (2)	20.2 (5)
18	Karak	M : 37,543 F : 36,020 (T) : 73,563	M : 28,112 F : 12,442 (T) : 40,554	M : 9,531 F : 23,578 (T) : 33,109	M : 941 F : 901 (T) : 1,842	M : 944 F : 374 (T) : 1,318	M : 1,146 F : 449 (T) : 1,595	44.9% (4)	524 (4)	30.8 (6)	25.4 (10)
19	Chitral	M : 22,331 F : 23,588 (T) : 45,919	M : 15,612 F : 5,873 (T) : 21,485	M : 7,219 F : 17,715 (T) : 24,934	M : 571 F : 590 (T) : 1,161	M : 584 F : 173 (T) : 757	M : 819 F : 198 (T) : 1,017	53.7% (10)	404 (3)	28.4 (5)	21.1 (6)
20	Lakki	M : 34,318 F : 32,239 (T) : 66,557	M : 22,557 F : 4,722 (T) : 27,279	M : 11,761 F : 27,517 (T) : 39,278	M : 858 F : 806 (T) : 1,664	M : 1,107 F : 299 (T) : 1,406	M : 1,095 F : 303 (T) : 1,398	59.0% (14)	258 (1)	19.4 (1)	19.5 (3)

* Legend : M, F, and (T) in the above table mean Male, Female, and Total, respectively.

* Remarks : 1. Source of the above data is as follows:

- Data 'A' : 'DISTRICT-WISE PROJECTED POPULATION OF N.W.F.P., AGE GROUP 5-9 YEARS', Prepared by System Analyst, Education Department, N.W.F.P.
- Data 'B', 'E' and 'F' : 'Education Management Information System (EMIS) Research', Development & Evaluation Wing, Directorate of Primary Education, N.W.F.P.
- 2. Data 'D' is set up as the standard classroom contains forty (40) numbers of students.
- 3. Points in each criterion are provisional relative points to decide the district-wise priority.

The conditions in some of the districts, as surmised from the figures in Table 4, are discussed below.

1) Peshawar

The nonattendance rate of 49.4% is thought to be higher than in actuality since the figures for private schools are not reflected here. The district was ranked first among the twenty districts, however, in terms of the classroom shortage, number of pupils per classroom and number of pupils per teacher, indicating the high level of priority of this district.

2) Kohistan

While this district has the highest nonattendance rate among the twenty districts at 91.2%, it also has the lowest number of pupils per teacher at 12.0. This is a clear indication of the low level of interest in education in this district. Although Kohistan was placed sixth in the overall ranking, this is a result that suggests a need for a radical review of the circumstances surrounding education in this district rather than one giving indication of an urgent need for expansion of the educational facilities. The decision of the Directorate of Primary Education to exclude this district from the project area therefore seems appropriate.

3) Abbottabad and Swat

Abbottabad has a relatively low nonattendance rate, but scored high points on average for the other items. The high level of interest in education in this district is also demonstrated by the high proportions of students from this district on the B.Ed. and M.Ed. courses at the Peshawar University. The same may be said of Swat, and it is not difficult to see why the Directorate of Primary Education requested as many as five model schools for this district, which is second only to the seven schools requested for Peshawar.

4) Kohat, D.I. Khan and Karak

Kohat has the highest enrollment rate and shows the highest level of interest in education among the twenty districts, but the shortage of facilities is relatively unserious and the level of urgency for new schools is judged to be low. The significantly low numbers of pupils per classroom and per teacher in D.I. Khan indicate that, though the level of interest in education is high, there is a surplus in the numbers of facilities and teachers here. The same may be said of Karak.

(3) Confirmation of Construction Conditions at Sites

A local engineering consultant (EC) was commissioned to carry out site surveys at the seventy construction sites named in the final request. It was found during these surveys that the District Education Offices had altered the locations of ten of the sites to locations which were different from those given in the Minutes of Discussions, while two new sites had also been added.

While it was to be regretted that the District Education Offices had altered the sites without consulting the Directorate of Primary Education, it was decided that the situation should be handled with flexibility, especially if the newly selected sites satisfied the

required conditions, such as the numbers of children not attending school within the catchment areas, bearing in mind the fact that the preparations for the site selection had been inadequate and the Survey Team had had to make the selection during a pressed schedule.

The conditions of the seventy proposed construction sites as regards all the criteria for "site priority" are shown in Table 5 on the following page.

