Jordan "Human Resources Development Sector Investment Loan"

Report Date: March 1999

Field Survey: September 1998

Project Summary

Borrower:	Government of Hashemite Kingdom of Jordan
Executing Agency:	Ministry of Education
Exchange of Notes:	February 28, 1990
Date of Loan Agreement:	May 15, 1990
Final Disbursement Date:	September 12, 1997
Loan Amount:	¥10,381 million
Disbursed Amount:	¥8,361 million (including charges)
Procurement Conditions:	General Untied
Loan Conditions:	Interest Rate: 2.9%
	Repayment Period: 25years (7 years grace period)

Reference

(1) Currency: Jordan Dinar (JD)

(2) Exchange Rate:(IFS yearly average market rate)

Year		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Rate	JD/US$	0.371	0.570	0.664	0.681	0.680	0.693	0.699	0.700	0.709	0.709
	¥/US$	128.2	138.0	144.8	134.7	126.7	111.2	102.2	94.1	108.8	121.0
	¥/JD	346	242	218	198	186	160	146	134	153	171
Consumer price (1990=100)		68.5	86.1	100.0	108.2	112.5	116.2	120.3	123.1	131.1	135.1

(3) JBIC Appraisal: August ~ September, 1989

(4) Fiscal Year: January ~ December

(5) Abbreviations:HRDSIP: Human Resources Development Sector Investment Project
NCHRD: National Center for Human Resources Development
ICR: Implementation Completion Report (by the World Bank)

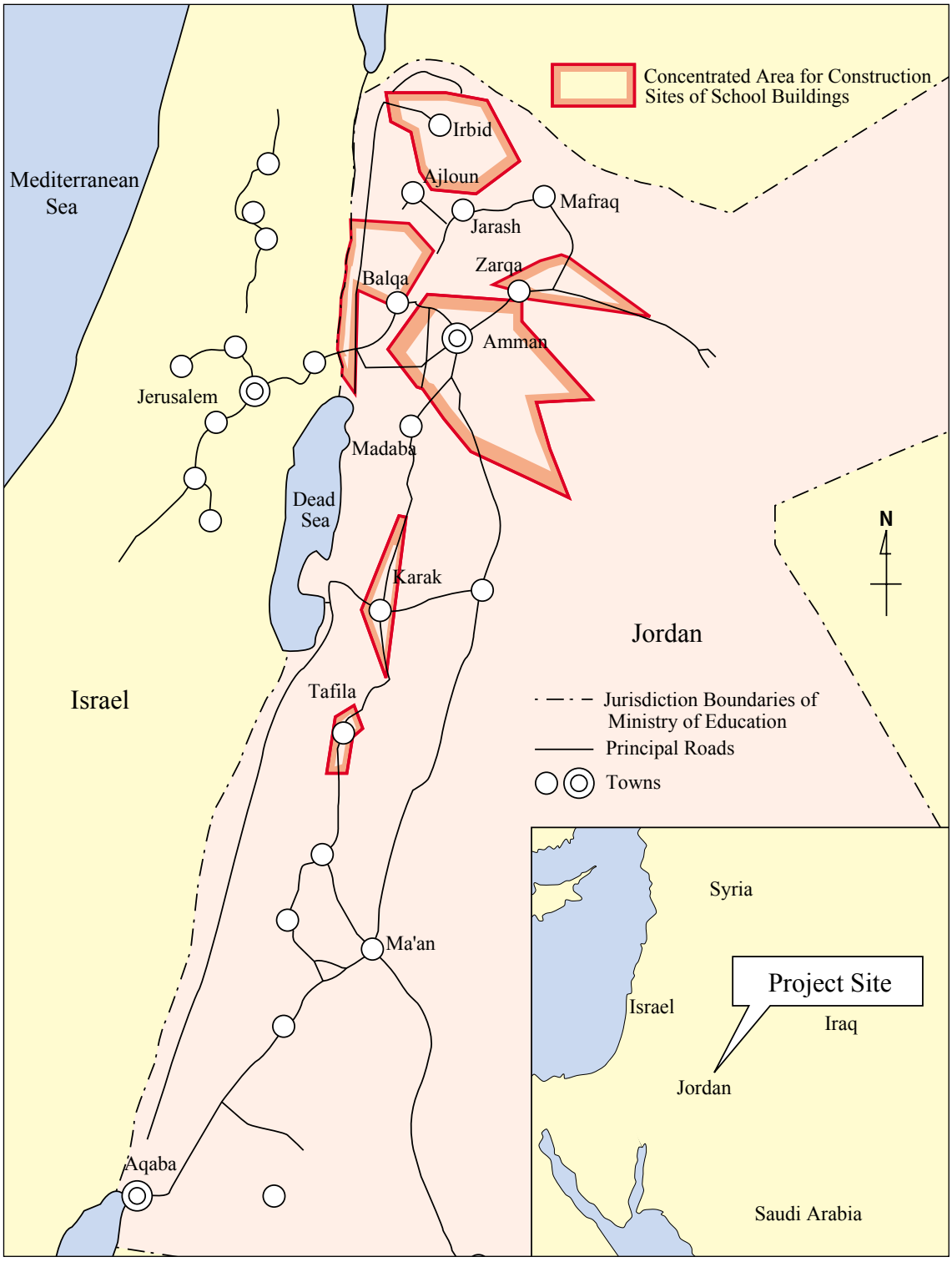
(6) Terminology:

Rented school: A building that was not originally intended to be a school (such as a private home) which is rented for use as a school.

Owned school: The opposite of a rented school, one which has buildings which were intended to be school buildings.

Double-shift school: The operation of classes in double-shifts for two groups of students in the morning and afternoon due to a lack of classrooms or teachers. In Jordan, morning and afternoon shifts are regarded as completely different schools, even though they take place in the same building. They even have different teachers and head master.

Project Location



1. Project Summary and Background

1.1 Project Summary and JBIC Portion

The "Ten Year Human Resources Development Sector Investment Project (1989~1998)" adopted by the Jordanian government was divided into three phases. Phase 1 comprised seven programs (Table 1-1). All received co-financing from JBIC, the World Bank and British ODA (DfID as of now) etc. The JBIC “Human Resources Development Sector Investment Loan” which is the subject of this evaluation was provided and implemented as co-financing with the World Bank for the "Educational Facilities Improvement Program". Therefore in the rest of the report the term "this project" refers to "Educational Facilities Improvement Program", and the term "HRDSIP Phase 1" will refer to all seven programs of Phase 1.

The three objectives of the project were as follows:
[1] To replace rented school buildings and double-shift school buildings with new buildings.
[2] To meet the new demand for school buildings caused by a rising number of students.
[3] To improve the quality of classrooms (particularly specialized classrooms such as laboratories).

The project scope consisted of the construction of 150 new schools, the procurement of equipment and furniture, and consulting services to monitor the JBIC portion of the project.

Table 1-1 The Seven Programs Ten Year Plan to Develop the Education Sector Phase 1

Program name	Program content	Main aid agencies
(1) Curriculum development	- Raising the number of years of compulsory education (9~10 years) - Establishment of a specialized technological secondary stream. - Improvement of the course completion examination system.	World Bank British ODA
(2) Textbook development	- Revision of textbooks. - Expanded storage warehouses. - Review of the lending and distribution systems.	World Bank British ODA
(3) Teacher training	- Revision of teaching staff qualifications (Junior college graduates to university graduates). - Retraining and conferment of degrees for previous staff, in line with the above. - Expansion of the education departments of the three state universities.	World Bank
(4) Educational technology	- Addition of laboratories, libraries and AV rooms to 120 existing schools. - Introduction of equipment and furniture in line with the above. - Preparation of re-education TV programs for teaching staff in remote locations.	World Bank
(5) Educational facilities improvement	- Construction of 150 schools to replace overcrowded rented schools and double-shift schools, and to meet new demand. - Introduction of furniture and equipment in line with the above.	JBIC World Bank
(6) Vocational training	- Nationwide survey of demand for vocational training. - New construction or expansion of vocational training schools. - Introduction of equipment and furniture in line with the above.	World Bank
(7) Education research and development	- Establishment of the National Center for Human Resources Development (NCHRD). - Research and development at the NCHRD.	World Bank

(Source) Appraisal material

1.2 Background of Human Resources Development Sector Investment Project

1.2.1 Status and Problems of the Education Sector (before the Project)

In contrast to nearby oil producing countries, Jordan[1] is extremely lacking in natural resources. Its most important source of foreign exchange is remittances from Jordanians working in nearby Middle-Eastern countries[2]. Following the turmoil of a succession of wars, Palestinians with experience of political and economic difficulties have moved into Jordan as refugees (forming approximately 60% of the country's resident population of approximately three million). The Palestinians value education very highly as "an asset that cannot be taken away from them". This situation has led Jordan to place a high priority on the development of its human resources, with 94% attending compulsory education and 59% attending secondary school (in 1986[3]). The adult literacy rate is 85%, a high level for elementary and middle compared to rates in nearby countries, such as 55% in Egypt and 60% in Iran (literacy figures from the 1996 edition of the UNDP Human Development Report).

