



Working Paper

IRAQ
UNITED NATIONS / WORLD BANK
JOINT NEEDS ASSESSMENT

Education Sector

TASK MANAGER: JEFFREY WAITE, WORLD BANK
OTHER PARTICIPATING AGENCIES: UNICEF, UNDP, UNESCO,
UNOPS, ONHCR, UNEP, UNIFEM, WFP, UNOCHI

October 2003

1. INTRODUCTION

1. The education system in Iraq was widely regarded as one of the best in the Middle East region until the 1980s. Between the 1960s and the 1990s, Iraq made great progress in enrollment at all levels of education and achieved near universal primary enrollment by 1980. For the last decade of the twentieth century, the system deteriorated seriously as Iraq engaged in three major conflicts and experienced over a decade of international sanctions.

2. Restoring the Iraq education system to the level of the 1980s must be at the heart of the reconstruction effort. In returning to full enrollment, Iraq would be meeting its commitments in terms of human rights, and the targets set by the international community under the Education For All and Millennium Development Goals initiatives. In addition, by improving the quality of its education system, the country would be developing the human and social capital it needs for a productive economy and cohesive society in the context of a globalized exchange of information, services and goods.

3. Primary school enrollment fell to 93 percent in 2000,¹ while secondary school enrollment went from 47 percent to 38 percent.² More serious, however, was a large drop in attendance. A UNICEF Multiple Indicator Cluster Survey (MICS) reported in 2000 that as many as 23 percent of primary school age children were not attending school, with significantly higher rates among girls and in rural areas. This deterioration created or exacerbated inequities by gender, urban/rural location, and region. Other sub-sectors, especially technical and vocational education, also experienced stagnation or decline.

4. Quality also declined at all levels of the education system: teaching and learning conditions deteriorated; teacher quality eroded; curriculum content was distorted or became outdated; and policy and system development came to a standstill. This decline in quality was reflected in deteriorating internal efficiency, made worse by growing poverty. Indeed, poverty emerged as the major cause of non-attendance, as more of the direct costs of provision were transferred to households despite the official policy of free education.

Table 1: School Drop-Out and Repetition Rates in Iraq 1978 - 1998

Year	Repetition Rate (%)			Drop-Out Rate (%)	
	Primary	Intermediate	Preparatory	Primary	Intermediate
1978	7	27	21	1.4	2.3
1998	15	31	21	2.4	7.6

UNESCO (2003)

5. Behind these developments was a substantial collapse in public investment in the education system. In 1988/1989 the education budget was \$2.5 billion³ (about 6 percent of GDP) and expenditure per student was approximately \$620. Over the 1993-2002 period, the annual average expenditure per student stood at approximately \$47, funded largely from the Oil-for-Food (OFF) Program.

¹ Except where otherwise indicated, data cited in this report are drawn from UNESCO (2003) Situation Analysis of Education in Iraq 2003, UNESCO, Paris, April 2003, and UNICEF/World Bank (2003) Social Sector Watching Brief Iraq (Education), New York/Washington, 2003.

² Primary Education (Grades 1-6); Secondary Education (Grades 7-12), the latter divided into Intermediate Education (Grades 7-9) and Preparatory Education (Grades 10-12).

³ All amounts are in equivalent US Dollars.

2. CURRENT STATUS AND ISSUES

6. This assessment of the current status of the education sector is divided into two sections corresponding to the present areas of responsibility of the two education ministries. This framework enables alignment with the budgeting process currently under way.

A. MINISTRY OF EDUCATION (MOE)

Primary and Secondary Schooling

7. **Access.** The most recent data available showed a marginal increase in the Primary Education net enrollment rate (NER) from the 93 percent registered in 2000. Attendance was not thought to have improved from the 73 percent (49 percent for girls in rural areas) reported in the 2000 MICS survey. In 2000, the major obstacle to attendance was household poverty; insecurity is now an additional factor.

8. Accurate and reliable data on current enrolment rates at secondary level were not accessible. By 1998/1999, the last year for which enrollment rate data were available, the Intermediate Education NER declined to around 40 percent, while the Preparatory Education NER climbed from a very low base to 17 percent.

9. The private education sector in 2003 consisted of a few closely supervised private institutions offering language and vocational programs, having dwindled from a small, but vibrant, private education sector in the 1970s.

10. **Equity.** Average enrollment rates concealed very substantial regional, rural/urban, and gender disparities. Regional Primary Education NERs ranged from 98 percent in Baghdad and Diala to around 63 percent in Muthanna in 1998/1999. These NERs largely mirrored urban/rural disparities, with 98 percent in urban areas and around 61 percent in rural areas.

11. The female share of Primary Education enrollment remained fairly constant at around 44 percent throughout the period 1990-2000. The 2000 MICS survey however identified significant gender gaps in Primary Education attendance, especially in rural areas where up to 51 percent of girls (compared with 28 percent of boys) were reported to be out of school. In Secondary Education, gender gaps became more marked, as indicated in Table 2 below.

Table 2: Decline in Secondary Education Enrollment, 1990/1991 & 1999/2000, Ages 12-17

	Gross Enrollment, 1990/1991			Gross Enrollment, 1999/2000			NER, 1999/2000	
	Male	Female	Total	Male	Female	Total	Male	Female
Iraq	57.1	36.4	47	47.1	29.1	38.3	39.6	26
Jordan	43.7	45.6	44.6	86.4	89	87.7	73.4	78.5

UNESCO (2003)

12. **Quality.** Despite the absence of reliable data on learning achievement, teaching and learning conditions clearly declined since 1990: fewer textbooks and learning materials; less teacher training; and less curriculum development. Moreover, learning hours for each pupil were reduced by approximately 25 percent in the many schools that used double and triple shifts.

13. Curricula were highly centralized and teaching heavily textbook-driven, embodying a content-centered teaching and learning approach that relied heavily on memorization and testing of recall. The curriculum used in 2003 remained essentially unchanged over the past two decades, except for revisions undertaken by the education authorities in three Governorates in the north. Under supervision of the CPA, UNICEF and UNESCO are currently printing new supplies of existing textbooks purged of passages and references considered inappropriate by local review committees.

14. Textbooks were in very short supply during the sanctions, particularly in the Governorates of the south and central regions. As a result, recycling of textbooks (initially designed for single use) was introduced in most schools. This was compounded by severe shortages of basic teaching materials, supplies and equipment (e.g. chalk, chalkboards, and laboratory equipment), which the OFF Program was not able to provide in sufficient quantities. The other major factor responsible for deterioration in learning, a decline in teacher quality, is analyzed in more detail in the sub-section on “Human Resources” (paras.23-32).

15. **Efficiency.** Repetition rates in 1998 were 15 percent for Primary Education, 31 percent for Intermediate Education, around 21 percent for Preparatory Education. At all levels, repetition rates were higher for boys than for girls. UNESCO data suggested low levels of internal efficiency, with male students in Intermediate schools taking on average 6.9 years to complete the three-year phase, and females 6.2 years for the 1995 cohort, compared to 6.5 years and 4.9 years respectively for the 1976 cohort.

16. **Vulnerable Groups.** Reliable data on the most vulnerable populations proved extremely difficult to obtain. Gender, urban/rural, and regional disparities noted above grew steadily over the 1990s, and a growing gap emerged in these indicators between Governorates in the south and central regions, and those in three Governorates in the north.

17. Adult and youth illiteracy was substantially reduced by a comprehensive literacy campaign in the 1970s and 1980s, so that illiteracy in the 15-45 year-old age group declined from 48 percent in 1978 to 20 percent in 1987. However, most adult education activities and non-formal education programs stopped in 1991, resulting in a rise in illiteracy among youth and adults. One estimate suggested that fewer than 30 percent of females and 60 percent of 15-25 year-old males were literate in 2000. The gender distortion described above is exacerbated in rural areas and in the more neglected Governorates. As part of the literacy campaign, “Yafa’een” schools offering accelerated learning programs for 10-15 year-olds who had not had access to normal primary enrollment were established throughout Iraq, but the numbers of these institutions dwindled during the 1990s from over 112 to only four by 2003.

18. Despite a 1987 initiative to introduce programs for children with special learning needs in special classes in Primary schools, these children are mostly enrolled without remedial assistance in mainstream classes, or assigned to special schools for children with physical, mental, hearing, visual, and speech disabilities.

School Infrastructure

19. The legacy of war, sanctions, and official neglect left a massive backlog in terms of school infrastructure. While there was some damage resulting from bombing during the 2003 conflict, and further damage from subsequent looting, the major cause of the deterioration in the quality and quantity of physical plant and infrastructure for the sector as a whole was the almost total cessation

of both new construction and maintenance of existing facilities after 1991. Limitations on OFF Program support after April 1995 made it difficult to meet infrastructure needs, particularly in the Governorates of the south and central regions. While full data were not available at the time of this assessment mission, the data below for five Governorates (including four Directorates in Baghdad)⁴ covering approximately half the schools in the south and central regions indicated the extent of additional damage that can be attributed to the 2003 war and its aftermath.

