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# Kingdom of Morocco Education and Training Sector Survey

(In Six Volumes)

## Volume II: Investment in Education and Training

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Education and Manpower Development Division  
Europe, Middle East and North Africa Region

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## KINGDOM OF MOROCCO

### EDUCATION AND TRAINING SECTOR SURVEY

#### II. INVESTMENT IN EDUCATION AND TRAINING

##### A. INTRODUCTION

2.01 The 1981-85 Economic and Social Development Plan provides for substantial investment in the education and training system, amounting to approximately DH 14,150 million <sup>1/</sup>, 6.4% of total outlays proposed for the period. Such investment would permit the expansion of the different education levels at an average annual rate of nearly 12%, compared with about 8% between 1978 and 1980, and would increase vocational training capacity approximately threefold. The financing, feasibility, and potential impact of these investment programs on operating expenditures are the subject of this chapter.

2.02 During the three years of the 1978-80 Plan, enrollment in pre-school, primary, and secondary education grew more or less as forecast; of the DH 2,906.5 million appropriated, 97% were committed and 83% disbursed (Annex 1). Enrollment in the national universities increased at an average annual rate of 17.7%; of the DH 440.5 million appropriated, 90% was committed and 65% disbursed. In vocational training, only one third of planned instructor places were created, and only 77% of the training goals were achieved; of almost DH 500 million available, 81% were committed and 65% disbursed. Because the Plan covered only three years, not all projects were executed, and an appreciable proportion of them are now being carried out. Delays resulted in a time lag between enrollment capacity and the numbers of pupils actually entering the system and, consequently, a deterioration in education and training conditions.

2.03 Of the DH 14,150 million budgeted under the 1981-85 Plan, education receives about DH 12,000 million (nearly 85%) and training nearly DH 2,150 million (more than 15%). Within education, the major allocations are to general secondary education (44.1%), primary education (21.8%), and university education (17.3%). In training, the ministerial departments that receive the largest appropriations are Labor and Vocational Training (Office de la Formation Professionnelle et de la Promotion du Travail, the Office) (25.9%); Tourism (13.4%); and Agriculture and Agrarian Reform (8.7%). To ensure that projects started toward the end of the Plan period can be completed, there is provision for appropriations to be made available beyond the Plan period.

2.04 Five questions arise with respect to the feasibility of the education and training programs presented in the Plan:

- (a) Are the proposed programs in line with the stated objectives?
- (b) Have their costs been estimated properly?
- (c) Is there sufficient probability that financing will be secured?

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<sup>1/</sup> This amount, evaluated in 1981 dirhams, covers a five-year period. The amount available for the previous three-year period, evaluated in 1978 dirhams, was DH 3,846.5 million.

- (d) Will the administrations and agencies have sufficient capacity to execute the programs on schedule?
- (e) Will the Government budget be able to bear the operating costs generated by the proposed investments?

2.05 From the thoroughness of the preliminary work done by the agencies preparing the Plan (the Ministry of Planning and some 20 ministerial departments responsible for educational activities), as well as from examination of the document itself, it appears that the proposed programs for the creation and expansion of education and training establishments and proposed teacher-training activities, if completed on schedule, would lead to achievement of the Plan's objectives. The first question can therefore be answered in the affirmative.

2.06 The third question can be answered only after study of the overall financing of the Plan, which is outside the scope of the present study. However, the summary report suggests the priorities to be followed in the event that not all the proposed investment programs can be funded.

2.07 Replies to the second, fourth and fifth questions are contained in the next two sections, devoted respectively to the planned investments and resultant recurrent expenditures. Because of the competition for funds among the different sectors, however, it is impossible to answer definitively the questions on capacity and the ability of the Government to fund future recurrent costs.

## B. INVESTMENTS IN EDUCATION AND TRAINING

### (a) Planned Investments in Education and Training

2.08 Because of space and time constraints, only the cost estimates for the expansion programs for primary education, secondary education (both general and technical), and teacher training have been studied. These investments represent nearly 70% of total planned investment in the education and training system over the 1981-85 period (Annex 1).

2.09 In primary education, which accounts for 18.5% of total investment, the Plan provides for the following:

- (a) the construction of more than 21,000 classrooms, 700 cafeterias, and nearly 2,200 teachers' dwelling units in rural areas (DH 2,436 million); and
- (b) the completion of 87 primary schools under the third and fourth education projects (DH 177 million).