(4) Selection of Construction Sites

While the construction sites should have been selected on the basis of the investigations outlined above, considerations had also to be made here from one further point of view. That is, while the significance of the proposed schools as model schools made it desirable to have the school sites distributed evenly throughout the province, from the point of view of achieving efficiency in the construction work, it was not advantageous to have the construction sites spread over too wide an area and it was desirable to be able to apply a standard design with the same specifications to all the buildings constructed. In the final analysis, therefore, the sites chosen were limited to the ten districts in the central part of the province, where there was little variation in the climatic conditions, and the thirty sites listed in Table 6 and shown in the map following were selected. At least two sites were selected, as a basic rule, in each of the ten districts.

3-6 Outline of the Grant Facilities

The construction sites selected in the previous section all satisfy the requirements as sites for primary schools accommodating 200 pupils. The scales and quantities, therefore, of the facilities and equipment to be granted for each school under the present project, such as the classrooms (x 5), teachers' room, latrines, drinking water equipment, and desks and chairs for the pupils, should be made appropriate for accommodation of 200 pupils.

Two further points need to be taken into consideration here. The first is that the "libraries" mentioned in the request seem not to be found at the existing schools and are not provided for in the budgets. The second is that no request has been made for the provision of classrooms for the kachi classes, which in reality are found at all the primary schools.

As regards the first of these points, it seems desirable to provide the schools, if not with separate library rooms, at least with collections of books which can be loaned out to the pupils as supplementary readers. As regards the second, kachi classes form a part of the primary school system in practice and cannot be ignored. In the light of these considerations, it seems appropriate to provide an extra room in addition to the five classrooms, as a multipurpose room used for accommodation of the kachi class and storage of spare desks and chairs, as well as for accommodation of the library in future.

It is clear that, among the equipment requested, such items as blackboards, desks and chairs for the pupils, teachers' desks, furniture for the teaching staff and cabinets are indispensable for the functioning of the schools. Investigations will be made on the appropriate quantities and specifications of the requested items, together with other items deemed necessary, such as notice boards.

Table 5

SITE INFORMATION SHEET FOR THE PROPOSED MODEL PRIMARY SCHOOLS

Data as of November 16, 1993

Sheet No. 1/4

District	No.	Name of the Proposed School (Name of Village)	Exst. or New Site	Population in the Catchment Area	Population of Age Group (5-9) Years		Total Enrolment in the Area	Nos. of Unenrolled Children in the Area	Distance to the Nearest School	Status on Land Acqtn.	Site Conditions			Status on Sictn.	Remarks
					Male	Female					AC	PW	WT		
1. Peshawar	1	Hayat Abad Phase-1	New	81,687	6,943	6,129	667	12,403	1.5 km	○	○	L	C	○	
	2	Hayat Abad Phase-3	New						1.5 km	○	○	L	C	○	
	3	Babu Zai (Shah Alam)	New	4,000	340	300	394	246	2.0 km	○	○	L	W	○	
	4	Gulbela	Exst.	5,000	425	375	800	320	1.5 km	○	○	L	W	○	
	5	Masho Kheil	New	15,414	1,310	1,156	2,466	2,240	1.5 km	○	○	L	W	○	
	6	Budini	New	3,000	255	225	204	271	2.0 km	○	○	L	W	○	
	7	Jhagra	New	5,787	493	434	268	559	1.5 km	○	○	L	C	○	Max. 5 sites in Peshawar
2. Nowshera	1	Taru Jabba	New	20,000	1,700	1,500	2,560	640	2.0 km	○	○	H	W	○	
	2	Jalozai	Exst.	22,000	1,870	1,650	2,810	710	in site	○	○	L	C	○	
	3	Mughulki	Exst.	15,000	1,275	1,125	1,910	490	in site	○	○	H	W	○	
	4	Khashiki Payan	Exst.	45,000	3,825	3,375	6,520	680	in site	○	○	L	W	○	
3. Charsadda	1	New Turlandi	New	4,000	340	300	320	320	2.0 km	○	○	L	W	○	
	2	Shaki Kulali (Navi Killi)	New	5,000	425	375	300	500	3.0 km	○	○	L	W	○	
	3	Mera Umar Zai	New	5,000	425	375	450	350	3.0 km	○	○	H	C	○	
	4	Abdul Ali Killi	New	5,000	425	375	430	370	3.0 km	○	○	L	W	○	
4. Mardan	1	Rustan	New	8,000	680	600	500	780	1.5 km	△	●	L	W	×	Horse accessibility
	2	Gumbat	New	7,000	595	525	359	761	1.5 km	○	○	L	C	○	
	3	Karim Abad	New	8,000	680	600	400	880	1.5 km	○	○	L	W	○	
	4	Fathma	New	7,000	595	525	600	520	1.5 km	○	○	H	W	○	
	5	Baghicha Dheri	New	7,000	595	525	569	551	1.5 km	○	○	●	L	×	Worse accessibility

* Legend: 1. Status on Land Acquisition

○ --- Good (Reserved Government Land)
 ○ --- Not Bad (The affidavit already obtained from the landowner, or the legal transference is in progress.)
 △ --- Not Good (Only verbal consent obtained from the landowner.)