Table 3: Damage to School Buildings from April 2003

Schools	Bombed		Burned		Looted	
<i>Anbar</i>	0	0%	0	0%	66	6%
<i>Baghdad</i>	60	2%	1	0%	410	16%
<i>Ninevah</i>	1	0%	0	0%	233	15%
<i>Salaheldin</i>	11	1%	1	0%	70	6%
<i>Tamim</i>	7	1%	0	0%	123	15%

UNICEF War Damage Survey 2003 (initial findings)

20. **Repair and Rehabilitation.** Estimates of repair and rehabilitation needs ranged from 70 percent to 80 percent of all MOE schools and institutes. The MOE and UNICEF estimated that at least 80 percent of the 13,200 institutions need rehabilitation and repair. The CPA has undertaken to repair or rebuild all battle-damaged education facilities. Some repair and rehabilitation work has begun, with estimates that approximately 1,500 schools will be rehabilitated by end-2003 by a range of agencies. The term “repair and rehabilitation” covers both minor repairs (e.g. repainting, window and door lock replacement) and major renovation (e.g. roofing repair, floors, windows, doors, and physical education and toilet facilities). As a result there is some discrepancy between average cost estimates per school, from around \$38,000 to \$50,000. This issue is addressed in more detail in Section 3 “Needs and Priorities for the Sector.”

21. **Additional Classrooms and Facilities.** The lack of new capital investments since 1991 resulted in congestion in schools and institutes, which in turn led to the use of double, and even some triple, shifts. Multiple shifts also increased in recent years as a consequence of the separation of girls from boys in some regions. Congestion was acute across the country, even in three Governorates in the north (despite the greater resource allocation they received from the OFF Program). Overall estimates by UNICEF, endorsed by MOE officials, suggested that more than a third of all school buildings accommodate double shifts, and some 2 percent accommodate triple shifts, with higher rates in the governorates of the north. The problem affects both Primary and Secondary Education, as shown in Table 4.

Table 4: Double- and Triple-Shift Schools in Two Governorates

	Schools	Single Shift		Double Shift		Triple Shift	
Primary							
Erbil	967	705	73%	239	25%	23	2%
Dohuk	652	306	47%	329	50%	17	3%
Secondary							
Erbil	192	116	60%	75	39%	1	
Dohuk	131	92	70%	39	30%		

UNESCO Rapid Needs Assessment 2003

⁴ Provision of Primary and Secondary Education in Iraq is managed by 21 Education Directorates, each under the authority of a Director-General. There are four Directorates in Baghdad Governorate, and one in each of the other 17 Governorates.

22. The latest information showed an overall (Primary and Secondary) student-classroom ratio of 49:1. MOE officials estimated that some 20 percent of schools needed additional classrooms and other facilities in order to relieve congestion. In addition, the MOE reported that more than 700 school and institute buildings were currently unusable and needed to be demolished and rebuilt. The enrollment simulation and projection model used for this assessment suggested that a minimum of 4,500 new schools, in addition to the 700 replacement schools, was required to cope with enrollment growth and to eliminate double and triple shifts.

Human Resources

23. Perhaps the most significant variable determining the quality of learning achievement was the quality of human resources, particularly teachers and school leaders. The MOE estimated the number of teachers in schools and institutes at 235,000 for nearly six million students. Female teachers accounted for 73 percent of the teaching force in Primary Education (87 percent in Baghdad), and 61 percent in Secondary Education. Limited data on age distribution (available for one Governorate in the north and two Governorates in the south and central regions) pointed to a low proportion of teachers at or near retirement age.

24. **Teacher Supply.** The average student-teacher ratio was 22:1 in Primary Education and 17:1 in Secondary Education. Currently, while there was no significant shortage of teachers in the aggregate, there were problems with regard to distribution and coverage of key subject areas. The 1990s saw a substantial decline in teacher quality, assessed in terms of teacher qualifications and experience. The significantly increased teacher salary currently being paid by the CPA will likely attract qualified and experienced teachers back into the system, which may put pressure on the authorities to rationalize the education labor force. Reducing the number of double and triple sessions would for example improve teacher utilization by eliminating the shortened teaching days that are employed in multiple session schools.

25. **Teacher Distribution.** The global student-teacher ratio concealed important discrepancies. The Ministry of Planning data for the south and central regions summarized in Tables C1 and C2 in Annex C provided an illustration of the problem. Disparities in student-teacher ratio in the Governorates of the south and central regions ranged in Primary Education from 14:1 in Wasit to 37:1 in Nineveh, and in Secondary Education from 11:1 in Babylon to 23:1 in Muthanna. A single Governorate could have both a shortage of teachers in some Primary schools and an excess in another. This suggested a need for school mapping to improve the distribution and utilization of teachers. In Secondary Education, teacher shortages existed in specific subjects.

26. **Salaries.** An important factor affecting teacher supply and quality was the salary of teachers. Before May 2003, teachers' basic salaries ranged from \$3 to \$5 per month. In addition teachers received a wide range of supplementary allowances that could be triple the amount paid in basic salaries. This high, non-salary component in remuneration resulted in very significant inequities between staff doing similar jobs, and was identified by officials and teachers alike as a source of considerable dissatisfaction. Before May 2003, most teachers had a second job in order to supplement their income. Another reported consequence of the low level of salary was extensive private tutoring and incidents of bribery and charging of illegal fees for examination results, promotions, etc.

27. As of May 2003, the CPA introduced an interim Public Service Scale that paid teachers and other employees on the basis of length of service. Teachers' salaries then ranged from \$60 to \$180,

and averaged around \$120 per month, with no supplementary allowances. A more elaborate salary scale is currently being implemented.

28. **Teacher Qualifications.** Both UNESCO and UNICEF documents mentioned a serious decline in the level of teacher qualifications. Existing data were partial and inconclusive, pointing to the need for data collection and analytic work in this area.

29. **Pre-Service Teacher Education.** Primary Education teachers were trained either in Teacher Training Institutes (five years of study after Intermediate Education) or in central Teacher Institutes (previously two years of study after Preparatory Education, but shortened in recent years to 6-12 months). Secondary school teachers were trained in Colleges of Education, found in almost all universities. Data available from one Governorate showed that Secondary Education teachers mostly possessed a Bachelor of Education degree.

30. No global shortage of teachers having been identified, the existing capacity of the Institutes and of the Colleges should be sufficient. However, there was strong evidence that the deterioration of infrastructure due to lack of maintenance, and the extent of damage from looting may be somewhat higher for the teacher education facilities, and therefore, additional resources will be required to restore these facilities to operational condition.

31. **In-Service Teacher Education.** The Institute of Educational Training and Development organizes in-service training programs for teachers, educational administrators, and other education staff, although the effectiveness of training has not been evaluated. In the 1990s the Institute continued its work particularly in teaching methods, distant education, and computer literacy, but it was generally agreed that training quality was poor. The Institute building in Baghdad was temporarily occupied by the Ministry of Education whose own building had been looted and burned in April 2003. The MOE will move to temporary premises in October, and the Institute facility will require considerable repair, rehabilitation and new equipment to be fully functional thereafter. There were no estimates of the extent or cost for this.

32. Limited in-service training of teachers was provided by UNICEF in the Governorates of the south and central regions, and a fairly wide range of in-service training was provided by UNICEF, UNESCO, and a number of NGOs in three Governorates of the north, working in close collaboration with the local education authorities.

Policy and Institutional Frameworks

33. **Policy.** The education system was administered by the terms of the legislation and regulations in effect prior to the 2003 conflict, amended from time to time by proclamations and guidelines issued by the CPA, MOE or MOHE. Senior education managers expressed the view that there was an urgent need for a comprehensive review of legislation and regulations to eliminate problematic provisions that reflect priorities and strategies of the previous regime. The managers agreed that this review should begin as soon as the Ministry was under the leadership of a new minister, but that the present mechanism of issuing proclamations and instructions would suffice until this process is under way.

34. **System Management.** Management of the education system in Iraq was centralized and decisions were often politically influenced. Policy and strategy were determined centrally and implemented by education authorities in each Governorate. Most informants acknowledged the need

for a review and comprehensive reform of the education management system to bring it into line with trends in modern education systems.

35. **Management Infrastructure.** The aftermath of the 2003 war resulted in the almost complete destruction of the MOE building in Baghdad and damage to Governorate/Directorate offices, ranging from almost total destruction of assets in some Governorates to minor looting of other Directorate offices. Losses in both the MOE and the MOHE included: communication, copying/printing equipment, computers, furniture, office supplies and vehicles. In some cases, computers (and the critical information they held) were saved by officials who removed them to their homes; in other cases, there was a substantial loss of records. The recently established Education Management Information System (EMIS) in the MOE was reported as completely destroyed, but the databases were being reconstructed from rescued materials or hard copies by UNICEF in collaboration with MOE and other partners, and will be incorporated into the new consolidated database currently under development.

36. **Administrative Staff.** Accurate statistics were not available, but a meeting of senior managers and CPA officials estimated that there were currently between 8,000 and 10,000 officials involved in system administration outside schools. All agreed that this number was well above what would be required to efficiently operate a system of this size, and that rationalization of the education management cadre should be a priority of the new ministry. Recognizing that this rationalization process would take some time, the Needs Assessment team concluded that in the short term any savings from rationalization would be absorbed by the costs incurred, and no specific budgetary provision was made for this in this estimate of needs for 2004.