The Jordanian education system used to be divided between elementary and middle school (compulsory school), secondary school[4] and general university in a 6-3-3-4 system[5]. The nine years of compulsory education at compulsory school levels are basically received at the same school. There are no tuition fees up to secondary school level. In 1988 approximately 75% of students at compulsory and secondary schools were attending state schools under the jurisdiction of the Ministry of Education. The other 25% attended private schools (10%) and schools run by the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) (15%). This project targeted state schools[6].

As Jordan is an Islamic country, boys and girls are basically educated separately, attending separate schools. Boys' schools have male teachers and girls' schools have female teachers. However, there is no disparity between boys and girls in attendance rates to compulsory and secondary schools, which means they have equal access to educational opportunities.

Jordan has been working to expand education since an early stage, but at the time of the project plan (late 1980s), the following problems were evident in the education sector.

1) The numbers of students in compulsory and secondary schools were increasing by an annual average of 4.0% and school facilities were unable to keep up with a boom in the school age population.
   In 1989, 43% of students were attending rented schools and many schools were operating double-shift systems. Rented schools were not intended to be used as classrooms, lacking in equipment for libraries and laboratories and have no exercise facilities. They are far from providing adequate educational environments. The number of students per teacher was 40 in owned schools, but the

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1 Jordan is a small country located between Israel and Iraq and is easily influenced, both politically and economically, by its neighbors. The late King Hussein signed a peace accord with Israel, making Jordan the second Arab country after Egypt to do so. It has abolished domestic anti-Israel laws and is working to normalize relations, but it supported Iraq in the Gulf War. Its foreign policy fluctuates in the face of change.

2 According to Central Bank documents, remittances from Jordanian workers abroad in 1988 amounted to $903 million, close to the total value of exports, which was $1.026 billion.

3 The Jordanian school year runs from September to August.

4 High schools are divided between general course and vocational course. The secondary schools covered by this project were all for general course.

5 Curriculum Development Program within the HRDSIP Phase 1 changed the system from 6-3-3-4 to 6-4-2-4 with the aim of reinforcing compulsory education.

6 However, vocational training schools in the Vocational Training Program is under the jurisdiction of the Ministry of Labor.

rented school classrooms were too cramped to have more than around 26 students per teacher. This makes the allocation of teaching staff inefficient.
2) Curricula and textbooks were not updated regularly and their content was outdated.
3) There was a shortage of teaching staff who had graduated from general universities (four year degrees). The shortfall was made up by employing graduates from junior colleges, creating a wide disparity in the quality of teachers.
4) Improvement in vocational training was needed to maintain the relative superiority of Jordanian workers in nearby countries.

In order to deal with these problems and pending tasks, the Jordanian government adopted its "Ten-Year Human Resources Development Sector Investment Project (1989~1998)" in 1987, aiming to radically enhance the education sector. The seven programs listed above comprised the first phase of the project (1989~1993[7]).

1.2.2 Foreign Aid for the Education Sector

Table 1-2 shows the state of aid to the Jordanian education sector from foreign countries and international agencies around the time of HRDSIP Phase 1. This project was the first aid from JBIC for Phase 1 of the plan, but the World Bank and USAID had already implemented many projects, mainly for school construction. The World Bank and JBIC again provided co-financing for the "HRDSIP Phase 2", which followed on from HRDSIP Phase 1. The JBIC project was named" Second Human Resources Development Sector Investment Loan". Phase 2 included the construction and rehabilitation of compulsory and vocational training schools and improvements to the content of education.

Table 1-2 Aid Projects Around the Time of HRDSIP Phase 1

Project name	Loan Agreement period	Cumulative total of loans (including grants)	No. of school constructions for compulsory and secondary schools (actual values)
World Bank (1st ~ 7th Education)	1972～1988	$154.2 million	192 schools
USAID (1st ~ 3rd Education)	1976～1985	$43.7 million	84 schools
HRDSIP Phase 1	1989～1990	$141.4 million	181 schools
HRDSIP Phase 2	1995～1997	$187.6 million	68 schools

(Source) World Bank and JBIC materials

[7] The initial version of the Ten Year Project called for the completion of Phase 1 in 1993, and for Phases 2 and 3 to be implemented by 1998. This schedule has delayed, so that Phase 1 finished in 1997, Phase 2 is scheduled to finish in 2002 and Phase 3 has not been planned yet.

1.3 Project History

September	1987	The Jordanian government petitions the Japanese government for an ODA loan to cover only the construction of schools for compulsory education.
January	1989	The Jordanian government petitions the Japanese government for an ODA loan for the "HRDSIP Phase 1" as a co-financing project with the World Bank.
August	1989	Loan agreement signed with the World Bank.
August	1989	Grant agreement signed with British ODA.
Aug. ~ Sep.	1989	JBIC appraisal mission.
December	1989	ODA loan prior notification (however the scope of the loan was narrowed to cover only the "Educational Facilities Improvement Program".
February	1990	Exchange of Notes signed.
May	1990	Loan agreement signed.
January	1991	Outbreak of Gulf War.
November	1994	Additional construction of 30 schools agreed.
September	1995	Closing date of ODA loan extended.
August	1997	Construction completed.
September	1997	Loan disbursement completed.