2. Site Conditions

AC: Accessibility to the Site
 ○ --- Good or Not Bad
 △ --- Not Good but Accessible
 ● --- Very Bad

WT: Availability of Water

C: City water is available near the site.
 W: City water is not available near the site, so boring for well water or extension of pipe line from the nearest well, is required.

PW: Availability of Electricity

H: High voltage lines are available near the site, but the transformer is newly required.
 L: Low voltage lines are available near the site.

Data as of November 16, 1993

Sheet No. 2/4

Table 5
SITE INFORMATION SHEET FOR THE PROPOSED MODEL PRIMARY SCHOOLS

District	No.	Name of the Proposed School (Name of Village)	Exst. or New Site	Population in the Catchment Area		Population of Age Group (5-9) Years		Total Enrolment in the Area	Nos. of Unenrolled Children in the Area	Distance to the Nearest School	Status on Land Acqtn.	Site Conditions			Status on Sctn.	Remarks
				Male	Female	Male	Female					AC	PW	WT		
5. Swabi	1	Topi	Exst.	35,000	2,975	2,625	5,090	510	in site	○	○	○	L	W	○	
	2	Lahor	New	25,000	2,125	1,875	2,225	495	0.1 km	○	○	○	L	C	○	
	3	Adina	New	20,000	1,700	1,500	2,720	480	1.7 km	○	○	○	○	H	W	○
	4	Bachai Dagi	New	20,000	1,700	1,500	2,750	450	3.0 km	○	○	△	L	W	○	
6. Konat	1	Tough Piyan	New	5,000	425	375	200	600	1.5 km	○	○	△	L	W		
	2	Chargarri	New	3,000	255	225	175	305	2.0 km	○	○	○	H	W		
	3	Mohammad Khawaja	New	6,000	510	450	212	748	2.0 km	○	○	●	H	W		
	4	Ganjiano Killa	New	6,000	510	450	590	370	2.0 km	○	○	○	L	C		
7. Karak	1	Town Committee	New	20,000	1,700	1,500	1,820	1,380	2.0 km	○	○	○	H	W		
	2	Khad Banda	New	6,000	510	450	280	680	2.0 km	○	○	●	L	W		
	3	Tatarkhel	New	8,000	680	600	370	910	1.5 km	○	○	●	L	W		
8. Abbotabad	1	Damthour	New	8,000	680	600	850	430	2.0 km	○	○	○	L	C	○	
	2	Mirpur	New	10,000	850	750	1,080	520	2.0 km	○	○	△	L	C	○	
	3	Bandi Attai Khan	New	8,000	680	600	700	580	8.0 km	○	○	△	H	C		New proposed site
	4	Civil Officer Colony	New	8,000	680	600	590	370	3.0 km	○	○	△	H	W		New proposed site
9. Haripur	1	Bandi Attai Khan	New	8,000	680	600	700	580	8.0 km	○	○	△	H	C		New proposed site
	2	Tippra	New	10,000	850	750	1,080	540	2.0 km	○	○	●	H	W	×	Worse accessibility
	3	Bijian	New	8,000	680	600	700	580	1.0 km	○	○	△	L	C	○	
	4	K.T. Ship No.2 Sector	Exst.	5,000	510	450	590	370	in site	○	○	○	L	C	○	
		Mohallah Khoo	New	21,000	1,785	1,575	2,000	1,360	in site	○	○	○	L	C		New proposed site