37. While there was a loss of senior personnel resulting from the de-Baathification policy, there appeared to be sufficient depth in the existing establishment to replace the senior officials. There may also be a number of Iraqi returnees with substantial experience in education management outside of Iraq to help fill senior and middle-level management vacancies. Rationalization of the education management cadre would be facilitated by the introduction of a viable public service pension, as a substantial proportion of senior managers were near or above retirement age.

Technical and Vocational Education (TVE)

38. From the 1970s, Iraq established a small, but active network of TVE schools offering educational programs in technical, commercial, agricultural, and domestic fields. Home Arts is a relatively new area introduced in the 1997/1998 academic year. From these areas students could pursue specialization from over 20 courses, most of which are in technical/industrial fields.

39. **Enrollment Trends.** TVE underwent a sharp decline of nearly 56 percent from 1989/1990 when 147,942 students were enrolled in 278 schools to 65,750 students in 263 schools in 2000/2001. Women made up less than 20 percent of student enrollment, with significant gender disparities across subject fields. Enrollment continued to decline in the Governorates in south and central regions; in the north, trends were reversed, with an increase of 24 percent in 2001 compared to 1997. The decline in TVE enrollment was attributed to the negative effects of: sanctions that stymied economic activities and drastically reduced employment opportunities; run-down and outdated teaching equipment; loss of qualified staff (due to poor salaries); and programs that were not meeting market demands.

40. **Teacher Education.** TVE teacher trainees were recruited amongst Technical Institute graduates with a two-year technical diploma. These graduates trained for three years at a University of Technology (for technical/industrial teachers) or at the University of Baghdad (for agriculture and commercial teachers) to earn a degree in technical education. On average student/teacher ratios stood at about 9:1 in the south and central regions and 5:1 in the north, low by international standards, due perhaps to declining enrollment.

41. **Repair and Rehabilitation.** TVE schools in the south and central regions experienced extensive damage during the war, 80 percent of which was attributed to looting and arson. MOE estimated that over 80 percent of laboratory equipment was either looted or destroyed.

Other Sub-Sectors

42. **Early Childhood Education.** Early childhood education in Iraq was limited to one or two years of pre-school education provided in a small number of institutions largely in urban areas. Enrollment declined by 15 percent over the decade 1991-2002, with girls accounting for just under half the enrollment. In 2002 there were approximately 4,500 teachers employed in these schools, at an average ratio of 15 pupils per teacher. Quality of provision declined over the period as facilities and equipment deteriorated along with other schools, and teacher quality was compromised by collapse in teacher salaries and teacher training. The assessment team heard reports of limited experiments in more flexible community provision of early childhood education in the Governorates of the north, but was unable to obtain specific information.

43. Experience in other countries demonstrated the value of investment in quality early childhood education, and there were strong arguments for significant expansion of this sub-sector, but this assessment exercise was not in a position to quantify this.

44. **Non-formal and Adult Education.** The decline in literacy levels among youth over 15 years and adults described in Section 1 of this report reflected the almost total collapse of provision of non-formal education and literacy programs for youth and adults, including the accelerated learning second chance programs offered in the “Yafa’een” schools. UNICEF estimates that there may be as many as 800,000 semi-literate and illiterate 15-19 year-olds, as a result of drop-out and exclusion from primary education over the past decade. Non-formal education and literacy programs for youth and adults will be needed urgently.

B. Ministry of Higher Education and Scientific Research (MOHE)

45. **Institutions.** The Higher Education sector comprised 20 universities (including four in Baghdad), nine technical colleges, 39 technical institutes (including 12 in the north). In addition, the Commission for Computers and Informatics, the Commission for Medical Specializations, and the Academy of Sciences provided a forum for postgraduate studies and research outside the universities. Universities offered Bachelor degrees (minimum four years), Master degrees (minimum six years) and Doctorate degrees (minimum nine years). Technical colleges and institutes offered a more practical approach of teaching (60% practice and 40 % theory), and were under the supervision of the Commission for Technical Education in the south and central regional, and under the Foundations of Technical Education in the north. Technical Colleges offered Bachelor degrees after four years of study, and Master degrees and diplomas for postgraduate studies. Technical institutes offered two-year diploma courses.

46. Some 300,000 students were enrolled in Higher Education institutions in 2003, with nearly 73,000 in technical colleges and institutes. Women accounted for 34 percent of enrollments. Student enrollments increased one third over the last ten years; this increase included 25,000 students enrolled in the ten private colleges established since the late 1980s. The ratio of students per 100,000 inhabitants differed significantly between the south and central regions (1,400) and the north (670). Whereas this ratio in the south and central regions is near to that in other Arab countries like Syria (1,560) and Morocco (1,170), that in the north is not much higher than in Yemen (419).

47. **Human Resources.** MOHE personnel numbered 45,500 in 2003, including technical and support staff. Of these, approximately 14,500 were academic and teaching staff, of whom 34 percent were female. The student-faculty ratio varied significantly, not only between the south and central regions and the north, but also between colleges and departments. Salaries for academic staff were a crucial factor for ensuring continuity in Higher Education. Due to the de-Baathification process, about 1,500 of the academic staff were dismissed, most of whom were in senior positions (deans of colleges and above). This will likely impact the quantity and quality of teaching. Furthermore the current level of salaries was expected to exacerbate the exodus of academics, many of whom were well qualified and might pursue job opportunities elsewhere, especially in other Arab countries.

48. **Quality.** Higher education institutions suffered from a lack of access to up-to-date scientific literature, academic exchange and cooperation over the past 12 years. The demand for staff training programs inside and outside the country, the exchange of experts and students and joint research projects was high. Cooperation programs should integrate access to internet-based academic networks (including distance learning and research) and electronic scientific literature.

49. **Infrastructure.** In addition to more than a decade of under-investment, Higher Education institutions suffered greatly from war damage, looting and arson. According to initial estimates by UNESCO and CPA, 12 universities were very seriously damaged, and 34 technical colleges and institutes destroyed (12 by war damage and the others by looting and arson). Institutions in Basra lost nearly all of their buildings and equipment. The damage in the central region was unequally distributed, but included the total destruction of several colleges. The Higher Education institutions in the north were not affected by war, but needed upgrading in equipment and teaching and learning material. The damage was especially severe and expensive in laboratories, workshops and libraries. In August 2003, some buildings (colleges, dormitories, etc.) were still being used by coalition forces for military purposes.

50. **Administration, Management, and Financing.** Institutions were funded almost entirely from the State budget. No student fees were charged until 2000, when a \$12 fee was introduced in the south and central regions; transport and dormitories were subsidized. The administrative system of higher education was centralized, including finances and admission of students. Students applied to a central admission body, which controlled access to study places and dormitories all over the country (with the exception of an elite university). There was a strong demand for decentralization and increasing autonomy for Higher Education, which would require extensive management training for both administrative and teaching staff.

3. NEEDS AND PRIORITIES FOR THE SECTOR

51. The overview of the current status of the system in Section 2 provided a basis for assessing the most urgent needs and priorities for the sector. Given the data constraints, this assessment

focused on the “big ticket” items in Primary and Secondary Education, and emergency repair and rehabilitation in TVE and Higher Education. There were significant additional expenditure requirements that were not reflected in this Needs Assessment because the available information did not provide a credible basis for estimating needs, or because future policy direction was as yet unclear. This applies particularly to Higher Education.

A. STRATEGY

52. **Key Priorities.** If the education sector is to play a constructive role in the reconstruction of Iraq, it is essential in the first instance that the existing institutions continue to operate at a minimally acceptable quality level, and that a start be made on relieving the serious congestion in the system and on bringing out-of-school children back into the classroom. On the assumption that salary costs are provided for as an essential recurrent expenditure, the strategy proposed here prioritizes core operational needs ahead of investment needs. The first priority is to ensure minimal quality standards of teaching and learning and system management, through strengthening basic training and through the supply of materials and equipment without which expenditure on educator salaries would be largely wasted. The second priority, for the sector as a whole, is to address teaching and learning conditions through the progressive repair, rehabilitation, and expansion of physical infrastructure, particularly of learning spaces. The third priority is to start the process of educational reform and development of the new curriculum. This would include a participatory and consultative process for developing a national vision on broad educational policy.

53. **Sequencing.** Prioritizing operational expenditure ahead of investment implies that interim solutions will have to be found for likely shortfalls and delays in repair and rehabilitation of physical infrastructure. Many of the coping strategies already in place, such as multiple shifts, loan or hire of alternative community facilities for use as temporary learning spaces, may well need to be continued as an interim strategy. In repair and rehabilitation the most urgent priorities include ensuring safety and expanding capacity in the most congested areas (i.e. schools with triple shifts), and starting with the most critical facilities, such as toilet facilities and classrooms at Secondary schools. A similar approach should be applied in the MOHE institutions to ensure that learning conditions for the maximum number of students in 2004 were addressed. This strategy assumes improvement in the security situation, since insecurity constitutes a serious obstacle to educational access, especially for girls.

B. OPERATIONAL NEEDS

54. Needs for the largest and most costly part of the system, Primary and Secondary Education, were estimated on the basis of a simulation model that projected population and enrollment growth. Assumptions regarding growth rates, student teacher ratios, and internal efficiency are explained in Annex D. The enrollment and teacher numbers included students and staff in all MOE schools and institutes, including TVE schools and teacher institutes. These estimates were based on minimum basic needs. As recurrent costs continuing beyond the 2004-2007 period, this operational expenditure should be funded from the domestic budget.