1.4 Comparison of Original Plan and Actual

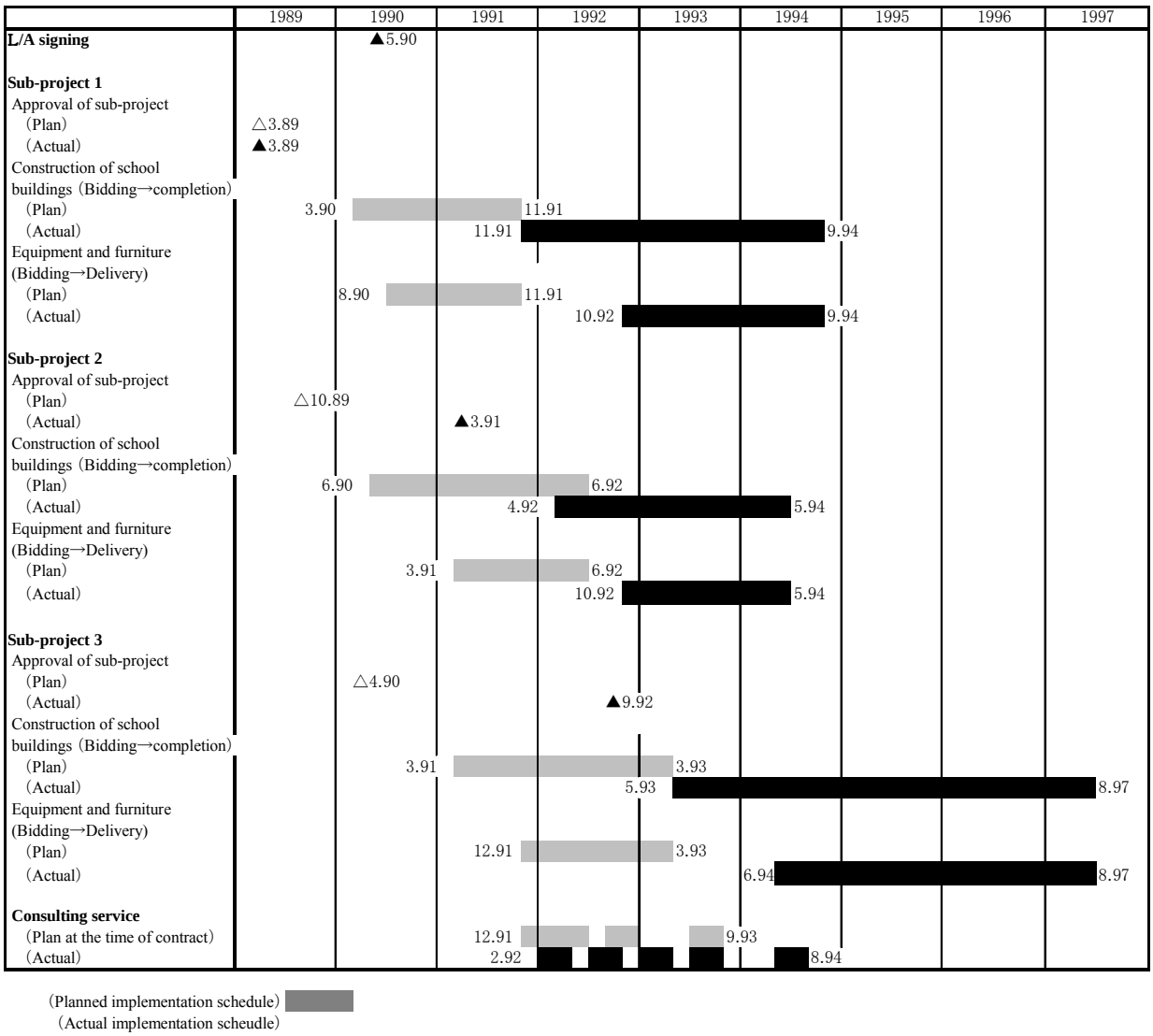
(1) Project Scope

	At the time of appraisal	Actual	(for JBIC portion)*	Difference
Construction of school buildings	150 schools	181 schools	(107 schools)	+31 schools
Equipment and furniture	Procurement of 150 school portions	Procurement of 183 school portions	(183 school portions)	+33 school portions
Consulting service	20M/M (project monitoring)	15M/M (project monitoring)	(15M/M)	-5M/M

(Source) NCHRD material, JBIC material

(Note) Other than the JBIC portion, construction was financed by the World Bank and the Jordanian government's own funds. At the time of the appraisal, the targets for each agency's finance were not clearly defined.

(2) Implementation Schedule



(Source) NCHRD material, JBIC material

(3) Project Cost

	At the time of appraisal			Actual			Difference		
	Overall	JBIC portion		Overall	JBIC portion		Overall	JBIC portion	
Unit	JD million	¥1 million	(JD exchange)	JD million	¥1 million	(JD exchange)	JD million	¥1 million	(JD exchange)
1. Construction of school buildings	57.7	5,745	(21.8)	71.6	7,237	(46.9)	13.9	1,492	(25.1)
2. Equipment	8.7	2,210	(8.4)	10.3	687	(4.4)	1.6	-1,523	(-3.9)
3. Furniture	6.0	1,436	(5.5)	2.6	385	(2.5)	-3.4	-1,051	(-3.0)
4. Consulting service	0.7	57	(0.2)	1.2	44	(0.3)	0.5	-13	(0.1)
5. Contingency	7.6	933	(3.5)	-		-	-7.6	-933	(-3.5)
6. Land acquisition	15.6		-	10.8		-	-4.8		-
Total	96.4	10,381	(39.4)	96.6	8,353	(54.1)	0.2	-2,028	(14.7)

(Source) Materials at the time of appraisal, materials of Ministry of Education.
[Exchange rate] At the time of appraisal: JD1 = ¥263
Actual: JD1 = ¥154 (Weighted average of IFS yearly average rate during 1991 and 1997)

[Reference: Project Cost of "HRDSIP Phase 1"]

1) Project cost for each of the programs

(Unit: US$ million)

Program name	Plan (at the time of JBIC appraisal)			Actual		
	Foreign currency	Local currency	Total	Foreign currency	Local currency	Total
1. Curriculum development	0.1	0	0.1	9.8	2.2	12.0
2. Textbook development	4.9	5.0	9.9	7.2	7.6	14.8
3. Teacher training	11.6	21.5	33.1	7.3	7.5	14.8
4. Educational technology	6.3	4.7	11.0	12.7	13.6	26.3
5. Educational facilities improvement	68.8	109.1	177.7	N.A.	N.A.	138.8
6. Vocational training	5.6	4.0	9.6	2.4	3.8	6.2
7. Education-related research and development	1.4	1.2	2.6	-	3.6	3.6
8. Assistance to NCHRD*	0.3	0.6	1.0	2.2	-	2.2
Total	98.9	146.2	244.9	41.6	38.3	218.7

(Source) Actual values except "Educational facilities improvement" are based on the World Bank's ICR (estimated values in May 1997)
(Note) * Consulting service (computer support etc) to NCHRD except "Educational facilities improvement"

2) Fund plan and actual

(Unit: US$ million)

	Plan	Actual	Difference
Government of Jordan	97.5	55.64	-41.86
JBIC	73.0	72.75[1)]	-0.25
World Bank	73.0	73.00	0
British ODA (grant)	1.4	2.20	0.80
Previous loan balance by the World Bank	-	11.13	11.13
Grant aid by Japan	-	2.89	2.89
USAID	-	0.74	0.74
Total	244.9	218.35	-26.55

(Source) Actual values except for JBIC portions are based on the World Bank's ICR (estimated values in May 1997)
(Note) Total of actual results differ slightly from the previous table due to difference of exchange rate.

2. Analysis and Evaluation

2.1 Evaluation on Project Implementation

2.1.1 Project Scope

This project was intended to build 150 schools, divided into three subprojects, and procure equipment and furniture[8]. Each subproject in turn was formulated and appraised by the relevant department of the Ministry of Education and evaluated and approved by the Policy Council (which will be described later) before being agreed by JBIC. The schools were constructed using co-financing from JBIC and the World Bank and the Jordanian government's own funds. The targets for each agency's finance were determined at the appraisal stage of each subproject. All equipment and furniture were covered by the JBIC portion.

(1) Construction of school buildings

The main purpose of building the 150 schools were to replace the rented and double-shift schools with new buildings and to accommodate new demand for school space caused by rising numbers of students. Among the schools that were built, few were simply replacement buildings which would receive all the relocated students from an old school. Most were built as new schools, merging the students from a number of nearby rented schools or taking the excess students from several overcrowded schools. The order of priority for selecting sites for schools was as follows:
[1] Meeting demand for new schools.
[2] Replacement of schools which are rented and also operating on double-shift.
[3] Replacement of rented schools.
[4] Replacement of double-shift schools.

Based on this order of priority, each of the 25 regional directorates (regional departments) of the Ministry of Education (12 governorates further divided into 25 regional directorates) listed the areas which urgently needed new schools and applied to the Ministry. The Ministry prepared standing lists of applications on computer. The school site selections were examined by a Site Selection Committee comprising members from the central Ministry and the regional directorates. As state schools do not have school bus systems, the sites that were selected were those within walking distance (2~3km) from the students/homes. Thus, the site selection process was systematic and had no major problems.

The number of schools to be constructed, which was set at 150 at the time of the appraisal, rose to 152 through the above process by the time the appraisal of sub-projects was completed. Table 2-1 compares the schools which were scheduled for construction with the actual construction. As the table shows, the final number of schools built rose to 181 (of which 6 were classroom additions), of which 107 were financed by JBIC. The final number of schools built was increased following a request from the Jordanian government for 30 additional schools, which was submitted in the second half of the project. JBIC approved this change (the World Bank portion was reduced by one school). As a result, the project as a whole grew by 31 schools relative to the plan. The rated capacity of the schools was increased by 21,680 to 151,160 students. As will be described later, this change was implemented

[8] A total of 420 compulsory and secondary schools were scheduled to be newly established in the Ten-Year HRDSIP, but in an actual basis it will be anticipated to reach around 250 schools including Phase I (this project) and Phase 2 under implementation.

using contingency from the ODA loan, which grew due to changes in the Yen-Dinar exchange rate. This project was originally intended to build 150 schools as the first phase of an overall plan to build 420 schools in total. Rather than adding schools, this change in the plan simply brought forward the building of some schools from the next phase. Therefore the JBIC's approval of the Jordanian government's request showed appropriate flexibility in serving the project's objectives.