Data as of November 15, 1993

Table 5

SITE INFORMATION SHEET FOR THE PROPOSED MODEL PRIMARY SCHOOLS

Sheet No. 3/4

District	No.	Name of the Proposed School (Name of Village)	Exst. or New Site	Population in the Catchment Area	Population of Age Group (5-9) Years		Total Enrolment in the Area	Nos. of Unenrolled Children in the Area	Distance to the Nearest School	Status on Land Acqtn.	Site Conditions			Status on Sctn.	Remarks
					Male	Female					AC	PW	WT		
10. Mansehra	1	Karkala	New	8,000	680	600	980	300	2.0 km	●	●	●	●	X	Worse accessibility
	2	Phulra	New	6,000	510	450	710	250	3.0 km	○	△	△	△	○	
	3	Bisian	New	6,000	510	450	710	250	2.0 km	●	●	●	●	X	Worse accessibility
	4	Hamid Abad	New	5,000	425	375	525	275	2.0 km	●	●	●	●	X	Worse accessibility
11. Battagram		Battal	New	8,000	680	600	980	300	3.0 km	○	○	○	○	○	New proposed site
	1	Polabela	New	6,000	510	450	700	260	3.0 km	○	△	△	△	○	
12. Bannu	2	Kurwal Dab	New	5,000	425	375	535	265	2.0 km	●	●	●	●	X	Worse accessibility
	1	Amir Khan Nurur	Exst.	12,000	1,020	900	380	1,580	1.5 km	○	○	○	○	○	
	2	Azmat Killa Moor Aslam	New	7,000	595	525	428	692	1.5 km	○	○	○	○	○	
	3	Kakki Khass Kifayaiullah	New	15,000	1,275	1,125	500	1,900	1.5 km	○	○	○	○	○	
13. Lakki	4	Wazir Killa Safur Rehman	New	7,000	595	525	428	694	1.5 km	○	○	○	○	○	New proposed site
		Shah Zaman Jafar	New	7,000	600	550	250	900	1.5 km	○	○	○	○	○	New proposed site
	1	Begu Khel	New	9,000	765	675	480	960	1.5 km	○	○	○	○	○	
	2	Doulat Taja Zai	New	1,000	780	700	450	1,030	1.5 km	○	○	○	○	○	New proposed site
14. D. I. Khan		Nar Mandi Maltan	New	6,000	550	500	250	800	1.5 km	○	○	○	○	○	New proposed site
	1	Line Police	New	8,000	680	600	260	1,020	1.0 km	○	○	○	○	○	
	2	Pahar Pur T/Committee	New	12,000	1,020	900	1,200	720	1.0 km	○	○	○	○	○	
	3	Basti Saeed Abad	New	3,000	255	225	165	315	2.0 km	△	○	○	○	○	
15. Tank	4	Town Committee Kulachi	New	21,000	1,785	1,575	2,000	1,360	1.0 km	○	○	○	○	○	
	1	Gomal Bazar	New	8,000	680	600	535	745	1.5 km	△	○	○	○	○	
	2	Aslam Abad (Amakhel)	New	5,000	425	375	360	440	1.0 km	△	○	○	○	○	

Table 5

SITE INFORMATION SHEET FOR THE PROPOSED MODEL PRIMARY SCHOOLS

Data as of November 18, 1993

Sheet No. 4/4

District	No.	Name of the Proposed School (Name of Village)	Exst. or New Site	Population in the Catchment Area	Population of Age Group (5-9) Years		Total Enrollment in the Area	Nos. of Unenrolled Children in the Area	Distance to the Nearest School	Status on Land Acqtn.	Site Conditions		Status on Slctn.	Remarks
					Male	Female					AC	PW	WT	
16. Dir	1	Havaseri	New	5,766	490	431	544	377	2.0 km	O	L	W		
	2	Lal Qila	New	13,317	1,131	999	1,864	266	1.5 km	O	H	W		
	3	Hunda	New	6,851	582	514	713	383	2.0 km	O	L	C		
	4	Talash	New	9,870	929	650	1,319	260	0.5 km	O	H	W		
17. Swat	1	Gogdara	New	4,000	340	300	335	305	2.0 km	O	H	C		New proposed site
	2	Deegra	Exst.	7,000	595	525	732	388	in site	O	L	C		New proposed site
	3	Khuaza Khela	New	8,000	640	600	1,003	237	2.0 km	O	H	W		New proposed site
	4	Kabal	Exst.	10,000	850	750	1,153	447	in site	O	H	C		New proposed site
18. Bunir	1	Agarai	New	8,000	680	600	350	330	0.5 km	O	L	C	O	
	2	Daggar Qila	New	5,000	425	375	330	470	3.0 km	O	L	C	O	
19. Marakand	1	Korona	New	2,000	170	150	85	235	2.0 km	O	L	W		New proposed site
	2	Mohammad Gul Korona	New	2,000	170	150	85	235	2.0 km	O	L	W		New proposed site
	3	Meherdi	New	3,000	255	255	180	330	2.0 km	O	H	W		New proposed site
	4	Meherdi	New	3,000	255	255	180	330	2.0 km	O	H	W		New proposed site

* Legend: 1. Status on Land Acquisition

O --- Good (Reserved Government Land)

O --- Not Bad (The affidavit already obtained from the landowner, or the legal tranference is in progress.)