55. **Non-Salary Operational Requirements.** The cumulative backlogs resulting from three wars and two decades of official neglect call for additional investment in selected goods (such as textbooks, materials and supplies) that would normally be met from the domestic budget. The costs of these operational requirements are indicated in Table 5. Further details of the basis for needs and

cost estimates are provided in Tables B5 – B10 in Annex B. The current policy of distributing textbooks to students free-of-charge was assumed to continue; in the longer run, a system of multiple use (over three years) could be put in place, but this would require a change in design and technology and higher unit cost, and a reorientation of teacher and student practices. MOHE operating expenditures (for teaching materials and supplies, etc), which typically make up around 50 percent of recurrent expenditure, proved difficult to assess. The Needs Assessment team used the CPA expenditure for the period July-December 2003, but recurrent costs are clearly influenced by the type of programs being offered, and could amount to significantly more than this, depending on the development direction the sub-sector takes. Total costs for all these items amounts to \$174 million in 2004, and \$610 million for 2005-2007.

56. In view of the cumulative maintenance backlog, operation and maintenance of rehabilitated, reconstructed and new facilities will require an incremental \$46 million in 2004, and a total of \$206 for the four year period.

C. MINISTRY OF EDUCATION (MOE) INVESTMENT NEEDS

57. **Rehabilitation and Reconstruction.** Repair and rehabilitation of 80 percent of existing facilities over four years was estimated at \$362 million for MOE (\$145 in 2004). The urgent provision of additional classrooms and toilets to reduce congestion (beginning with triple session schools) was estimated at \$158 million over four years, assuming that 20 percent of institutions require an additional average of four classrooms. The addition of physical education facilities, phased according to the priorities described above, added \$34 million. The urgent need to rebuild 700 existing schools no longer in use for safety reasons was estimated to cost approximately a further \$168 million, assuming an average cost of \$250,000 per school, lower for Primary schools and higher for secondary schools.

58. UNESCO estimated that the cost of rehabilitating and equipping about 190 damaged TVE schools and institutes would require \$111 million, and replenishment of teaching materials a further \$60 million (\$15 million in 2004). However, while there was a minimum of building rehabilitation that needed to be undertaken and equipment that needed to be replaced in the short-term, an assessment of the TVE system should be carried out before more extensive investment takes place. This assessment would make recommendations for a TVE system that is demand-driven, rather than supply-driven.

59. **New School Construction.** Returning to full enrollment and reducing congestion would require an estimated 4,500 new schools over four years, at a cost of an additional \$1.1 billion (assuming an average cost per school of \$250 000). These infrastructure requirements implied a significant capital investment that would need to be spread over a period of several years. Before beginning construction, planners would need to consider the cost-effectiveness of classroom dimensions: the standard Primary classroom was approximately 32 m², as compared to 50 m² in other countries. Due attention should also be given to environmental concerns in all construction activities.

60. **Other Investment Needs.** Provision was also made in the estimates for the provision of laboratory equipment in secondary schools, the cost of school furniture, and the costs of IT information systems, management development and EMIS, office equipment and vehicles. A more detailed breakdown of these items and their underlying assumptions is provided in Table 5 below.

D. MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH (MOHE) INVESTMENT NEEDS

61. **Repair and Rehabilitation.** A full assessment of the repair and rehabilitation requirements for the MOHE institutions was not possible, and the Needs Assessment team used as a basis for identification of the most urgent repair and rehabilitation needs the CPA/MOHE Universities Investment Plan (2003), which identified some \$110 million worth of “emergency rehabilitation and reconstruction needs”. Not more than \$11 million of this amount would be covered from the CPA budget for the balance of 2003, leaving some \$100 million for 2004. Given the absence of sufficient data and the need for a comprehensive review of the sub-sector needed ahead of massive reconstruction, the team did not calculate in detail the full rehabilitation and reconstruction needs of the higher education sub-sector. However, a very broad estimate of the scale of the problem was based on a survey conducted by the Commission for Technical Education (CTE) with CPA and UNESCO, which summarized the repair and rehabilitation needs for the technical institutes and colleges, and provided a basis for an initial estimate of the likely scale of needs.

62. The team did not develop a list of new construction requirements for TVE and Higher Education, since this could only be assessed on the basis of a comprehensive review of these sub-sectors.

E. REFORM OUTLOOK

63. **National Vision.** While the articulation of a national vision for education and major reform must await the establishment of a representative government, the 2004 program should include data collection and analytic work in a number of key areas:

- **Teacher Supply, Utilization and Development.** Assessment of current teaching force in terms of qualifications, experience and competence, present and future demand for teachers, and strategies for rationalization and redeployment; teacher development (pre-service and in-service), including review of present teacher education curricula and institutions;
- **Technical and Vocational Education.** Comprehensive review of vocational education sub-sector, alignment with labor market demands and reform, and restructuring of the institutions and their governance;
- **Higher Education.** Comprehensive review of higher education to align the sub-sector with the emerging development vision of the society, and to bring it into contact with the global community of higher education;
- **Education Governance and Management.** A review of existing education governance and management capacity and needs from MOE and MOHE to Governorates and institutions, rationalization of management cadre. This could involve a review of issues of centralization and decentralization, stakeholder participation in policy development and monitoring, parent/community participation in school governance, etc.

64. **Community Participation.** There were many instances where parents and communities mobilized energy and resources in support of their schools to address the dire circumstances resulting from sustained under-investment in education over more than a decade. In other cases, though, parents in poorer communities declined to participate in parent-teacher council activities, since it frequently incurred direct costs to them. International experience confirmed both the value of community participation, and the risk of exacerbation of inequities that could result from a rapid decline in public support for schools during times of crisis and instability. In the review of school

and system governance, attention should be paid to sustaining and maximizing the beneficial effects of increased community participation, while ensuring that it does not impose inequitable private cost burdens on poor households and communities.

65. **Curriculum Development.** Iraqi educators generally acknowledged the need for early initiatives to begin to move pedagogical practice from rote-learning towards more learner-centered methods, and for immediate work on the elimination of unacceptable content from syllabi, textbooks and learning materials. Interim curriculum modifications could also address gender bias and environmental education, as well as conflict-related issues, such as: peace education; human rights education; conflict management skills; psycho-social support for war-affected children and teachers; and emergency health and safety messages (e.g. mine awareness). Pending the introduction of a comprehensive curriculum review, there would also be value in capacity-building for curriculum development, exposing officials and key stakeholders to best practices and institutions in other countries. Review of curriculum and pedagogical practices should include assessment of experience and best practices in use of computers and IT in distance learning at every level of the system.

66. **Equity.** For the education system to make the best contribution to the reconstruction of Iraqi society, it must address some of the social inequities that have been created or exacerbated over the past decade and a half. Regional, ethnic and urban/rural inequities described in this study pose a serious threat to the reconstruction of a peaceful and prosperous Iraq. Relatively small, but persistent gender inequities in access to Primary Education become increasingly significant in Secondary and Higher Education, reflected not only in growing gender gaps, but also in skewed distribution across fields of study. Gender inequity frequently compounded regional and rural/urban inequities, and indicated the need for reforms that would address the obstacles to girls' education, and ensure a more equitable distribution of resources across and within Governorates. Any reform agenda should also address access to education for vulnerable groups, such as children from linguistic minorities, and children with disabilities.

F. IMPLEMENTATION CAPACITIES

67. On the positive side, the capacity existed for running the Education sector, since administrators and teachers were available in sufficient numbers, and rudimentary systems were in place. Implementation constraints could be expected however for investment, especially construction. While it was not in a position to quantify this, the assessment team identified an important limitation in the absorptive capacity of the Iraqi market. There was a limited number of experienced contractors, an acute shortage of skilled labor with limited mobility, and there would likely be a shortage of raw materials, especially in the construction industry. In the more specialized areas, State-Owned Enterprises (SOEs) that provided vital services to the education sector, such as: printing, chalk production, and furniture manufacturing, had deteriorated to the point that less than 10 percent of chalk production and 50 percent of printing needs could be met domestically. Many of these facilities suffered damage and looting in the conflict and its aftermath, and were not able to meet even previous production targets. Pending resolution of the policy regarding SOEs, steps should be taken to ensure supply of these key materials for education, using, as in the past, a policy of supplementing domestic capacity with imports in line with wider policies on state enterprises and imports.

G. EXPENDITURE AND BUDGET ESTIMATES (2004-2007)

68. As noted earlier, the 1988/1989 education budget was \$2.5 billion (about 6 percent of GDP) and expenditure per student was approximately \$620. Over the 1993-2002 period, the annual average expenditure per student stood at approximately \$47, funded largely from the OFFP. The CPA Budget for the second half of 2003 was set at \$9.7 million for MOE operating expenditures (excluding salaries); \$32.8 million for MOHE operating expenditures (excluding salaries); and \$4.0 million for MOHE capital expenditures. No provision was made for MOE capital expenditures. At the time of writing the CPA had not prepared a budget for 2004, but had recently issued guidelines to ministries.

69. On the basis of this Needs Assessment, the overall needs of the education sector over the next four years are estimated at \$4.8 billion in rehabilitation and investment costs, not including incremental operations and maintenance costs (see Table 5). Further details of the assumptions and basis for calculation are contained in Tables B1-B15 in Annex B.