Table 2-1 Comparison of Original Plan and Actual for Construction of School Buildings

(Number of Schools) (Unit: School)

	At the time of JBIC appraisal	At the time of appraising sub-projects				Actual				Difference			
		Number of schools				Number of schools				Number of schools			
		C	C+S	S	Total	C	C+S	S	Total	C	C+S	S	Total
Sub-project 1	n.a.	50			50	50			50	-	-	-	-
Sub-project 2	n.a.	27	15	3	45	28	15	2	45	1	-	-1	-
Sub-project 3	n.a.	27		30	57	42		44	86	15	-	14	29
Total	150	104	15	33	152	120	15	46	181	16	-	13	29

C: Compulsory S: Secondary

(Full number of students) (Unit: persons)

	At the time of appraising sub-projects			Actual			Difference		
	Full number of students			Full number of students			Full number of students		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Sub-project 1	17,760	29,280	47,040	23,520	26,160	49,680	5,760	-3,120	2,640
Sub-project 2	15,840	21,120	36,960	15,360	21,120	36,480	-480	-	-480
Sub-project 3	16,720	28,760	45,480	22,560	42,440	65,000	5,840	13,680	19,520
Total	50,320	79,160	129,480	61,440	89,720	151,160	11,120	10,560	21,680

(Source) Calculated from NCHRD Sub-project Appraisal Report and Progress Report.

(Note) There are no figures for student numbers from the time of the JBIC appraisal.

Looking at school numbers in each of the twelve governorates of the country, most of the schools were built in the three governorates which have high production densities due to Amman, Irbid and Zarqa, the three largest cities (Table 2-2). These three governorates had large numbers of rented schools and their demand for new school buildings was high. Subproject 1 targeted only these three governorates.

Table 2-2 Numbers of Schools Built Under This Project and Rented Schools in Each Governorate (As Of 1989)

Governorate	No. of schools built				Status of rented schools in each governorate		
	Compulsory	Compulsory + Secondary	Secondary	Total	Rented school	All the schools	Percentage of rented schools
Amman	38	5	7	50	303	606	50%
Irbid	28	2	17	47	229	477	48%
Zarqa	27	0	1	28	184	302	61%
Balqa	6	4	5	15	66	174	38%
Karak	7	2	3	12	48	203	24%
Mafraq	4	1	2	7	76	254	30%
Jarash	3	0	4	7	57	120	48%
Madaba	0	1	3	4	36	111	32%
Ma'an	2	0	2	4	25	115	22%
Ajloun	1	0	2	3	34	81	42%
Tafila	3	0	0	3	18	72	25%
Aqaba	1	0	0	1	16	41	39%
Total	120	15	46	181	1,092	2,556	43%

(Source) Calculated from NCHRD progress reports. Data for rented schools is from "The Educational Statistical Report 1989".

The design of the schools consistently followed the standard design used in the World Bank's Seventh Education Project (loan agreement signed in 1988). Taking the standard size of one class as 40 students (1.2m^2 per person), the schools had between six classes (240 students) and 30 classes (1,200 students) in multiples of six classes. The number of floors was decided on the basis of the consultant's soil survey[9]. The laboratories, home economics classrooms, staff rooms, multi-purpose halls and other specialized rooms were also included, and the toilets were grouped in separate blocks (in the original design the toilets were included in the main building, but as existing schools suffered problems of odor and leakage from their toilets, they were placed in a separate block instead). The only major design difference between compulsory schools and secondary schools was that secondary schools had twice as many laboratories as compulsory schools. The scale of the schools was determined based on the number of students from schools that were being replaced by the Ministry of Education's Educational Planning Department, and the increase in the population of the region covered. They use a uniform population growth rate of 3.5% in all forecasts of future growth in student numbers.

[9] Some schools with classroom numbers other than multiples of six were also constructed.

(2) Procurement of Equipment and Furniture

The equipment and furniture to be introduced under this project were based on the "shopping list" drawn up and used for the World Bank's Seventh Education Project. The eight main items for procurement[10] were:

[1] Experimental equipment
[2] Computers
[3] Tools for home economics and craft subjects (kitchens for cookery, craft tools, sewing machines etc.).
[4] Art equipment.
[5] Sports equipment.
[6] Typewriters and other office equipment.
[7] AV equipment.
[8] Desks, chairs and other furniture for ordinary and specialized classrooms.

They were to be delivered to 181 schools, but there were 183 delivery destinations for these materials. The difference of two schools in the total occurred because where the students of a single old school were divided between the new and old schools, the equipment and furniture were also divided between the two.

(3) Consulting services

Consultants were employed to supervise procurement and disbursement under the JBIC portion, and to assist in the preparation or reports for submission to JBIC. This step was suggested by JBIC at the time of the appraisal. The quantity of consulting service was estimated at 20 man-months at the time of the appraisal, but the contract was signed at 15 man-months.

2.1.2 Implementation Schedule

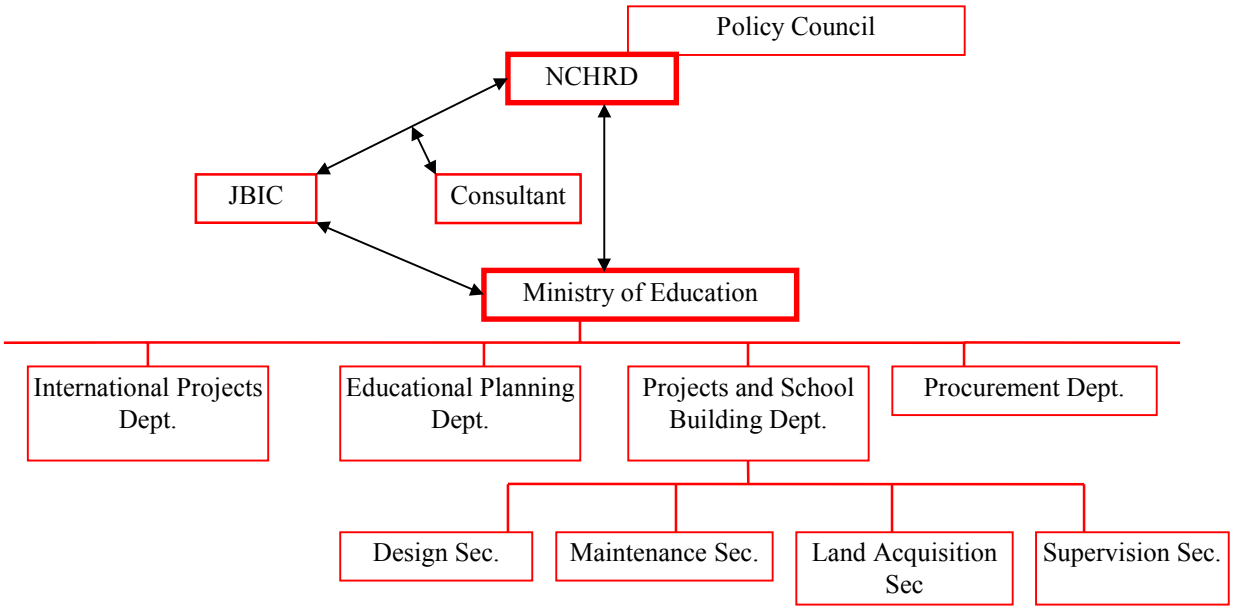
This project made almost no progress between 1990 and 1991, and as a result the completion of sub-project 1 was delayed by two years and ten months and the implementation schedule of the entire project was set back. The delay was due to internal turmoil in Jordan caused by the Gulf War. The crisis prompted 300,000 Jordanians (approximately one tenth of the population) who had been working in other Gulf countries to return to Jordan all at once. This influx included an increase of approximately 100,000 in the number of students, and the Ministry of Education had to give priority in dealing with them. Furthermore, the priority given to construction of facilities to accommodate the returning citizens caused problems for the procurement of construction materials and equipment. The resulting delay appears to have been unavoidable. The closing date of ODA loan was extended by two years to accommodate the delay.

[10] In this report, articles [1]~[7] are grouped under the name of "equipment".

2.1.3 Project Cost

This project was a co-financing project between JBIC and the World Bank (with a portion of the project cost borne by the Jordanian government), with the ODA loan covering approximately 56% of the total project cost. Comparing the plan at the time of the appraisal with the actual construction, there was approximately no difference in the total project cost. In the content of the project, the increase in school construction cost was covered by contingency and by reduced procurement of furniture. A surplus occurred in loaned funds from the JBIC portion of the project due to the rise of the Yen against the Jordanian Dinar. This surplus enabled the construction of additional schools.