△ --- Not Good (Only verbal consent obtained from the landowner.)

2. Site Conditions

AC: Accessibility to the Site

O --- Good or Not Bad

△ --- Not Good but Accessible

● --- Very Bad

WT: Availability of Water

C: City water is available near the site.

W: City water is not available near the site, so boring for well water or extension of pipe line from the nearest well, is required.

PW: Availability of Electricity

H: High voltage lines are available near the site, but the transformer is newly required.

L: Low voltage lines are available near the site.

Table 6

INFORMATION ON SELECTED 30 SITES

Data as of November 16, 1993

District	No.	Name of the Proposed School (Name of Village)	Exst. or New Site	Status on Land Acqtn.	Site Conditions			Total Length of Boundary Walls	Estimated Length of City Water Connectn.	Depth of the nearest well in town	Estimated Length of Extn. of Power Line
					AC	PW	WT				
1. Peshawar	1	Hayat Abad Phase - 1	New	○	○	L	C	154 m.	60 m.	NA	70 m.
	2	Hayat Abad Phase - 3	New	○	○	L	C	143 m.	60 m.	NA	70 m.
	3	Babu Zai (Shah Alam)	New	○	△	L	W	129 m.	NA	10 m.	40 m.
	4	Gulbela	Exst.	○	△	L	W	142 m.	NA	20 m.	60 m.
	5	Masho Kheil	New	○	○	L	W	184 m.	NA	50 m.	70 m.
	6	Budhni	New	○	○	L	W	192 m.	NA	10 m.	70 m.
2. Nowshera	7	Taru Jabba	New	○	○	H	W	171 m.	NA	10 m.	370 m.
	8	Jalozai	Exst.	○	○	L	C	265 m.	180 m.	NA	230 m.
	9	Mughulki	Exst.	○	○	H	W	254 m.	NA	30 m.	370 m.
	10	Khashiki Payan	Exst.	○	○	L	W	183 m.	NA	20 m.	70 m.
3. Charsadda	11	New Turlandi	New	○	○	L	W	124 m.	NA	20 m.	70 m.
	12	Shaki Kulali (Navi Killi)	New	○	○	L	W	206 m.	NA	10 m.	450 m.
	13	Mera Umar Zai	New	○	○	H	C	130 m.	40 m.	NA	120 m.
	14	Abdul Ali Killi	New	○	○	L	W	128 m.	NA	10 m.	90 m.
4. Mardan	15	Gumbat	New	○	△	L	C	222 m.	80 m.	NA	80 m.
	16	Karim Abad	New	○	△	L	W	176 m.	NA	20 m.	120 m.
	17	Fathma	New	○	○	H	W	160 m.	NA	10 m.	550 m.
5. Swabi	18	Topi	Exst.	○	○	L	W	182 m.	NA	50 m.	60 m.
	19	Lahor	New	○	○	L	C	180 m.	60 m.	NA	60 m.
	20	Adina	New	○	○	H	W	128 m.	NA	20 m.	140 m.
	21	Bachai Dagi	New	○	△	L	W	201 m.	NA	20 m.	110 m.
6. Abbotabad	22	Damthour	New	○	○	L	C	216 m.	70 m.	NA	70 m.
	23	Mirpur	New	○	△	L	C	123 m.	70 m.	NA	80 m.
7. Haripur	24	Bijian	New	○	△	L	C	177 m.	60 m.	NA	120 m.
	25	K.T. Ship No. 2 Sector	Exst.	○	○	L	C	211 m.	70 m.	NA	100 m.
8. Mansehra	26	Phulra	New	○	△	H	C	185 m.	60 m.	NA	240 m.
	27	Battal	New	○	○	L	C	136 m.	50 m.	NA	50 m.
9. Battagram	28	Polabela	New	○	△	L	C	185 m.	50 m.	NA	50 m.
10. Bunir	29	Agarai	New	○	△	L	C	133 m.	190 m.	NA	130 m.
	30	Daggar Qila	New	○	△	L	C	157 m.	170 m.	20 m.	80 m.

(Summary)

1. Site

New Site : 24 Nos.

Existing Site : 6 Nos.

2. Land Acquisition

Governmental Land ○ : 14 Nos.

Donated Land ○ : 16 Nos.