2.10 The Plan states that the overall program can be achieved only if the costs of various component activities are kept within the amounts appropriated. For example, more than 60% of the classrooms would have to be prefabricated at a unit cost of up to DH 55,000, including equipment,

irrespective of where they are built; 40% of the classrooms would be built using conventional cement block and concrete construction at a cost of up to DH 163,000 each, including equipment.

2.11 The cost of conventionally constructed classrooms can be estimated by studying the costs observed during the third education project and updating them for 1981. A classroom of 100m<sup>2</sup> gross, holding approximately 40 pupils, would cost DH 145,000, including architects' fees and technical services. The remaining DH 18,000 would finance the required equipment and furniture (DH 450 per pupil); the education project provides for DH 550, including equipment and furniture for the dwelling units and workshop). The cost on which the Plan estimates are based therefore appears to be correct and even generous.

2.12 The cost estimate for prefabricated classrooms was based on construction figures (DH 40,000 per 56m<sup>2</sup> of usable area) appearing in recently concluded contracts and on an estimate of the equipment and furniture required per classroom (DH 15,000). This estimate is also correct. The estimates for the cost of living accommodation and for cafeteria costs were prepared on the same bases and call for no special comment.

2.13 Secondary education accounts for 43.5% of the total investment in education and training. The plan provides for the construction and equipping of the following:

- 10,240 general education classrooms )
- 2,918 science education classrooms )
- 1,447 specialized education classrooms ) DH 4,744 million
- 96 classrooms for "traditional education" )
- 674 staff dwelling units )
- 190 boarding schools with 120 places each (DH 467 million).
- The first sections of five 1,000-place technical secondary schools (DH 356 million).

and the completion of the construction and equipping of:

- 5 general education secondary schools (third education project) (DH 81 million).
- 11 technical secondary schools (fourth education project) (DH 506 million).

2.14 The Plan indicates that the unit costs used are very high and must be reduced during the 1981-85 period. They are: DH 316,000 per general education classroom and DH 2,457,000 per 120-place boarding school.

2.15 The reliability of the Plan estimates can be assessed by examining the cost of the construction and equipping of general secondary schools under the third education project. A 1,200-place secondary school with 250 boarding places and 7 dwelling units cost between DH 24 million and DH 28 million, depending on location (including architect's fees and technical services), or about DH 20,000 to 23,000 per pupil. To accommodate approximately 330,000 additional pupils between 1980 and 1985, the Plan proposes investments totaling DH 5,292 million (DH 16,000 per place); according to the standards of

the third project, 275 secondary schools would be needed to accommodate them, requiring an investment of DH 6,600 to DH 7,600 million. The difference of DH 1,300 to DH 2,400 million between the Plan investment and the third project costs is explained mainly by the inclusion of nearly 1,250 dwelling units and 46,000 boarding places that are unnecessary according to the Plan goals. The Plan's estimates for general secondary education thus fall within an acceptable range.

2.16 The proposed investments for technical education are in line with the estimates for the fourth education project.

2.17 The proposed investments in teacher training, representing 7.5% of total investment, include the following:

--establishment of 4 teacher-training centers (for primary teachers):	DH 86 million
--establishment of 7 teacher training centers (CPRs) for lower-cycle secondary teachers:	DH 211 million
--establishment of 8 upper-cycle secondary teacher training schools:	DH 457 million
--establishment of 2 upper-cycle technical secondary teacher training schools (ENSETs):	DH153 million
--completion, conversion, improvement, or expansion of various other teaching establishments:	DH151 million

2.18 Comparisons of the proposed investments with a number of references relating to education projects indicate that the estimates allow for an adequate safety margin.

2.19 In conclusion, the unit costs used to estimate the amount of the investments scheduled for 1981-85 appear generally adequate. However, the Plan itself strongly emphasizes the need to reduce unit costs. The following proposals on this point are based on discussions with various authorities.

#### Proposals for Reducing Costs

2.20 The investment burden on the government budget can be reduced through a number of measures, including:

- (a) participation by other agents in funding the investments;
- (b) deconcentration;
- (c) operation of double shifts;
- (d) adjustment of enrollments according to the number of supervisors and skilled workers needed;
- (e) standardization and prefabrication;
- (f) modification of procedures; and
- (g) creation of an architecture unit within the MOE.