Table 5: Estimates of Investment Education Expenditure (\$ million), 2003-2007

	2003	2004	2005	2006	2007	Total 2004-2007
Primary and Secondary Education Investment Expenditure						
Rehabilitation of School Buildings	60.0	145.0	145.0	72.4	0.0	362.4
Additional Classrooms/other facilities*	0.0	57.9	57.9	57.9	19.0	192.7
Demolishing and rebuilding new schools	0.0	96.0	72.0	0.0	0.0	168.0
New school construction	0.0	324.0	322.8	321.6	111.6	1080.0
Cost of lab equipment in secondary schools	0.0	55.0	54.0	53.0	18.5	180.5
Cost of school furniture	0.0	0.1	0.1	0.0	0.0	0.2
Cost of IT info sys, management development, EMIS, equipment**	0.0	1.8	1.5	1.5	0.4	5.2
TVE Materials	0.0	15.0	15.0	15.0	15.0	60.0
TVE Rehab and Equipment	0.0	34.0	33.0	32.0	12.0	111.0
Transportation: vehicles	0.0	1.5	1.5	1.5	0.4	4.9
Higher Education Investment Expenditure						
Technical Institutes Rehabilitation/Reconstruction	0.0	0.0	270.8	118.9	49.3	439.0
Emergency rehabilitation/reconstruction	10.0	100.0	0.0	0.0	0.0	100.0
Universities rehabilitation/reconstruction	0.0	0.0	439.0	439.0	439.0	1317.0
Total for Capital Investments	70.0	830.3	1412.6	1112.8	665.2	4020.9
Selected Goods						
Cost of textbooks	73.5	79.3	85.0	89.8	94.5	348.6
Cost of school material and supplies	20.8	22.1	23.5	24.6	25.6	95.8
Cost of MOHE teaching material and supplies	65.0	72.2	80.1	88.9	98.7	339.9
Total Investment and Selected Goods	229.3	1003.9	1601.2	1316.1	884.0	4805.2
Incremental O&M Costs	42.0	46.1	50.1	54.1	55.5	205.8
Grand Total of Investments	271.3	1050.0	1651.3	1370.2	939.5	5011.0

* includes the following:

Additional Classrooms and toilets	0.0	47.6	47.6	47.6	15.6
Additional Physical Education Facilities	0.0	10.3	10.3	10.3	3.4

** includes the followings:

MOE Management Development	0.0	0.1	0.1	0.1	0.0
MOE Information System	0.0	0.4	0.1	0.1	0.1
MOE Equipment	0.0	1.3	1.3	1.3	0.3

70. While clearly the determination of priorities is a matter that will be determined by the national authorities, Table 6 suggests a possible framework of priorities with their attendant costs. It is assumed that operating costs will be met entirely from national revenue, while investment costs will require the support of the international community until domestic revenue is adequate.

Table 6: Suggested Priorities of Education Expenditure (\$ million), 2004-2007

	2004	2005	2006	2007	TOTAL
Investment Requirements (Base Case)	577.2	468.2	338.3	249.4	1633.1
Priority 1: Textbooks, Materials and Supplies (MOE/MOHE)	188.6	203.6	218.3	233.8	844.3
Priority 2: Rehabilitation of School Buildings	145	145	72.4	0	362.4
Priority 3: Add Classrooms, Toilets, etc.	47.6	47.6	47.6	15.6	158.4
Priority 4: Emergency MOHE Rehabilitation/Reconstruction	100	0	0	0	100
Priority 5: Demolish and rebuild unusable school buildings	96	72	0	0	168
Additional Investment Required (High Case)	472.8	1183.1	1031.9	690.1	3377.9
Construction of New Schools	324	322.8	321.6	111.6	1080
Other Selected Goods	56.9	55.6	54.5	18.9	185.9
Additional Physical Education Facilities	10.3	10.3	10.3	3.4	34.3
TVE Rehab and Equipment	34	33	32	12	111
MOE Vehicles	1.5	1.5	1.5	0.4	4.9
Additional MOHE Rehabilitation/Reconstruction	0	709.8	557.9	488.3	1756
Incremental O&M (Schools)	46.1	50.1	54.1	55.5	205.8

4. CONCLUSION

71. A signatory to a number of international human rights instruments, Iraq has the potential to quickly return to its status as a leading country in the region and the international community. The restoration of learning and the reconstruction of its education system, in a way that builds on its rich history without duplicating the outdated or dysfunctional elements that have emerged over the past two decades, are necessary, but not sufficient conditions to ensure that future for Iraq. This Needs Assessment has identified some, but probably not all, of the most critical and urgent needs that such a transformation requires.

ANNEX 1: ASSESSMENT METHODOLOGY

The current assessment builds on recent surveys and reports prepared by UNESCO and UNICEF, and on a cost simulation model. The data collected and the first results of the simulation model were reviewed during a two-week mission to Iraq. The mission team met with stakeholders that included: the CPA education authorities responsible for the MOE and the MOHE; senior officials, including eight (Acting) Directors-General in the MOE; the Council of University Presidents; development agencies, NGOs; various Iraqi civil society groups based in Baghdad, teachers, parents, and community members. The team also visited schools and a university campus. Security and other constraints prevented travel outside Baghdad, but the team drew on the experience of its UNICEF and UNESCO members, since both organizations have a long history of involvement in education development work in Iraq. Two UNESCO members of the team were able to travel to the three predominantly Kurdish Governorates in the north during the mission.

The major constraint on the assessment was the limited availability of reliable data, and frequent inconsistencies between different data sources. The team was, however, able to assemble sufficient data for a general picture of the overall system. Significant gaps remain to be filled, particularly in the sub-sectors covering early childhood development, non-formal and adult education, education for children with special needs, technical and vocational education, and higher education. At the time of the mission several surveys of needs in education were being conducted by the Coalition forces, by the CPA, USAID and its contractors, by UNESCO, and by UNICEF among others. However, the data from these exercises was not available for incorporation in this report. It is clear that a more comprehensive statistical picture of needs will emerge over the coming months and allow for more systematic planning of reconstruction activities.

It is beyond the scope of this assessment to propose a specific reform program for education in Iraq. The team worked on the assumption, nevertheless, that rapid progress towards achievement of the Millennium Development Goals, and the expansion over the next four years of compulsory education from 6 to 9 years, were clear targets. Beyond this, the team took as its benchmark the restoration by 2007/2008 of the levels of access and delivery that prevailed in schools prior to the late 1980s. For other sub-sectors, particularly technical and vocational education and higher education, the team took as its starting point restoration of the levels of delivery prior to March 2003, so that the institutions involved could continue to function pending a more comprehensive review. The team also drew on experience in other countries in the region and elsewhere, with comparable levels of economic development, as well as international experience in post-conflict reconstruction.

ANNEX 2: DETAILS OF COST ESTIMATES

Table 2.1: Number of Schools and Buildings

	Center/South	North	Total
Schools (Primary, Secondary, Institutes)	13000	2900	15900
School Buildings	11200	2000	13200
% Schools to Buildings	116.1	145	120.5

Source: CPA and MOE.

Table 2.2: Cost of Rehabilitation of School Buildings

	2003	2004	2005	2006	2007	Total 2004-07
School Buildings	1500	3625	3625	1810	0	9060
Cost in \$ million	60.0	145.0	145.0	72.4	0.0	362.4

1. MOE estimates show that at least 80% of buildings need rehabilitation and repair (10560).
2. Bechtel, US army engineering team, UNICEF, and NGOs will fix 1,500 schools in 2003.
3. MOE assess that most of the building rehabilitation will be in the coming two years. Rehabilitation is assumed to cover 40% in 2004, 40% in 2005, and 20% in 2006.
4. MOE estimates of current rehabilitation and repair cost range between \$35,00-40,000 per school. Cost estimates are based on a unit cost of \$40,000 including facilities in Primary schools.

Table 2.3: Cost of Adding Classrooms and Other Facilities Needed

	2003	2004	2005	2006	2007	Total 2004-07
Buildings Needing Classrooms, Toilets, Physical Ed Facilities	0	794	793	792	261	2640
Cost of Classrooms \$ million	0	35.7	35.7	35.6	11.7	118.7
Cost of Toilets \$ million	0	11.9	11.9	11.9	3.9	39.6
Cost of Physical Ed Facilities \$ million	0	10.3	10.3	10.3	3.4	34.3
Total Cost \$ million	0	58	57.9	57.8	19.1	192.8

1. 15% to 20% of schools need 2 to 6 classrooms, toilets, physical ed facilities. Cost estimates are based on 20% (2,640 buildings).
2. MOE assesses that most of the additions will be in the coming three years. Additions are assumed to be implemented at 30% in each of 2004, 2005, 2006, and 10% in 2007.
3. MOE estimate cost of adding 4 classrooms is \$45,000 per school.
4. MOE estimate cost of a toilet is \$15,000 per such (MOE estimate \$25,000 and UNICEF estimate \$10,000).
5. MOE estimate of adding physical education facilities is \$13,000 per school for Secondary schools.