3. Power Supply

High Voltage Line (H) : 6 Nos.

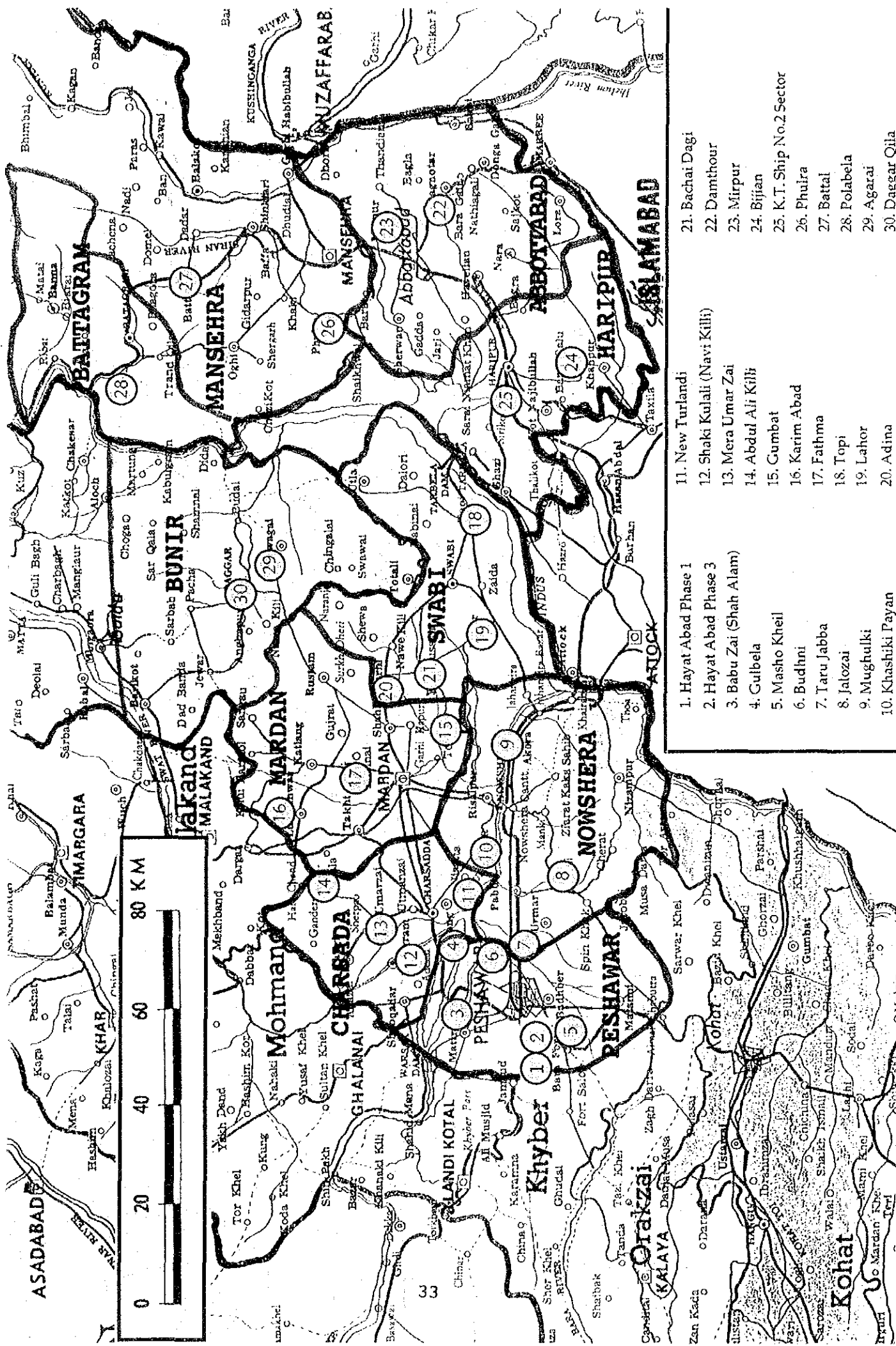
Low Voltage Line (L) : 24 Nos.

4. Water Supply

City Water (C) : 15 Nos.

Well Water (W) : 15 Nos.

* Note: 'NA' means 'Not Available' or 'Not Applicable'.