2.21 Participation of Other Agents in Financing the Investments: Whether it finances investments out of its own resources or by borrowing, the Government bears the burden of investment expenditures, and the question arises as to what extent this burden can be transferred to other agents. Participation by local authorities is possible, and there is already the example of some local authorities who built 100 or so school buildings out of their own resources in 1981. Such participation has been effective in many Third World countries, particularly in rural areas. It is appropriate to consider how and under what conditions local efforts could be broadened, although in many cases, the local authorities' resources would be insufficient. A number of different formulas therefore need to be studied, including:

- (a) construction using the resources of the local authority, with the Government providing funding or supplying materials (cement, sheet metal, etc.); and
- (b) construction by the Government, with the local authority providing certain services (in view of the extent of present underemployment, the opportunity cost of providing labor can be taken to be zero).

It is essential to avoid adhering to a rigid formula, using instead the formula best suited to each situation.

2.22 To oversee the development of local participation, it would probably be advisable to set up a participation unit at the central level (in the School Building and Equipment Division of the MOE) and at the level of the delegations or provinces. Such units would be responsible for the following:

- (a) ensuring consistency between the proposed building projects and the "school map" data;
- (b) channeling physical assistance by the Government to local authorities taking the initiative in school construction; and
- (c) providing technical assistance with works and supervising the observance of standards.

2.23 Local authorities would be more likely to help if local workers were not required to use construction techniques alien to them. During the examination of the draft Plan by Parliament, the distribution between conventional construction and prefabricated classrooms was disputed, and "normal" structures--less costly structures using local materials and techniques--were recommended for school buildings. There would be no problem in having such structures built and maintained by a local authority, provided

building specifications are followed and the work is executed with care. Buildings of this type offer the additional advantage of providing the local authority with a model for improving traditional housing.

2.24 Whatever its form, participation by local authorities in school construction is a gauge of local interest in developing school enrollment. If problems arise in financing the Plan's entire array of programs, the decision could be to build new schools or to rebuild classrooms only with local participation. This condition would also perhaps act as a brake on the population's demand for construction, when no counterpart contribution is asked of them. In any event, local participation could lead to a sharp reduction, of at least 50% in investment expenditures for primary and lower-cycle secondary education--the two educational levels that require massive development in order to meet social needs.

2.25 Deconcentration: Since 1979, the building of primary schools using conventional construction methods has been entrusted to the governors of the provinces, who are under the jurisdiction of the Ministry of the Interior. This procedure enables local enterprises to participate and will perhaps reduce costs, although to what extent will be unknown until current contracts have been completed. At all events, it is desirable to stimulate activity--particularly in order to create jobs--at the local level. Decentralization can also enhance the capacity to execute the investment programs.

2.26 Operation of Double Shifts: By teaching two groups of pupils in two successive shifts a day in the same premises, schools can, in principle, reduce by half the classroom space required for a given enrollment and thereby halve capital costs. This practice, which is widespread in many Third World countries where classrooms are sometimes used for three shifts a day, is being experimented with in Morocco. At present, 100 primary schools have adopted alternation (during the course of a given day: first session, Group I; first session, Group II; second session, Group I; and second session, Group II). It is feasible only where there are enough children to supply a second shift; thus, it cannot be used in rural areas with low population densities. If double shift operations were applied to 20% of incremental primary education enrollment in the period 1981-85, that is to 227,000 pupils, and if that 20% were taught in urban, conventionally constructed schools, DH 450 million in capital expenditures could be saved. Part of benefits would accrue from the systematic organization of evening courses to improve the in-service training of personnel. Intensive use of facilities would be particularly desirable for vocational training establishments, which require the use of expensive equipment.

2.27 Adjustment of Enrollments According to Needs for Supervisors and Skilled Workers: Adjusting enrollments in higher education to respond to manpower needs would affect the number of teacher places to be created. Consequently, such a change would bear on the investment programs in secondary and higher education and in training.

2.28 Standardization and Prefabrication: The MOE School Building and Equipment Division has conducted studies to lay the groundwork for standardizing school buildings and determining the optimal design of the facilities to make them pedagogically functional. The necessity of adapting a building to its site and the topography sometimes hinders strict adherence to the norms. However, greater efforts at standardization and more rigorous respect for the norms would improve cost control and facilitate technical supervision of construction.