Table 2.4: Cost of Demolishing and Rebuilding Needed Schools

	2003	2004	2005	2006	2007	Total 2004-07
Buildings needing to be demolished and rebuilt	0	400	300	0	0	700
Cost of demolition and reconstruction \$ million	0.0	96.0	72.0	0.0	0.0	168.0

1. MOE estimate of schools need to be demolished and rebuilt is 700.
2. MOE estimate of current cost of demolishing and rebuilding schools is \$240,000 per school.

Table 2.5: Cost of Constructing New Schools

	2003	2004	2005	2006	2007	Total 2004-07
New Schools	0	1350	1345	1340	465	4500
Cost of New Schools \$ million	0.0	324.0	322.8	321.6	111.6	1080.0

1. MOE estimates 4,500 additional schools needed for demographic increase and easing double and triple shifts.
2. MOE assesses that most of the new schools will be constructed in the coming three years. Construction is assumed to be implemented at 30% in each of 2004, 2005, 2006, and 10% in 2007
3. MOE estimate of current cost of constructing new school is \$240,000 per school (HABITAT estimates for a 16-classroom school is \$500,000; and UNICEF estimate of a 12-classroom school is \$120,000)

Table 2.6: Cost of Maintenance of Schools

	2003	2004	2005	2006	2007	Total 2004-07
Existing & Rehabilitated Schools	14000	14000	14000	14000	14000	
New Schools	0	1350	1345	1340	465	
Total Schools	14000	15350	16695	18035	18500	
Cost of School Maintenance \$ million	42.0	46.1	50.1	54.1	55.5	205.8

1. Total schools need to be maintained by 2007 are 18,500 (14,000 existing schools plus 4,500 new schools).
2. MOE estimate of current cost of maintaining a school is 3,000 per school per year.

Total Cost of School Infrastructure in \$ million (Summary Table)

	2003	2004	2005	2006	2007	Total 2004-07
Rehab of School Buildings	60.0	145.0	145.0	72.4	0.0	362.4
Adding Classrooms, Toilets and Sports Facilities	0.0	58.0	57.9	57.8	19.1	192.8
Demolishing and Rebuilding Schools	0.0	96.0	72.0	0.0	0.0	168.0
Construction of New Schools	0.0	324.0	322.8	321.6	111.6	1080.0
Maintenance of Existing and New Schools	42.0	46.1	50.1	54.1	55.5	205.8
Total Cost of School Infrastructure	102.0	669.0	647.8	505.9	186.2	2008.9

Source: Tables above.

Table 2.7: Cost of Lab Equipment in Secondary Schools in \$ million

	2003	2004	2005	2006	2007	Total 2004-07
Secondary School Equipment	0.0	55.0	54.0	53.0	18.5	180.5

1. Total number of secondary schools in 2002/03 is 4,350 out of 14,000 total (UNESCO/MOE) i.e. 31%.
2. Total number of new schools needed is 4,500, assuming that 31% of them are Secondary, then the new secondary schools needed are 1,395.
3. MOE/UNESCO survey showed that at least 90% of existing schools need to replace and update their lab equipment i.e. 3,915 schools plus the new schools (1,395) brings the total number of schools that need lab equip to 5,310 schools.
4. The cost of lab equipment per schools is \$34,000 (MOE/CPA estimates) and the total cost is \$180.5 million.
5. It is assumed that lab equipment will be replaced/procured at 30% in each of 2004,2005,2006, and 10% in 2007.

Table 2.8: Number of Students and Teachers, 2003-2007

	2003	2004	2005	2006	2007
Primary Students (000)	4618	4841	5045	5233	5349
Secondary Students (incl VTE) (000)	1311	1486	1658	1795	1959
Total Students (000)	5929	6327	6703	7028	7308
STR Primary	21	22	23	24	25
STR Secondary	18	19	20	21	22
Primary Teachers (000)	220	220	219	218	214
Secondary Teachers (incl VTE) (000)	73	78	83	85	89
Total Teachers (000)	293	298	302	304	303
Number of Non-Teaching Staff (000)	74	79	83	87	91
Total Teaching and Non-Teaching Staff (000)	367	377	386	391	394

1. Student projections are based on improving efficiency and compulsory education (WB Education Simulation Model output)
2. Teacher numbers in 2003 are from MOE and projections are based on student projections and a gradually increasing STR ratio in primary and Secondary (STRs in Table B8).
3. Non-teaching staff number for 2003 from MOE/CPA and projections is based on the assumption that the ratio of non-teaching to teaching staff is constant.

Table 2.9: Cost of Student Furniture in \$ million

	2003	2004	2005	2006	2007	Total 2004-07
Number of Students ('000)	6340	6752	7142	7479	7773	
Number of Furniture Replaced		1399	1399	700		
Cost of Student Furniture in \$ million	0.00	0.06	0.06	0.03	0.00	0.15

1. Student projections are based on improving efficiency and compulsory education (WB Education Simulation Model output).
2. The cost of student furniture is \$40 for every two students (MOE estimates).
3. MOE and other donor agencies survey (CA) assessment that all student furniture needs to be replaced and could be replaced over two to three years. It was assumed that 90% of schools need to replace their furniture, and that 40% will be replaced in 2004; 40% in 2005; and 20% in 2007 (student bench and table is made for two students).
4. These figures are rounded up to one decimal place in the Summary Tables.

Table 2.10: Cost Estimates of Textbooks in \$ million

	2003	2004	2005	2006	2007	Total 2004-07
Primary Students (000)	4618	4841	5045	5233	5349	
Secondary Students (000)	1311	1486	1658	1795	1959	
Total Students (000)	5929	6327	6703	7028	7308	
Primary Textbooks (million)	45	47	49	51	52	
Secondary Textbooks (million)	19	22	24	26	28	
Total Textbooks (million)	64	68	73	77	80	
Cost of Primary Textbooks (\$ million)	45	47	48.9	50.8	51.9	
Cost of Secondary Textbooks (\$ million)	28.5	32.3	36.1	39	42.6	
Cost of Total Textbooks (\$ million)	73.5	79.3	85	89.8	94.5	348.6

1. Student projections are based on improving efficiency and compulsory education (WB Education Simulation Model output).
2. Source of textbook numbers and prices in 2003 is UNICEF.
3. The 2003 ratio of textbook is 9.7 per Primary student, 14.5 per Secondary student and 10.8 for both Primary and Secondary Students and they are assumed constant in the projection period to calculate the textbooks needs.
4. Textbook costs are based on a unit cost of US \$ 1 for Primary textbooks and \$1.50 for Secondary books and they are assumed constant in the projection period.
5. The current 'free' textbook policy is assumed to continue.

Table 2.11: Cost Estimates of Materials and supplies in \$ million

	2003	2004	2005	2006	2007	Total 2004-07
Total Students (000)	5929	6327	6703	7028	7308	
Materials and Supplies \$million	20.8	22.1	23.5	24.6	25.6	116.5

1. Materials and supplies include classroom kit, teacher kit, and student kit distributed by UNICEF.
2. Teacher kit is based on a STR of 20 and classroom kit based on 40 students per classroom.
3. Average cost of the three kits is \$3.25 per student (UNICEF estimates) and it was assumed constant over the projection period.

Table 2.12: Cost Estimates of System Development in \$ million

	2003	2004	2005	2006	2007	Total 2004-07
MOE Equipment		1.3	1.3	1.3	0.3	4.2
Vehicles		1.5	1.5	1.5	0.4	4.9
Management Development		0.1	0.1	0.1	0.0	0.3
EMIS		0.4	0.1	0.1	0.1	0.7
Total	0.0	3.2	3.0	3.0	0.8	10.0

1. MOE equipment is based on mission estimates and interviews with MOE staff. It is estimated for a General Directorate of Education (GDE) of a total of 21 (18 in Governorates and 4 in Baghdad).
2. It is estimated that the average need of the DGE is \$200,000 over the coming five years.
3. The equipment is assumed to be procured as follows: 30% in each of 2004, 2005, 2006, and 10% in 2007
4. Need for cars per GDE is 5 pickups @ \$20,000, 3 lorries @ \$35,000, one bus (30 seater) @ \$30,000.

	Pickups	Lorries	Buses	Total
Numbers	105	63	21	
Cost \$ million	2.1	2.2	0.6	4.9

5. The vehicles are assumed to be procured as follows: 30% in each of 2004, 2005, 2006 and 10% in 2007.
6. Management Develop is based on mission estimates and discussions with MOE/CPA advisors and UNICEF training cost. Staff needed to be trained is 2,500 (400 MOE and 2,100 Governorates) at a unit cost of \$100 per trainee (UNICEF average).
7. Source of EMIS estimate is MOE/CPA EMIS project proposal (Aug 2003).

Table 2.13: TVE Materials and Rehab and Equipment Estimates in \$ millions

	2003	2004	2005	2006	2007	Total 2004-07
TVE Materials		15.0	15.0	15.0	15.0	60.0
TVE Rehab and Equipment		34.0	33.0	32.0	12.0	111.0
Total		49.0	48.0	47.0	27.0	171.0

1. UNESCO estimates for TVE material, rehabilitation and equipment.

Table 2.14: Academic and non-Academic Staff in MOHE, 2003-07

	2003	2004	2005	2006	2007
MOHE Academic Staff	14500	14935	15383	15845	16320
MOHE Non-Academic Staff	30500	31415	32357	33328	34328

1. MOHE staff is projected to increase by 3% per year on the basis of past growth during 1990/1991-2001/2002 (Source: MOHE and UNESCO).