1. Hayat Abad Phase 1
2. Hayat Abad Phase 3
3. Babu Zai (Shah Alam)
4. Gulbela
5. Masho Kheil
6. Budhni
7. Taru Jabba
8. Jaloza
9. Mughulki
10. Khashiki Payan
11. New Turlandi
12. Shaki Kulali (Navi Kili)
13. Mera Umar Zai
14. Abdul Ali Kili
15. Gumbat
16. Karim Abad
17. Fathma
18. Topi
19. Lahor
20. Adina
21. Bachai Dagi
22. Damthour
23. Mirpur
24. Bijian
25. K.T. Ship No.2 Sector
26. Phulra
27. Battal
28. Polabela
29. Agarai
30. Daggar Qila

While the construction of tall walls around the school sites as a measure for preventing people peeping into the schools is deemed indispensable under this project to provide security for female pupils attending the schools, this falls outside the responsibility of the Education Department, making it difficult to secure the budgets for this purpose. These enclosure facilities (walls and gates) will, therefore, be included among the grant items.

3-7 Maintenance and Management Plan

The plans for the staff composition and running costs of the model schools have been discussed in Section 3-3. The plans seem feasible. The maintenance and management of the school facilities will be implemented by the nine teaching staff and three other members of staff allotted to each school parallel to the running of the schools. While the facilities will be designed in such a way as to facilitate and to minimise the costs required for their maintenance and management, teaching the pupils to look after the places where they spend five years of their education will also be an important part of their primary education. It is needless to say that the headmistresses will be expected to instruct the members of staff and the pupils in the appropriate treatment of the buildings and equipment on the school premises. Constant attention should also be paid to such items as the cleanliness of the schools, supply of water to the tanks, checking that the doors are locked and other efforts for prevention of theft. Pupils should be taught to wash away the excrements with the water in the buckets after using the latrines, and it should be made obligatory for the sweepers to clean the latrines using appropriate amounts of water after the end of the classes every day.

Particular care needs to be taken over this point, as a simple "manual" flushing method, rather than valve water closets, has been adopted for the latrines under this project to reduce the chances of breakdown. The septic tanks and leach pits should also be inspected and cleaned regularly to prevent malfunctions.

3-8 Technical Cooperation

Improvement of education cannot be achieved solely through the construction of new facilities and provision of better equipment. It has already been pointed out that the reasons for the low enrollment rate in Pakistan include, besides the problems relating to the facilities and equipment, the unsatisfactory curriculum, low quality of teachers, poverty and lack of understanding on the part of the parents towards education.

In consideration of these circumstances, the Project Formulation Study Team sent to Pakistan in November 1993 recommended the implementation of a "package project." The project discussed in the present report forms a part of this package project. The package project is a comprehensive project, under which the sub-projects that can be implemented (development and provision of teaching materials, training/retraining of teaching staff etc.) are selected from the projects requested by the government of the host country and are implemented according to the programme approach over periods extending over several years. Indispensable for this will be the processes of overall planning, implementation, monitoring and review by the government of the host country. In this connection, considerations will have to be made, for example, for a long-term dispatch of experts capable of providing guidance to the teachers and those involved in the administration of education, as well as of making recommendations for improvements in the educational policies and structures.

CHAPTER 4 BASIC DESIGN

4-1 Design Policies

Concepts concerning school buildings in advanced countries have been undergoing major changes in recent years, from the traditional design with its emphasis on the activities during the class hours to an approach that attaches greater importance to the learning activities and living environments of the pupils. The educational and everyday needs of the children, in their activities of resting, playing, consulting each other, making plans and conducting their own research, have come to be understood as playing the central roles in the functions of the schools, and these new concepts favour the provision of such spaces as lobbies and lounges for pupils, where they can gather freely, "common space," provided around the classrooms and used for group learning, canteens, which the pupils can use freely in a "fun" atmosphere, and "locker space," used as a gathering place by the pupils. "Group learning" involves pupils working and discussing together in small groups and is more effective than classes conducted in the traditional manner in fostering the characters of individual pupils.

These new concepts naturally affect the configuration of school buildings, but the situation in Pakistan today is that of a serious shortage of the absolute number of classrooms, where, far from adopting such new ideas, one has first to provide places for pupils to sit and attend classes out of the wind and rain. In the way in which the classes are conducted, too, no departure has as yet been made from the traditional format. Under these circumstances, even at these model schools, it seems more practical to adhere to the traditional style of school buildings, with a corridor running on one side of the row of classrooms allotted to each class.

The appearance of primary schools, however, have a major influence on the formation of personalities and provides scenes that are kept in the memories of those who study there. As such, the aesthetic design of the buildings is of importance and must be one that creates a cheerful and fun atmosphere.

The school facilities and equipment will be designed under the basic concepts outlined above, with considerations on the following points.