2.1.4 Implementation Scheme



(1) Executing Agency

The Jordanian Ministry of Education was the executing agency for this project. The responsible departments of the Ministry of Education handled subproject planning, school design, and contractor tenders and contracts. Coordination between the various executing departments within the Ministry of Education was handled by the Ministry's International Projects Department.

The National Center for Human Resources Development (NCHRD)[11] coordinates and supervises the implementation of the "HRDSIP Phase 1". The NCHRD was established by legislation to coordinate the execution of the "Ten Year HRDSIP". As such, it monitored the progress of all parts of the plan, handled the administrative work for the Policy Council's policy decisions and generally played a major role in the execution of this project. (The Policy Council is the policy formation agency for the Ten Year HRDSIP and it conducts periodic meetings with the vice-ministers of the relevant ministries). Specifically, it prepared the appraisal reports for the subprojects, approved contracts, prepared progress reports, and made reports and applications to JBIC and other partners. Of the Center's 14 staff,

[11] In July 1995 it was renamed from the NCERD (National Center for Education Research and Development) to NCHRD (National Center for Human Resources Development).

two were working on this project. They worked on this project in constant liaison with the International Projects Department of the Ministry of Education. The NCHRD is also a research agency. At present the NCHRD is working together with HRDSIP Phase 2.

(2) Consultants

As noted above, a consultant was employed for this project (A Japanese consultant was selected by a shortlist method). The consultant's terms of reference were limited to supervision of the JBIC portion of the project, particularly assisting in the preparation of documents on computers, and providing liaison between JBIC and the Jordanian side. According to the NCHRD, the employment of a consultant made an effective contribution to the efficient execution of the project.

(3) Contractors

1) Construction of school buildings

Packages of 2~3 schools were contracted out, after JBIC approval of the subproject concerned, through domestic competitive tender. Domestic competitive tender was chosen because the value of the contract lots was small and in the World Bank's experience even if they were offered for international competitive tender, there would be no foreign tenders. JBIC agreed to this point at the time the loan agreement was signed.

2) Procurement of equipment and furniture

At the time of the appraisal it was anticipated that both the equipment and furniture would be procured by international competitive tender. For the furniture, JBIC was asked before the tender for sub-project 1 to change to domestic competitive tender and JBIC agreed to the change. The reason for the change was that all the items to be procured were available from Jordanian sources, which were more appropriate sources considering the shipping costs incurred by imported goods and the difficulty of repairing them. For the equipment and furniture, a total of 137 contracts were made. Some of these were cancelled due to failure of the contractors to fulfill them (equivalent to $200,000). Other than these, there were no major problems with the performance of the contractors.

2.2 Evaluation on Maintenance

2.2.1 Maintenance Scheme of School Buildings

The system for school maintenance by the Ministry of Education is that each school (the Ministry of Education has 2,000 owned schools and 700 rented schools) requests each directorate concerned for whatever repairs are required. These requests are placed in a computerized order of priority in the maintenance section of the Maintenance Section of the Ministry, with budget being allocated to them in priority order.

School repairs are divided into two classes: structural maintenance and routine maintenance. Structural maintenance deals with major repairs to the structure of the buildings, such as leaking roofs and

cracked walls. These costs amount to JD20,000 over each ten year period for one school. Routine maintenance deals with simple matters such as broken windows and doorknobs, as well as repainting. For schools built under this project, they would amount to around JD2,500 per school per year. For rented schools, the Ministry of Education is only responsible for routine maintenance (costing around JD1,000), and the owner is responsible for structural maintenance.

2.2.2 Maintenance Status of School Buildings

The lack of funding for school repairs is a grave problem in Jordan. The annual budget for routine maintenance is JD1 million, while the total budget for the Ministry of Education is JD180 million (1995). This means routine maintenance only receive a share of less than 1% of the overall budget. Considering the fact that each school needs JD2,500 for routine maintenance, the budget of JD1 million is only enough for 400 schools, out of the 2,000 schools under the jurisdiction of the Ministry of Education. Clearly the budget is inadequate. Furthermore, there is no budget allocation for structural maintenance. The World Bank provided JD11 million of financing for major structural maintenance under Phase 2 of HRDSIP, which repaired 600 out of 1,000 schools which needed structural maintenance (approximately half of all owned schools). The other 400 schools are still waiting for funding.

The schools covered by this project were built between 1992 and 1997, which means none of them require major repairs yet (all the schools visited during the field survey for this evaluation were being used without problems). However, they will all need repairs at some stage and for that reason the budget shortage is cause for concern.

Apart from the construction of the schools, Jordan relies on foreign aid for their maintenance, and this situation is a problem for the sustainability of the project.

2.2.3 Maintenance of Equipment and Furniture

Equipment procured under this project have guarantee periods of one or two years, but if maintenance is required after the expiration of their guarantees, the school concerned makes an application to the concerned regional directorate, and the regional directorates request funds from the central Educational Materials Department. In some cases the maintenance costs for low-cost repairs to equipment may be covered by collections from students (the amount depends on the year of school, but the amount is very small, around JD3~6 per person). In general, equipment are managed very carefully. For example, in the laboratories only the physics teacher has the key for the cupboards. In the schools visited for evaluation, none of the AV equipment or computers had broken down and they are being used well at present.

2.3 Project Effects and Impacts

In this section we will examine the usage of the schools built under this project and the effects produced by the project, based on the findings of the field survey made for this evaluation. Later we will also examine the effects of the whole of HRDSIP Phase 1.

2.3.1 Summary of the Field Survey

(1) Survey method

The field survey for this project was implemented in September 1998. The survey group was accompanied by the education sector evaluator from the World Bank for part of the trip[12]. The survey method was to gather data from the Regional Departments of the Ministry of Education in those eight governorates of the twelve which had concentrations of schools built under this project. One or two schools in each governorate were then visited. In each school, questionnaires were given to the headmaster, five teachers and 5~10 students to investigate the breakdown of students in each school, the usage of the school buildings, the time students spent getting to school and other aspects.

(2) Summary of the visited schools

Table 2-3 summarizes the visited schools. In addition to seven new schools built under this project, we visited one rented school and one double-shift school for the purpose of comparison. Only seven of the 181 schools built under this project were visited, which means these do not serve as more than case studies. However, considering the fact that the schools share a standard design and are equipped with the same equipment, it is reasonable to assume the survey gave a grasp of the hardware side of the project.

2.3.2 School Building Utilization

(1) School grades using the buildings

As Table 2-3 shows, the schools are not necessarily separated between compulsory schools (grades 1~6 and 7~10) and secondary schools (grades 11 and 12). There are some irregular school compositions, such as grades 1~11 or 4~12. This is the case because the schools which were built under this project are fully equipped with specialized classrooms and the Ministry of Education wants to enable secondary school students to use these schools. In some cases secondary school students are given priority and transferred to the new schools ahead of compulsory school students. If students graduate from compulsory schools and do not have a suitable secondary school nearby, they may be able to receive secondary school classes at the same school they attended before. These practices are hard to imagine in Japan's school system, but this is a flexible way of using scarce school facilities.

Each of the schools visited had an attendance rate (number of students attending school/ number of students registered) of nearly 100%, which shows the strong influence of parents who put education before anything else.

[12] The World Bank was conducting a field survey to evaluate HRDSIP Phase 1 and the Seventh Education Project which preceded it. Information was shared between JBIC and the World Bank. The preliminary precis of the World Bank's evaluation is attached as ANNEX to this report.

Table 2-3 Summary of Visited Schools

School name	Governorate	Established	Gender [1]	School grades	Number of classrooms (number of which in use)	Capacity (Actual No. of students)	Capacity utilization rate [2]	Change in number of students since established (in past year)
Iskan Al-Jawh	Amman	On 1st September 1997 by the merger of two nearby rented schools and one owned school.	Girls' school (boys attend grades 1~4)	1-11	19 (19)	760 (572)	75%	+36% (+36%)
Graina	Madaba	On 1st September 1995 by the merger of two nearby rented schools.	Girls' school	7-12	18 (9)	720 (240)	33%	-32% (-10%)
Subaida Bent Al-Hereth	Zarqa	On 21st January 1996 by the relocation of a nearby double-shift school.	Girls' school	10-12	30 (19)	1,200 (754)	63%	-7% (-4%)
Baq'a Secondary	Balqa	On 1st September 1996 by the complete relocation of an old school, which was abandoned.	Girls' school	11-12	30 (21)	1,200 (780)	65%	-7% (-5%)
Dhahr Al Serew School	Jarash	In May 1995 by the complete relocation of a rented school, which was abandoned.	Girls' school (boys attend grades 1~3)	1-10	16 (15)	640 (534)	83%	+45% (+45%)
Fatima Al-Zahra	Mafraq	On 21st January 1996 by the relocation of a part of a double-shift school.	Girls' school	1-11	21 (21)	504 (638)	127%	-2% (-3%)
Al-Thanieh	Karak	On 1st January 1995 by the relocation of some of the students from three rented schools.	Boys' school	4-12	12 (11)	480 (356)	89%	+103% (+15%)
Al-Khansa[3]	Balqa	September 1, 1993	Coeducational	1-2	4 (4)	72 (87)	121%	-14% (+1%)
Mua'th Basic[4]	Irbid	1956	Boys' school	6-9	20 (20)	800 (800)	100%	n.a. (+3%)

Source Prepared from the results of questionnaires at each visited school.