Table 2.15: Cost of Higher Education Investment Expenditure in \$ million

	2003	2004	2005	2006	2007	Total 2004-07
Emergency Rehabilitation/Reconstruction	10.0	100.0	0.0	0.0	0.0	100.0
Technical Institutes Rehabilitation/Reconstruction	0.0	0.0	270.8	118.9	49.3	439.0
Universities Rehabilitation/Reconstruction	0.0	0.0	439.0	439.0	439.0	1317.0
MOHE materials and supplies	10.0	100.0	709.8	557.9	488.3	1856.0
MOHE Non-Salary expenditure	65.0	72.2	80.1	88.9	98.7	339.9

1. Emergency needs obtained from the University Investment Plan (2003) prepared by MOHE/CPA.
2. Technical Institutes' costs based on institute-by-institute analysis from Commission for Technical Education.
3. Universities' costs based on pro-rata estimate of Technical Institutes' costs, with 73,000 students in TIs and 227,000 in universities.
4. In the absence of more reliable data, the lower unit cost of universities compares with TIs was estimated to be compensated for by the much greater level of damage sustained by the university sector.

ANNEX 3: TEACHERS, SCHOOLS AND STUDENTS BY GOVERNORATE IN CENTRAL AND SOUTH REGIONS

Table 3.1: Primary Teachers, Schools and Students by Governorate in Central/South Regions in 2000/2001

GOVERNORATES Central/South	Teachers		Schools	Students		Student/ Teacher Ratio
	Total	% Female	Total	Total	% Female	
Nineveh	10,082	61.8	1,017	376,567	42.7	37,3
Salah El Deen	8,011	65	629	162,297	43	20,3
Ta'meem	6,825	70	593	133,381	44.3	19,5
Diala	12,023	67.6	710	213,488	44.7	17,7
Baghdad	37,292	87	1,468	973,051	46.5	26,1
Anbar	10,179	66.3	653	204,034	42.6	20
Babylon	11,226	70.8	443	219,734	44.6	19,6
Kerbala	6,387	74.6	266	110,937	44.4	17,4
Najaf	6,070	72.1	330	136,503	44.8	22,5
Qadisiya	7,404	67.3	383	117,839	43.1	15,9
Muthanna	2,952	78.6	251	62,989	39.7	21,3
Thi Qar	12,848	62.2	656	193,710	41.5	15,1
Wasit	8,197	68.5	466	117,820	40.5	14,4
Maysan	5,876	65.5	336	89,803	40.3	15,3
Basrah	12,786	77.8	568	272,985	45	21,3
TOTAL	158,158	73	8749	3,385,138	44.2	21.4

MINISTRY OF PLANNING 2002

Table 3.2: Secondary Teachers, Schools and Students by Governorate in Central/South Regions in 2000/2001

Governorates Central/South	Teachers		Schools	Students		Student/ Teacher Ratio
	Total	% Female		Total	% Female	
Nineveh	4,082	53.3	251	85,555	34.5	21
Salah El Deen	2,345	48.8	210	43,543	275	18.6
Ta'meem	2,475	58.2	140	37,813	38	15.3
Diala	4,953	58.4	233	66,094	36.5	13.3
Baghdad	17,840	72.6	745	381,721	44.2	21.4
Anbar	3,425	43.2	238	52,523	28	15.3
Babylon	5,412	53.5	176	57,517	38	10.6
Kerbala	2,309	65.6	96	30,454	36	13.2
Najaf	2,634	62.1	123	40,418	37	15.3
Qadisiya	2,602	60.1	97	34,773	39.3	13.3
Muthanna	574	62	53	12,975	35.1	22.6
Thi Qar	3,750	47.4	208	63,427	34.7	16.9
Wasit	2,623	59.7	119	35,988	36.9	13.7
Maysan	1,376	58.3	76	25,213	35.8	18.3
Basrah	6,410	68	286	95,821	40.7	14.9
TOTAL	62,810	61.3	3051	1,063,835	38.8	16.9

Ministry of Planning 2002

ANNEX 4: THE EDUCATION SIMULATION MODEL

Enrollment projections by grade and gender were carried out for the Primary, Intermediate, and Preparatory education for the period of 2003 –2012 by using an education simulation model developed by the World Bank. For the purpose of the needs Assessment Study, projections for the coming five years (2003-2007) were used. The model runs were based on student population and Transition and Efficiency Rates obtained from the recent UNESCO and UNICEF studies and surveys. Detailed demographic data related to student population age groups were obtained from the recent World Bank population projections for Iraq.

The detailed projections of students by gender, grade, year, and cycle in the attached Tables were the basis on which the system's short-and medium-term needs of teachers, furniture, schools, classrooms, teaching materials, etc. was assessed and costed. These requirements were estimated in addition to the existing needs of infrastructure reconstruction and rehabilitation of school buildings, classrooms, libraries, laboratories, furniture, teaching materials, and aids, etc.

The model assumptions and results were revised during the mission after intensive discussions with the Ministry of Education officials, CPA advisors, UNESCO, UNICEF field staff, and other sector specialists. In the base run projections it was assumed, in addition to the demographic increase of about two percent per year, that there will be an additional enrollment increase of four percent during the projection period. This increase is expected to come from the returning dropouts and out-of-school children as the system reforms progress, and economic conditions improve. In the second scenario the projections were based on the assumption that there will be a gradual improvement in the repetition in Primary and Secondary Education where their rates will gradually drop to half of their current level by 2007. The second scenario was also based on the assumption that the country will pursue compulsory primary education and extended such policy to cover Intermediate Education (Grades seven to nine). The results of the later scenario were used in assessing the education sector needs in this study.

Enrollment Projections by Grade and Education Level 2002-2012 (Base Run)

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Prim1	Male	471632	485331	499877	514873	530319	546229	562616	574031	585517	597228	609173
	Female	365279	375007	386220	397806	409740	422032	434693	443514	452388	461436	470664
	Total	836911	860338	886097	912679	940059	968261	997309	1017545	1037905	1058663	1079837
Prim2	Male	493902	502603	516523	531867	547805	564237	581163	598598	611421	623756	636245
	Female	411360	392725	399634	411003	423258	435947	449024	462494	472402	481933	491582
	Total	905261	895328	916157	942870	971063	1000183	1030187	1061093	1083824	1105690	1127826
Prim3	Male	398508	467637	483329	497044	511732	527042	542846	559130	575904	588817	600851
	Female	324371	388580	380446	385342	395594	407240	419424	432001	444960	454937	464236
	Total	722880	856218	863775	882387	907326	934282	962270	991131	1020865	1043754	1065087
Prim4	Male	380714	395839	456868	479360	494392	509131	524355	540073	556272	572959	586438
	Female	303129	321185	378471	380150	384564	393939	405245	417297	429795	442686	453099
	Total	683843	717024	835339	859509	878955	903070	929601	957369	986067	1015645	1039538
Prim5	Male	399193	415791	432494	487324	519699	540270	557646	574627	591917	609685	627978
	Female	305796	328046	348595	401280	415844	423149	432757	444543	457492	471103	485205
	Total	704989	743837	781089	888604	935544	963419	990403	1019169	1049409	1080788	1113182
Prim6	Male	291472	310737	324228	337334	377860	404412	421347	435213	448548	462064	475938
	Female	216716	237511	255194	271404	310634	324259	330608	338033	347113	357163	367767
	Total	508188	548247	579422	608738	688494	728671	751955	773247	795662	819227	843705
Total Primary	Male	2435421	2577938	2713319	2847802	2981807	3091321	3189973	3281672	3369579	3454509	3536623
	Female	1926651	2043054	2148560	2246985	2339634	2406566	2471751	2537882	2604150	2669258	2732553
	Total	4362072	4620992	4861879	5094787	5321441	5497887	5661724	5819554	5973729	6123767	6269176
Inter1	Male	235142	275038	299062	314946	328588	362256	390251	409671	424731	438347	451751
	Female	155322	192048	214622	232174	247666	280032	296400	304272	311337	319489	328575
	Total	390465	467086	513684	547120	576254	642288	686651	713943	736068	757836	780327
Inter2	Male	250674	224761	246470	268496	284901	298388	325192	351222	371063	386367	399571
	Female	132263	140069	168729	190879	208075	222807	249557	266752	275844	282800	290154
	Total	382937	364830	415198	459375	492977	521195	574749	617973	646907	669166	689724
Inter3	Male	191377	227737	218792	231879	250921	267519	281410	304053	328421	348844	365020
	Female	105829	123273	133236	156836	178891	196910	212136	235585	253937	265069	272888
	Total	297206	351010	352028	388715	429812	464429	493546	539638	582358	613913	637908
Total Interim	Male	677193	727536	764324	815321	864410	928163	996853	1064946	1124215	1173558	1216342
	Female	393414	455390	516587	579889	634632	699749	758093	806609	841118	867358	891617
	Total	1070607	1182926	1280911	1395210	1499042	1627912	1754946	1871555	1965333	2040916	2107959
Preps1	Male	41269	42367	43612	44917	46266	47657	49091	50567	52087	53654	55267
	Female	31665	32472	33427	34428	35461	36525	37621	38750	39913	41111	42344
	Total	72934	74839	77039	79345	81727	84182	86712	89317	92000	94765	97612
Preps2	Male	36228	37261	38263	39374	40548	41764	43020	44313	45646	47019	48433
	Female	29240	29523	30228	31102	32030	32990	33980	35000	36050	37132	38246
	Total	65468	66784	68492	70476	72577	74755	77000	79313	81696	84150	86679
preps3	Male	46170	50185	52750	54679	56433	58167	59930	61737	63596	65509	67480
	Female	34367	39237	41477	43002	44378	45741	47125	48544	50003	51504	53050
	Total	80536	89422	94227	97681	100811	103908	107055	110282	113599	117014	120530
Prepl1	Male	33766	34665	35683	36751	37855	38993	40166	41373	42617	43899	45219
	Female	25908	26568	27349	28168	29013	29883	30779	31703	32654	33633	34642
	Total	59675	61233	63033	64919	66868	68876	70945	73076	75271	77532	79861
Prepl2	Male	28618	29199	29959	30829	31749	32702	33685	34698	35741	36816	37923
	Female	23019	23144	23706	24396	25125	25878	26654	27454	28278	29126	30000
	Total	51637	52344	53664	55225	56874	58580	60339	62152	64018	65941	67922
Pepl3	Male	34137	35370	36245	37174	38218	39340	40513	41728	42982	44274	45605
	Female	23543	27539	28772	29628	30496	31403	32342	33311	34310	35339	36400
	Total	57680	62909	65017	66803	68714	70742	72855	75039	77292	79614	82005
Total Prepar	Male	220188	229047	236512	243724	251069	258623	266405	274416	282669	291171	299927
	Female	167742	178483	184959	190724	196503	202420	208501	214762	221208	227845	234682
	Total	387930	407530	421471	434448	447572	461043	474906	489178	503877	519016	534609
All	Male	3332802	3534521	3714155	3906847	4097286	4278107	4453231	4621034	4776463	4919238	5052892