2.29 The manufacture of standardization components has not yet been attempted. However, complete prefabrication of standard school buildings is widely practiced, since at least one Moroccan company has the capability to put up such structures in the various regions of the country. Prefabrication reduces building costs by two thirds but, as undertaken at present, has the following limitations:

- (a) it does not permit multi-story construction, which is a problem in towns where sites are rare;
- (b) it is not adaptable to different climatic conditions;
- (c) local authorities often reject it for aesthetic reasons; and
- (d) it needs maintenance, particularly for woodwork, and the amount appropriated for this is negligible.

Prefabrication is a capital-intensive technique and, in contrast to the building of conventional structures, uses only a small amount of the abundantly available labor.

2.30 Modification of Procedures: The requirement of substantial deposit (necessary to guarantee completion of the works) and delays in payment result in the payment of substantial bank premiums, which are added onto the project cost. A study is needed of ways to speed up procedures and thereby reduce public expenditures. Similarly, the practice of the Education PIU in calling for bids by single procurement lots raises costs by creating middlemen. The practice of allowing bids on natural groupings of lots, used by the MOE School Building and Equipment Division, results in principle in better bid prices. However, any assessment of the relative advantages of these two formulas must take account of the delays and difficulties that could be caused by inadequate coordination of construction projects.

2.31 Creation of an Architecture Unit: Because of the cost of architects' fees for supervising school building projects (DH 3.5 million in 1980), an architecture unit within the MOE has been proposed. Substantial savings should be realized because civil servants' salaries are much lower than the fees of private architects, who have no incentive to keep prices down under the current method of calculating their fees. The potential complications are that it will be necessary to have competent personnel, who might not be attracted by civil service pay, and to bring to the tasks an efficiency and a flexibility which do not always flow from administrative methods.

### Capacity to Execute the Program

2.32 Based on experience under the previous Plan, a substantial improvement in rates of construction and renovation of equipment will have to be accomplished in 1981-85. For example, during 1979/80, there were created 3,300 primary level classrooms; 1,150 classrooms and 1,200 boarding school places (1,920 in 1977/78) in the lower secondary cycle, and 810 classrooms and 1,200 boarding school places (2,400 in 1977/78) in the upper secondary cycle. Over a five-year period, this level of performance would produce about 75% of the primary school classrooms, 60% of the secondary school classrooms, and 50% of the boarding school places (95% if we use 1978/79 as the reference year) of the programs scheduled for completion in the 1981-85 Plan.

2.33 Improved performance will require the mobilization of considerable resources. Since education and training programs compete with programs of other sectors, the capacity to execute the Plan has to be assessed from a global standpoint. Nevertheless, a number of considerations concerning execution of the education and training programs are presented below.

- (a) Execution capacity would expand appreciably with the participation of local authorities in school buildings. Although this participation would have to be supervised and supported, it would nonetheless constitute an infusion of new energy into the execution of the programs.
- (b) Administrative deconcentration could expand execution capacity by transferring some responsibilities to the provincial governors who in turn could obtain the assistance of local enterprises and tap their production potential. For reasons of efficiency, it seems desirable to relax procedures and to allow for the project appropriations to be added directly to the provincial budget rather than having the MOE delegate the appropriations to the governors.
- (c) The modification of construction bid procedures referred to above (para. 2.30) would not only reduce costs but, by cutting down delays, would also speed program execution.
- (d) Reallocation of MOE responsibilities: the present division of responsibilities within the MOE and bodies with related aims for implementing investment programs may not make the best use of program execution capacity. The authorities concerned are the following:
  - (i) the Ministry's headquarters office, for investments relating to central and external common services;
  - (ii) the PIU, for projects receiving World Bank financing;
  - (iii) the provincial governors, who are under the jurisdiction of the Ministry of the Interior, for the construction of primary schools using conventional methods;

- (iv) the Ministry of Equipment, which delegates appropriations to the arrondissement heads, for the construction of secondary education facilities;
- (v) the MOE Planning Division, for prefabricated primary schools and establishments for training national education staff, and also for equipping certain primary schools and secondary establishments (see sub-paras. (c) and (d) above).

2.34 The present methods of executing education and training investment programs need to be carefully evaluated in order to establish and successfully implement measures to reduce public expenditures and to expand execution capacity. This evaluation should cover all the authorities participating in the execution of the programs, including non-MOE programs, and should yield proposals aimed at the following:

- (a) more efficient distribution of tasks, or even concentration of these tasks within a small number of authorities;
- (b) definition of the mechanisms for local authority participation;
- (c) more rigorous standardization of school buildings and equipment;
- (d) modification of procedures; and
- (e) possible creation of an architecture unit within the MOE.