Notes 1) In exceptional cases, boys who live too far to travel to a boys' school are allowed to attend girls' schools (up to grade 4). The reverse is never allowed.
2) Capacity utilization rate = Number of students/ Capacity.
3) Existing rented school.
4) Existing double-shift school.

(2) Capacity utilization rate

Table 2-3 shows a broad range of capacity utilization rates (actual number of students/ capacity) from 33% to 127%. Data[13] has been obtained for 103 schools out of the 181 built under this project, and the average capacity utilization rate among those is 75%, but the range is from 18% to 174%. Four schools have reverted to double-shift systems. Given the fact that none of the schools has been in service for more than six years, an average of 75% seems appropriate, but it must be remembered that a considerable number have low capacity utilization rates. Of the 103 schools, 11 had capacity utilization rates of 110% or more while 32 had rates below 60%. There does not seem to be any correlation between capacity utilization rate and the year the school came into use. According to the

13 Owing to limitations of the survey, we were only able to obtain data for 103 schools.

Jordanian side, the reason for low capacity utilization rates is that they made the schools larger than current demand to allow for future population growth (estimated at 3.5%).

The average growth rate of Jordan's population over the last three years (1994~1997) was 3.46% in rural areas and 3.53% in urban areas. Therefore the rate is roughly 3.5% over all regions. The growth rate in the school age population is even higher. Between 1996 and 1997 the number of 5~14 year olds grew by 4.6%, a rate above the overall population growth rate. Among the schools visited for this evaluation, some had seen sharp increases in student numbers in a single year, such as Dhahr Al Serew in Jarash governorate and Al-Thanieh in Karak governorate. There are also sudden population movements and influxes of refugees in some areas (returning overseas workers and Palestinian refugees). Therefore there is some validity in the Jordanian explanation that "even schools which have low capacity utilization rates now will see their usage increase as the school-age population rises".

However, problems can be seen in individual cases. For example, the Subaida Bent Al-Hareth school in Table 2-3 is located in Zarqa governorate in an area of high population density. There are many rented and double-shift schools in the surrounding area. However, 11 of the school's 30 classrooms are vacated for special after-school classes, which is an inefficient way of using them. The Graina school in Madaba does not use 9 of its 18 classrooms, or the chairs and desks in them. The number of students at the school has dropped from 355 to 240 over the last four years, which suggests that the school size was too large in the first place. The same was true of the Baq'a school in Al Balqa.

In Jordan, which has a high rate of population growth and extreme population mobility, it is illogical to say that because a school has a low capacity utilization rate, its scale or location are inappropriate. However, the situation described above indicates that more cautious deliberation is needed in choosing the scale and location of schools. For example, rather than the method adopted in this project of building classrooms for 40 students in multiples of six, it would have been better to determine the scale of each school in more detail. Research on school size by the NCHRD in 1991[14] indicated that the tendency towards small schools in Jordan increased costs per student. Nevertheless it is important to remember that if schools are made larger and their capacity utilization rate drops, cost efficiency will actually fall.

At the Fatima Al-Zahra school in Al Mafraq, which was visited in the survey, there were not enough desks and chairs. The schools only have enough furniture for their rated student capacity, leaving a shortage at the Fatima Al-Zahra school, which has a 127% capacity utilization rate. Therefore even though the size of the classrooms is adequate in some cases three students must sit on a bench meant for two while one third of the classroom was empty. In such cases the transfer of furniture from underused schools should be considered.

2.3.3 Improvement of the Educational Environment

All those who gave replies in the field survey said that the study environment in the new schools was far better than that in the old rented and double-shift schools. In fact, the Al-Khansa rented school which was visited in the survey had classrooms of less than $20m^2$ for 24 students and there was no staff room. The Mua'th Basic double-shift school had a morning shift from 7:00~11:40 and an afternoon shift from 12:00~16:00. These shifts are 30 minutes shorter than the schools hours for the

[14] Ahlawat, K. (1991), Analysis of School Size and Grade Structure in the Public Schools of Jordan: Policy Implications, National Center for Educational Research and Development (NCERD), Publication Series No.7, Amman.

same grades (6~9) in single shift schools, which run 8:00~13:15. This is because each hour has 40 minutes of class time instead of 45 to allow time for the double-shifts to change over. Double-shift schools have a variety of other problems, such as load for two classes being held in a classroom for one class. The switch to a one-shift system in a new school is a great improvement. The rented and double-shift school visited in the field survey are refusing entry to any more students, which means they cannot offer educational opportunities to all children in their catchment areas.

The new schools have enough classrooms and are fully equipped with rooms and fixtures for laboratories, home economics rooms, computers rooms and other specialized rooms, enabling students to receive full education in line with the curriculum. (The new curriculum broadened the range of subject options and emphasized practical skills and the incorporation of teaching methods for positive, active learning).

Thus the new schools clearly provide an improved learning environment. One problem with them is that the physical education areas are outdoors and paved in concrete, which means they do not suit the weather in Jordan very much, where summers are very hot and winters are bitterly cold.

In this survey few respondents said their journey to school had been lengthened. The longest time to reach school among the respondents was 40 minutes on foot.

2.3.4 Quantitative Effects of the Project

Section 2.3.3 looked at the usage of the new schools to examine the qualitative effects of the project in terms of improved learning environment. This section will examine the following quantitative effects:
(1) Substitution of new schools for rented and double-shift schools.
(2) Expansion of class sizes.
(3) Savings on school rentals.

(1) Substitution of new schools for rented and double-shift schools.

This project was scheduled to replace a total of 214 rented and double-shift schools, which would then be closed. In this survey we were able to obtain data on 130 such schools. Of these 130 schools, 86 (approximately 2/3) had already been closed but the remainder had not (Table 2-4). Of the closed schools, over 70% had been rented schools[15] and most were at the compulsory school levels, or schools which combined all grades up to secondary school.

Table 2-4 Closure of Rented and Double-shift Schools Under This Project

(Units: Schools)

Schools scheduled for closure	Data obtained	Closed schools	Closed rented schools	Closed double-shift schools
214	130	86	62	24

(Source) Prepared from the findings of questionnaires put to the Ministry of Education Regional Departments in each governorate.

[15] These rented schools include some that were also double-shift schools.

For reference, Table 2-5 shows movements in the numbers of owned schools and rented schools in Jordan as a whole. The table shows that at the time of the appraisal in 1989 approximately 43% of all schools were rented, but that share fell to 25% by 1995. In terms of shares of student numbers, the share improved from 41% to 15% over the same period. By school type, the decline in the share of schools being rented was particularly marked among secondary schools.

Table 2-5 Movements in Numbers of Purpose-built and Rented Schools in Jordan as a Whole (FY 1989~1995)

		Number of schools				Number of students			
	FY	Owned	Rented	Total	Percentage of rented schools	Owned	Rented	Total	Percentage of rented schools
Compulsory school	1989	1,186	855	2,041	42%	219,684	207,830	427,514	49%
	1995	1,306	653	1,959	33%	667,527	132,560	800,087	17%
Secondary school	1989	278	237	515	46%	97,109	12,039	109,148	11%
	1995	710	35	745	5%	121,149	2,233	123,382	2%
Total	1989	1,464	1,092	2,556	**43%**	316,793	219,869	536,662	**41%**
	1995	2,016	688	2,704	**25%**	788,676	134,793	923,469	**15%**

(Source) Prepared from the findings of questionnaires put to the Ministry of Education.