Levels	Female	2487807	2676927	2850106	3017598	3170769	3308735	3438345	3559253	3666476	3764461	3858852
	Total	5820609	6211448	6564261	6924445	7268055	7586842	7891576	8180287	8442939	8683699	8911744

Sources and Assumptions:

1. Projections are carried out by using the World Bank Education Simulation Model.
2. Promotion, repetition, and dropout rates by grade for 1999/2000 are used and assumed constant for the projection period. these rates were taken from UNESCO, Sitation Analysis of Education in Iraq, April 2003
3. Transition rates from Primary to Secondary for 1999/2000 are used and assumed constant over the projection period.
4. Intake into Grade 1 was based on the assumption that more out-of- school children and dropouts will gradually enter Primary school with 4% up to 2007, and then follow the demographic growth rate of 2%. The WB population projection for school age children are used.
5. Base year statistics obtained by mission from UNESCO and UNICEF recent documents and surveys.

Enrollment Projections by Grade and Education Level 2002-2012 (Repetition Improvement and Compulsory Intermediate)

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Prim1	Male	471632	484152	497421	511069	525094	539508	554322	565468	576778	588314	600081
	Female	365279	374094	384322	394866	405703	416840	428285	436897	445636	454549	463639
	Total	836911	858246	881743	905935	930798	956348	982606	1002365	1022414	1042862	1063720
Prim2	Male	493902	498843	507408	516973	526873	537034	547452	562224	573755	585248	596954
	Female	411360	389525	392471	399468	407080	414928	422978	434390	443300	452181	461225
	Total	905261	888368	899879	916441	933954	951962	970430	996615	1017056	1037429	1058179
Prim3	Male	398508	468591	480852	489796	499290	509136	519249	529337	543384	554720	565859
	Female	324371	389450	377832	379380	385877	393384	401188	408981	419834	428593	437200
	Total	722880	858042	858684	869175	885166	902520	920436	938317	963218	983314	1003059
Prim4	Male	380714	395065	457058	474569	483375	491656	500188	510030	519949	533476	544806
	Female	303129	320640	378902	375118	375160	380116	386488	394067	401728	412179	420933
	Total	683843	715705	835959	849687	858535	871771	886676	904098	921676	945655	965740
Prim5	Male	399193	412233	423663	475934	496943	503883	507934	516162	526098	536316	549835
	Female	305796	325464	341952	392813	395573	392518	393069	398905	406494	414375	424819
	Total	704989	737698	765615	868747	892516	896401	901003	915067	932592	950691	974654
Prim6	Male	291472	317110	335125	351624	401087	428281	442912	446921	454034	462714	471695
	Female	216716	242437	264058	283421	330676	341450	345336	345957	350913	357524	364448
	Total	508188	559547	599183	635045	731763	769731	788248	792878	804947	820238	836143
Total	Male	2435421	2575994	2701527	2819965	2932662	3009498	3072057	3130142	3193998	3260788	3329230
Primary	Female	1926651	2041610	2139537	2225066	2300069	2339236	2377344	2419197	2467905	2519401	2572264
	Total	4362072	4617604	4841064	5045031	5232731	5348734	5449401	5549339	5661903	5780189	5901494
Inter1	Male	268396	323315	354290	372087	385372	428300	453981	470815	476603	483984	493029
	Female	180697	227960	257519	279630	298056	341665	353421	358190	359228	363985	370651
	Total	449093	551276	611809	651717	683428	769965	807401	829006	835831	847969	863680
Inter2	Male	250674	248394	288932	321268	341631	356126	393941	419537	436413	443184	450049
	Female	132263	159613	201181	231465	253955	272305	311159	324667	329932	331299	335401
	Total	382937	408006	490114	552733	595586	628430	705101	744203	766345	774483	785450
Inter3	Male	191377	228603	235826	268464	300336	322272	337480	370844	396425	413758	421631
	Female	105829	123251	147818	185038	215549	238208	255959	290533	305961	312209	314099
	Total	297206	351854	383644	453501	515885	560480	593439	661377	702386	725967	735731
Total	Male	710447	800312	879048	961819	1027339	1106698	1185402	1261196	1309441	1340926	1364709
Interm	Female	418789	510824	606518	696133	767560	852178	920539	973390	995121	1007493	1020151
	Total	1129236	1311136	1485566	1657952	1794899	1958876	2105941	2234586	2304562	2348419	2384860
Preps1	Male	41883	43042	44241	45491	46796	48158	49579	51929	54485	57177	60004
	Female	32271	33461	34800	36210	37683	39221	40828	42948	45207	47587	50093
	Total	74154	76503	79041	81701	84479	87379	90407	94877	99693	104765	110097
Preps2	Male	36228	38051	39519	40980	42492	44066	45704	47077	49253	51667	54219
	Female	29240	30137	31344	32714	34166	35688	37280	38813	40808	42953	45214
	Total	65468	68189	70863	73694	76658	79753	82984	85890	90061	94620	99433
preps3	Male	46170	48992	50379	50843	50982	51088	51269	52815	54402	56737	59449
	Female	34367	38306	39508	39888	40127	40404	40759	42280	43987	46153	48549
	Total	80536	87298	89887	90731	91109	91491	92027	95095	98389	102890	107997
Prepl1	Male	34369	35447	36570	37745	38974	40259	41602	43735	46056	48509	51093
	Female	26500	27594	28820	30114	31473	32897	34390	36328	38400	40592	42908
	Total	60870	63041	65390	67860	70447	73156	75992	80063	84456	89101	94002
Prepl2	Male	28618	30033	31392	32799	34270	35809	37419	38689	40640	42792	45070
	Female	23019	23814	24967	26269	27652	29110	30645	32042	33838	35767	37808
	Total	51637	53846	56359	59068	61922	64919	68065	70731	74478	78559	82878
Pepl3	Male	34137	34783	35636	36475	37336	38244	39206	40859	42292	44334	46652
	Female	23543	27105	28233	29023	29848	30730	31665	33240	34774	36676	38756
	Total	57680	61888	63869	65498	67184	68974	70871	74099	77066	81010	85408
Total	Male	221405	230348	237737	244333	250850	257624	264779	275104	287128	301216	316487
Prepar	Female	168940	180417	187672	194218	200949	208050	215567	225651	237014	249728	263328
	Total	390345	410765	425409	438551	451799	465674	480346	500755	524142	550944	579815
All	Male	3367273	3606654	3818312	4026117	4210851	4373820	4522238	4666442	4790567	4902930	5010426

Levels	Female	2514380	2732851	2933727	3115417	3268578	3399464	3513450	3618238	3700040	3776622	3855743
	Total	5881653	6339505	6752039	7141534	7479429	7773284	8035688	8284680	8490607	8679552	8866169

Sources and Assumptions:

1. Projections are carried out by using the World Bank Education Simulation Model.
2. Prom, repetition, and dropout rates by grade for 1999/2000 are used and Repetition Rates are assumed to improve and reach half of their current level by 2007, and continue at that level for the rest of the projection period. These rates were taken from UNESCO, Situation Analysis of Education in Iraq, April 2003.
3. To simulate compulsory Intermediate it was assumed that all Grade 6 graduates will continue to Grade 7 for both boys and girls.
4. Intake in to Grade 1 was based on the assumption that more out-of-school children and dropouts will gradually enter Primary school with 4% up to 2007, and then follow the demographic growth rate of 2%. The WB population projections for school age children are used.
5. Base year statistics obtained by mission from UNESCO and UNICEF recent documents and surveys.