This study should also ascertain the present unit costs of investment and the impact of the proposals on those costs.

### C. OPERATING COSTS OF THE EDUCATION AND TRAINING SYSTEM

2.35 The draft 1981-85 Plan contains no indications of the operating expenditures entailed by the proposed investments. The basic data required for those projections must be found elsewhere. The only sufficiently complete information available relates to the MOE, which absorbs nearly seven eighths of the resources budgeted for the education and training system. The Permanent Commission on Vocational Training and Employment has asked the Office to carry out a study of the expenses and costs of the various vocational training and staff training institutions which will yield an overview of the funding problems of the education and training system. The financial problems related to the Office and other training-related institutions are discussed at the end of this section.

#### Present Costs and Expenses

2.36 In recent years the MOE's total expenditures have accounted for about 19% of the government budget or about 6% of GDP. The MOE's operating expenditures represented 26-29% of government recurrent expenditures and 5% of GDP (Annex 2).

2.37 Between 1973 and 1981, when the real annual growth of GDP was 6.2%, government expenditures grew by 10.3% (recurrent expenditures by 10.1%) and MOE expenditures grew by 9.1% (recurrent expenditures by 10.8%). MOE expenditures are growing faster than government recurrent expenditures as a whole. However, growth slowed considerably between 1977 and 1980, with negative growth rates for total expenditure and for public investment expenditure (Annex 3).

2.38 The annual growth rates in recurrent expenditures at the various educational levels (Annex 4) differ appreciably. Recurrent expenditures on higher education have been growing much more rapidly (24.7% annually) than has secondary education (9.9%) or primary education (7.7%) over the period 1973-80. The latter two levels showed more rapid growth of personnel costs than of materials. In 1981, the MOE recurrent expenditures were distributed as follows: higher education, 19.0%; secondary, 45.5%; and primary, 35.5% compared with the 1973 distribution of 8%, 48.9% and 43.1%, respectively (Annex 5).

2.39 Estimated recurrent costs per pupil-year by level for 1981 were as follows (Annex 6): 1/

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	DH	Index
Higher	7,440	1,200
Secondary	2,210	356
Primary	620	100

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The unit cost of primary education corresponds to nearly 18% of per capita GDP. By comparison, the proportions are approximately 12% in Algeria and 13% in Tunisia.

2.40 The share of personnel expenditures in recurrent education expenditures is high: approximately 73%. The share of the cost of direct benefits to pupils and students (grants to teacher trainees, tuition scholarships, and boarding scholarships) is nearly 24%. The negligible share

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1/ It was not possible to derive from the available data the costs per pupil-year of the various streams of university education or those of the two forms of secondary education (general and technical). It is known, however, that appropriations are delegated to secondary schools with technical sections for workshop operation (raw materials, small repairs, maintenance); the amount is about DH 320/pupil in the secondary schools visited by the mission. A recently conducted survey of 60 secondary education establishments in collaboration with the International Institute of Education Planning (IIEP) is now being analyzed.

of equipment expenditures--just over 3% (the greater part of which is allocated to operation of the central services)--is indicative of the almost complete lack of teaching equipment in the universities and schools and in large part accounts for the mediocre yields. The institutions distribute neither school supplies nor textbooks to the pupils. A limited appropriation for reproducing texts permits the distribution of a few photocopies at the secondary and higher levels. Building maintenance appropriations are minuscule.

2.41 In contrast, the proportion of recurrent expenditures benefitting students appears to be very high in certain segments of education (Annex 6). Such expenditure represents 60% of the higher education budget, 80% of the budget for upper-secondary teacher training, 76% of the lower-secondary teacher training budget, and 44% of the budget for primary teacher training. Students in teacher training establishments receive grants, and the question arises whether this special award continues to be necessary.

2.42 Personnel expenditures account for 34% of recurrent costs in higher education but are more than 93% in secondary education and nearly 97% in primary education. As a consequence of the benefits indicated above, the annual cost per student in teacher training establishments is high: more than double the university cost.