There has also been a decline in the use of double-shift schools, but comparison between 1989 and 1995, as shown in Table 2-6, is only possible for compulsory schools. Those figures show a reduction in the number of double-shift schools from 27% in 1989 to 18% in 1995. Of the 202 double-shift schools which were closed, 158 were rented double-shift schools, which demonstrates that such schools were given priority for closure.

Table 2-6 Movements in Numbers of One-shift and Double-shift Schools in Jordan as a Whole (FY 1989~1995)

		No. of schools					No. of students			
	FY	One-shift	2-shift	Rented schools of double-shift	Total	Percentage of double-shift schools	One-shift	2-shift	Total	Percentage of double-shift schools
Compulsory school	1989	1,488	553	309	2,041	**27%**	n.a.	n.a.	n.a.	n.a.
	1995	1,608	351	151	1,959	**18%**	622,913	177,174	800,087	22%
Secondary school	1995	689	56	3	745	8%	111,529	11,853	123,382	10%
Total	1995	2,297	407	154	2,704	15%	734,442	189,027	923,469	20%

(Source) Prepared from the findings of questionnaires put to the Ministry of Education.

The above figures show that both rented and double-shift schools have reduced considerably from the time the plan was formulated, and they have been replaced by owned schools. From the limited data available, it is not possible to define the rate of contribution this project made to school replacement nationwide, but the contribution to substitution at the compulsory school levels appears to have been high. The average capacity utilization rate of the schools built under this project is still only 75%,

which means further substitution should be possible by making more use of the spare capacity.

(2) Expansion of class sizes.

One of the problems of rented schools is that they prevent efficient allocation of teachers. The classrooms are too small, which means that the number of students per teacher is 26, rather than 40 as in existing owned schools. In this section we will examine the change in class sizes before and after this project and the change in the number of students per teacher. The data obtained in the survey was used to ascertain class size (the Ministry of Education does not keep track of the situation in each school). According to the figures obtained, the average number of students per classroom was over 35 in three of the seven schools visited, but it was around 30 in the other four. One of them was even below 30. Data on students per teacher is available for 103 schools, and from those figures the number is around 20, which is actually lower than it was at the time of the appraisal. Thus class size and the number of students per teacher have fallen short of the targets set at the time of the appraisal, and in particular, the number of students per teacher has actually fallen.

According to the Jordanian side, the decline in the number of students per teachers is due to the increased numbers of specialist teachers under the new curriculum. For the quality of education it is actually better to have fewer students for each teacher. Therefore the situation need not be seen as a problem based on the narrow perspective of cost efficiency.

(3) Savings on school rentals

By comparing cost per student (C) for the schools built under this project with that of rented schools, we have been able to confirm the fact that this project has yielded savings in school rental charges. For the comparison, however, the calculation was based on “a set of assumptions” derived from available data. The data related to opportunity cost was not available.

First, the preconditions used in calculating C for this project's school were as listed in Table 2-7. C is calculated by dividing the total cost for 181 schools in a period of "a" years by the total number of students over those "a" years. The construction cost for the 181 schools was JD71,625,000, the cost of acquiring the land was JD10,762,000 and the cost of furniture and equipment was JD12,986,931. For an owned school, the cost of routine maintenance is JD2,500/year. Therefore the total cost over "a" years is JD2,500 x 181 x a. The total number of students passing through the project's schools over a period of "a" years is the number of students in the 181 schools (their rated student capacity), which is 151,160, multiplied by a. By these assumptions, C for the project's schools equals the left column of Table 2-7 divided by the right column.

Next, C for the rented schools was calculated by a simpler method. The annual cost demanded by a rented school consists of the annual rent plus the cost of routine maintenance. If we assume that there is no increase in rent over the "a" years, the cost per school will be a constant every year. Therefore C for a school can be calculated by dividing the annual cost by the number of students per school. The number of students per rented school was put at 147 in statistics for FY 1995 and that figure was used here. According to the Ministry of Education, the cost of routine maintenance for a rented school is approximately JD1,000, which means the annual routine maintenance cost per student can be set at JD6.8. However, in the absence of statistical data on annual rents, we will have to make further assumptions. Based on the JD2,000 annual rent for the rented school (87 students) which was visited

in the field survey, we assumed an annual rent cost of JD23 per student, with no raise in rent over "a" years (assumption 1). Under assumption one, C is JD29.8 (being JD6.8 plus JD23, as in Table 2-8).

Table 2-7 Preconditions for C for Schools Built Under This Project

	Total cost over "a" years (JD)	Total number of students over "a" years
Cost of school building construction	71,625,000	151,160 students×a
Cost of equipment and furniture	12,986,931	
Land acquisition cost	10,762,000	
Routine maintenance cost	2,500×181 schools×a	

Source: Prepared from JBIC documents.

Note: The cost of structural maintenance for schools the size of those in this project is put at JD20,000 per school at intervals of ten years. For new schools the first structural maintenance was assumed to be required 20 years after construction. The cost of such maintenance divided by the number of students using the school in 20 years is negligible and was omitted from the calculation in Table 2-9.

Table 2-8 C for Rented School

(Units: JD)

	Assumption 1	Assumption 2
Annual rental charge per student	23.0	30.0
Routine maintenance cost per student (per year)	6.8	6.8
C	29.8	36.8

Based on the preconditions and assumptions stated above, C can be calculated as shown in Table 2-9. The schools built under this project incur initial construction costs, but there is no need to pay rent for them. Therefore as the total number of students educated in the school grows over the years, the value of C falls. Under assumption 1, C for the project's schools falls below that for a rented school in the 24th year after construction.

Table 2-9 Cost Per Student (C)

(Units: JD)

	Project school (100% capacity utilization rate)	Rented school (Assumption 1)	Rented school (Assumption 2)	Project school (75% capacity utilization rate)
1 year	633.9	29.8	36.8	845.3
2 years	318.5	29.8	36.8	424.6
5 years	129.2	29.8	36.8	172.2
10 years	66.1	29.8	36.8	88.1
15 years	45.1	29.8	36.8	60.1
20 years	34.5	29.8	36.8	46.1
21 years	33.0	29.8	36.8	44.1
22 years	31.7	29.8	36.8	42.2
23 years	30.4	29.8	36.8	40.6
24 years	29.3	29.8	36.8	39.0
25 years	28.2	29.8	36.8	37.6
26 years	27.3	29.8	36.8	36.3
27 years	26.4	29.8	36.8	35.1
28 years	25.5	29.8	36.8	34.0
29 years	24.8	29.8	36.8	33.0
30 years	24.0	29.8	36.8	32.0
31 years	23.3	29.8	36.8	31.1
32 years	22.7	29.8	36.8	30.3
33 years	22.1	29.8	36.8	29.5

However, the point in time at which C for a project school falls below that for a rented school depends on the amount set as the annual rent per student. Under assumption 1 the amount was set as JD23 based on a single example, but if a higher level of JD30 was set (assumption 2), C for the project schools would undercut the rented schools 20 years after construction.

If the calculation is repeated using the student numbers corresponding to the current average capacity utilization rate, which is 75%, C for the project schools will not fall below that for rented schools until their 33rd year under assumption 1. Clearly the low capacity utilization rate is undermining the economic efficacy of the project.

Yet, as mentioned at the beginning of this section, the above comparison uses an approximate calculation based on “a set of assumptions.” Therefore, rather than precisely reflecting the situation after, for example, 20 or 24 years, the comparison should be regarded as indicating that, in the long term, “an owned school tends to be less costly than a rented school”.

2.3.5 Attainment of the Goals of HRDSIP Phase 1 and the Status of the Education Sector

So far this report has concentrated on this project financed by JBIC (Educational Facilities Improvement Program), but in closing, attainment of the goals of HRDSIP Phase 1 and the status of the education sector will be discussed. The following is a summary of the key points of documents from the World Bank ICR and the NCHRD concerning the seven programs listed in "1.2 Project Summary and JBIC Portion".

(1) Curriculum development

The improvements to the educational system, such as the extension of the end of compulsory education, division of courses in secondary school, and a better system for final examinations, were completed as scheduled. The curricula for all subjects in basic education have been revised and teacher guidance manuals have been developed. The problem with previous curricula was that they tended to put so much emphasis on “knowledge” and very little emphasis on “thinking”. The new revision considered the development of critical thinking skills and individuality, with emphasis on experiment and first-hand experience.