1) Natural Conditions

The architectural specifications must accord with the climatic conditions of the project area. Special care will be required over the heat insulation performance of the walls and roofs in view of the large yearly and daily temperature variation.

2) Social Conditions

The facilities must be in accord with the local customs and religious practices. As a consideration for the female pupils, measures will be taken to prevent people peeping into the schools from the outside.

3) Building Conditions

While there is no equivalent of the Building Standard Law in Pakistan, the standards whose use is encouraged by the Karachi and Islamabad Development Agencies (KDA and IDA) will be referred to.

4) Use of Local Construction Firms and Materials

Since there are a number of construction firms in Islamabad with considerable resources and mobility, which have had the experience of participating in Japanese grant aid projects in the past as subcontractors, the subcontractors for the project can be selected from among these firms. While there are no problems in procuring the majority of the materials in the host country, some items that are not available or are available only at an inferior quality, will be procured in Japan.

5) Design of Facilities and Equipment

Since a large number of facilities are to be constructed simultaneously, a standard design will be used for the buildings, while the layout of the facilities on the sites will be determined for individual cases in accordance with the shapes and orientations of the sites, the conditions of the roads and other circumstances surrounding the sites. While the standards generally in use in the host country will be referred to for determining the design levels, care should be taken here to ensure adequate strengths and durability.

The aesthetic design of the facilities must be such as to provide a "fun" atmosphere appropriate for primary schools. Adequate care needs also to be taken over the safety of the children using the schools.

The emphasis in the design and selection of the facilities and equipment (furniture) will be on the facility and cost of maintenance and availability of the spares and expendables. Care will also be taken to ensure that the waste water from the schools etc. do not provide sources of pollution.

6) Construction Schedule

To achieve efficient construction of a large number of school buildings in as short a period as possible, a number of construction teams will be formed and these teams will be transferred to the next sites once they have completed the allotted work. Care will be taken over the procurement of the construction materials and their timely and accurate delivery to each site, so as to ensure that the construction schedule can be adhered to.

4-2 Design Conditions

(1) Site Conditions

The standard area of the school sites is 2 kanal (approx. 1,000 m²), and this seems to be about the limit for sites donated by landowners. Two kanal is not a very large area for a school, and in order to satisfy the scope of the request, the school buildings will have to be made two-storeyed. This will necessitate the installation of a stairway, and will result in an increase of approximately 20% in the direct construction costs and a prolongation of the construction period by one month, in comparison with a single-storeyed building, to a total of around eight months.

There are paved roads running to all but four of the construction sites. These access roads are rather narrow (3 to 4 m) at some of the sites, but they are not so narrow as to render construction work impossible, and, in general, the conditions of the access to the sites may be said to be satisfactory.

There are no major problems concerning power supply, feeder lines (three-phase, four-wire system, 230/400 V, 50 Hz) being found in the vicinity of the majority of the sites. For the sites that are removed from the distribution feeders and where there are only high-voltage feeders (three-phase, 11 kV), requests will have to be made to the Water and Power Development Authority (WAPDA) for the installation of transformers and extension of the distribution feeders.

For water supply, it is thought best to utilise the city waterworks at fifteen of the sites and to have wells dug at the remaining fifteen.

The ground consists of clay with mixtures of silt and sand at most of the sites. According to soil surveys conducted by a local consultant, bearing capacities of 5.5 t/m² or more are observed at all but three of the sites, allowing the use of spread foundations. At the Taru Jabba, Gumbat and Bachai Dagi sites, where the bearing capacity of the soil ranges between 3.3 and 4.4 t/m², it should be possible to obtain sufficient strengths by increasing the foundation excavation depth by approximately 50 cm (to GL - 1.7 m) and filling this extra depth with stone ballast. Soil surveys will have to be implemented again for confirmation of the ground bearing capacity at the time of construction..

(2) Shape and Area of Classrooms

The requested size of the classrooms is 25 feet by 18 feet ($\approx 7.62 \text{ m} \times 5.48 \text{ m}$), which is the same as that at schools constructed with assistance from the Asian Development Bank. The classroom size at the two-classroom school buildings, which are standard in NWFP, is 25 feet by 16 feet. The layout of the desks and chairs for a class of forty, using the standard specifications for school furniture in Japan (JIS S 1021) and assuming the conventional style of conducting classes, will be as shown in the figure below. The resulting dimensions, at 7.55 m by 5.5 m, are slightly larger than those originally requested. These latter values will be used as the internal dimensions in the design of the school buildings.