(2) Textbook development

The Textbook Publication Department within the Ministry of Education was strengthened, and textbooks for grades one to twelve and the teacher guidance manuals were revised in line with the new curricula with the assistance of British ODA. By 1993 the new textbooks had been distributed to all grades without any delays. The field survey conducted for this evaluation confirmed that almost all students had new textbooks.

(3) Teacher training

Under the New Education Act of 1988, the level of qualification for teachers was raised, so that even teachers at the compulsory school levels had to be university graduates. Teachers with junior college qualifications who were already in service were given time to raise their qualifications, and a program was launched to help them to do so. Table 2-10 shows the changes in the academic qualifications of compulsory school teachers throughout Jordan as a result of this change. Between 1991 and 1997 the proportion of teachers qualified to at least graduate level rose, and an examination of teachers' qualifications reveals the effect the education reform has had. Before the reform there were approximately 22,000 teachers who were graduates of junior college. The target of HRDSIP Phase 1 was for 4,000 of them to acquire graduate degrees. The number who actually did so by August 1995 was approximately 3,500, around 90% of the target.

Table 2-10 Changes in the Academic Qualifications of Teaching Staff (Compulsory School Levels)

(Units: People)

	Bachelors' degree	Bachelors' degree + diploma	Masters' degree	Doctorate	Total for bachelors' degree and above	Total number of teachers	Proportion with bachelors' degree and above
1991	8,761	1,069	155	1	9,986	31,980	31.2%
1997	14,284	878	246	4	15,412	33,799	45.6%

(Source) Prepared from the findings of questionnaires to the Ministry of Education.

In-service training for education teachers was planned to accompany the revision of the curricula, and the number receiving that kind of training exceeded the target of 12,000 teachers. The field survey for this project confirmed that a considerable number of teachers were receiving in-service training in the new curricula. Normally the training was conducted towards the end of the week (Thursday), but

according to the World Bank ICR, the content of the in-service teacher training program is still not enough and it still does not fulfill the aim of the reform, which was to give teachers teaching methods "to nurture analytical and problem-solving abilities". However, during the field survey many teachers responded that they had "familiarized themselves with teaching methods for the new curriculum and those methods were valuable". This point required further study to ascertain the real situation.

(4) Educational technology

In contrast to the Educational Facilities Improvement Program, this program provided new facilities for existing schools. It provided 101 libraries (out of a planned 147), 96 laboratories (of 143), 111 AV rooms (of 161) and 104 home economics and craft workshops (of 152).

(5) Education facilities improvement

Already described.

(6) Vocational training

Four vocational training centers were established, and a nationwide survey was conducted to gauge demand for vocational training. According to the World Bank ICR, the survey was inadequate, and the decision has been taken to continue it into Phase 2.

(7) Education research and development

Besides coordinating the implementation of the Ten-Year HRDSIP, the NCHRD was also established as a research and development agency. It has advanced information systems and strong investigative abilities, making it a center of knowledge not just in Jordan but more widely in the Middle East and North Africa. It is earning recognition as a project executing agency with superior performance.

Evaluation of the fruits of education reforms is another important role for the NCHRD, which conducts surveys of academic ability. In May 1993 it conducted examinations in mathematics, Arabic and physics of fourth-grade and eighth-grade students who had not received education using the curricula and textbooks for the new education system. In May 1995 it carried out the same examinations on equivalent students who had received four years of instruction based on the new curricula and textbooks. The results showed that in mathematics the scores rose by 12% in fourth grade and by 7% in eighth grade. In Arabic, the fourth-grade scores rose by 3.6%. However, Arabic scores in the eighth grade were unchanged, and in Physics scores from both the fourth-grade and eighth-grade students fell. The ultimate objective of the reform was to foster abilities of problem solving and critical thought in order to strengthen the human resource base. More time will be required before this can be evaluated fully, and the development of appropriate evaluation methods remains a pending task.

To sum up the achievements of HRDSIP Phase 1, some inadequate areas have been revealed, but the educational problems which were targeted at the time of the project’s formulation are improving.

However, now, at the end of HRDSIP Phase 1, it is too soon to judge the fruits of the Ten-Year HRDSIP. We must wait for further improvements in Phase 2.

3 Lessons Learned

Nothing in particular.

ANNEX：The World Bank's Evaluation

The following is the **extract** from "Preliminary Precis" of Performance Audit Report by the Operations Evaluation Department of the World Bank. The report reviews two projects, Human Resources Development Sector Investment Loan (HRDSIL I) and Seventh Education Project[16].

Partnership for Education in Jordan

With vision and an innovative spirit, Jordan launched a program of education reform in 1985, and continues to work toward the goal it embodies: to establish an educational system that will enable its graduates to match the highest international standards of educational achievement. A long-time partner with Jordan in advancing education, the World Bank has actively supported Jordan in this enterprise. In a study of the results achieved thus far, the Operations Evaluation Department (OED) found that the project has produced outstanding accomplishments, establishing a record deserving of the attention of other countries that aspire to achieve the same kinds of goals. But OED also noted impediments that will slow future progress if left unresolved.

Outcomes

As might be expected in an overall plan of such ambition and complexity, the results of the education initiative have been mixed.

Quality Improvement

Although enrollment statistics in Jordan are among the best in the Middle East, the quality of school management, teaching, and learning remain below the standard for a modern country, and have yet to meet the expectations of the Jordanian government and people. Improvements in teacher effectiveness and student achievement have been slow in coming, despite generous teacher training and textbook supply. Most teachers are not yet sufficiently motivated or equipped to deliver a higher level of instruction.

But this slow pace must be viewed in the context of what we know about the process of change in a education system: it takes at least a decade for teachers and students to adapt to change and become familiar with the new curriculum. Yet the government and the people are becoming concerned, and are anxious to see results. In the short term, more could be done to promote public understanding of the challenges and to disseminate information about the pace of progress that might reasonably be expected. In the long term, the effort must be sustained, especially at the local level, to ensure that all schools become effective. For lasting improvements to be achieved, the government must continue to display tenacity in addressing the systemic issues of school management and of teacher training, recruitment, pay incentives, and supervision.

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16 Loan amount: US $40 million (Loan Agreement: 1988). The main scope is the construction of schools.

Institutional Development

The projects supported the development of important institutional capacities, including supervision and in-service training at the Ministry of Education, that book publishing and distribution, and quality assurance and research and evaluation in the NCHRD. These agencies also gained from the experience of managing and implementing the projects.

The NCHRD, a unique body designed to assist the Intermediary, the newly established lead agency in human resource development, in monitoring project progress and evaluating impact, made particularly significant contributions. It also benefited through the provision of technical advisory services and computer technology that allowed it to develop its database for the Education Management Information System (EMIS) and to manage studies.

But in other areas, results were less encouraging. The numerous project-funded studies produced only modest effects on policy and operations. The planned impact evaluation study by NCHRD was slow to begin, but its ultimate findings will be extremely important in mapping out future policies and programs.

The most damaging institutional outcome was the failure to establish a modern management information system within the Ministry of Education. The absence of this system has severely compromised the ability of decisionmakers to formulate sound strategies, monitor progress, and to be accountable. The seriousness of this lapse could intensify as program efforts shift to the local level.

Next Steps

As education reform passes year 13 in Jordan, care must be taken to maintain the momentum that has carried the effort thus far. Specific steps that can be taken to promote the goals of reform include the following:

- *Local support*. The project must ensure that direct support is provided to schools, that it is tailored to local conditions, and that it is accompanied by strategies to enhance local participation, ownership, and accountability.

- *Communication.* Information sharing is urgently needed to maintain public support. This would include the design, implementation, and monitoring of a strategy to share accurate information with the public and invite parents to engage in partnership with the schools.

- *New construction*. The government should require rigorous field research, which may include donor participation, establishing new schools, expanding facilities, or upgrading.

- *Monitoring and evaluation*. As a beneficiary of donor assistance, NCHRD must increase its care and vigilance to ensure that its new activities do not compromise the credibility of its monitoring and evaluation functions.

- *Ministry of Education*. Establishing an efficient and reliable monitoring capacity, with full technological capacity, is the most important investment the ministry can make at this time to better serve the school system and its beneficiaries.

① Fatima-Al-Zahra School financed by JBIC (for 500 students)

② Class at Baq'a Secondary School: Students are from Balqa refugee camp

③ A home-economics room: Kitchen facilities are also financed by JBIC