2.43 The following table shows gross annual remuneration (rounded) of Moroccan teaching staff in 1981, calculated on the basis of the fifth step of the corresponding scale, for a person with four children, residing in Rabat:

--Primary teacher (step 7, index 242):	DH 21,050
--Secondary teacher, first cycle (step 9, index 317):	DH 29,200
--Secondary teacher, second cycle (step 10, index 377)	DH 36,600

### Financial Outlook

2.44 On the basis of the above costs and of the quantitative goals of the 1981-85 Plan, an estimate can be made of the MOE recurrent expenditures for 1985. This estimate assumes that present inadequacies are not redressed. It is thus a matter of arriving at a rough order of magnitude of the projected expenditure. Total recurrent expenditures would amount to DH 6,260 million (Annex 7), distributed by education level as follows: higher, 22%; secondary, 46%; and primary, 32%. This distribution follows the observed trend.

2.45 The Plan indicates a target rate of growth of GDP of 6.5% a year in real terms between 1981 and 1985, on the basis of an estimated GDP of DH 78 billion for 1981 1/, reaching DH 100 billion in 1985. To balance expenditures and resources, the MOE recurrent expenditures would have to be DH 6,260 million in 1985. If the observed trend is followed, applying the coefficient of elasticity calculated over the period 1973-80 between the MOE recurrent budget and that of the Government (1,096), the government recurrent budget

would amount to DH 23,400 million in 1985. Such a development would not be aberrant since it assumes annual growth rates of 11% for government recurrent expenditures and 12% for MOE recurrent expenditures between 1981 and 1985, against 10% and 11%, respectively, during the 1973-80 period.

2.46 These projections may be regarded as a high hypothesis and should be compared with a low hypothesis taking account of the effects of an unfavorable cyclical trend (zero growth in 1981 and 1982, and 5% annual growth in the next three years, and government and MOE recurrent expenditures as in the high hypothesis).

2.47 Annex 7 shows the effects of these hypotheses:

- (a) The ratio of the government recurrent budget to GDP: The proportion was 18.1% in 1980. The high hypothesis (23.4%) would entail an appreciable growth in fiscal pressure. The low hypothesis (26.7%) is even more unfavorable, since maintenance of the government expenditures in the event of slowed growth would obviously increase fiscal pressure;
- (b) The ratio of education recurrent expenditures to GDP: The proportion was 5% in 1980. It would be 6.3% in the high hypothesis and 7.2% in the low hypothesis;
- (c) The ratio of education recurrent expenditures to government recurrent expenditures: The proportion (26.7%) lies within the range of recent years.

2.48 In conclusion, in the absence of high growth or of a special effort on behalf of education at the expense of other sectors, the enrollments foreseen by the Plan can be accommodated only at the price of retaining working conditions judged inadequate and facing difficulty in meeting the irreducible minimum increase of salaries and wages due to length of service or promotion. It is appropriate to examine possibilities for reducing certain expenditures so that the savings realized can be allocated to categories more significant for harmonious development of the system.

#### Proposals for Reducing MOE Expenditures

2.49 The most important possibilities for reducing expenditures of the Ministry are as follows:

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1/ The reference is to GDP at the start of the Plan period, estimated in a normal year, taking into account the repercussions of climatic conditions on the 1980/81 crop year.

- (a) participation by other agents in the financing of education;
- (b) double shifts;
- (c) improvement of yields;
- (d) adjustment of the system according to needs for supervisors and skilled workers;
- (e) modification of the system of tuition and boarding scholarships; and
- (f) Moroccanization of the teaching staff.

2.50 Participation by Other Agents in Financing Education: The government budget funds all personnel expenditures in public education, a modest portion of equipment expenditure (teaching equipment, transportation, printing, supplies, school textbooks, etc.), and scholarship, boarding, and cafeteria expenses. Local authorities do not routinely help finance education recurrent expenditures. As discussed above, local authorities should be encouraged to participate in capital expenditures and facility maintenance. It would be illusory to hope that they could contribute to recurrent expenditures as well.

2.51 In practice, it falls to the families to provide the pupils with the individual equipment needed (textbooks and supplies). However, they can do so only to a small extent because of their low average incomes, particularly since entry of the children into school often constitutes a loss of income to the family. Moreover, the families contribute to the Pupils' Parents Association (DH 2 per pupil; DH 10 per pupil in secondary schools) and a tuition fee (DH 10 per pupil in secondary schools). Families' limited ability to contribute would thus make it difficult for them to assume a larger share of education costs. It would be preferable to enable families to improve the conditions under which they currently contribute. For example, the creation of cooperatives in schools would enable parents to buy supplies such as exercise books and pencils more cheaply, as the cooperative could obtain wholesale or semi-wholesale prices. In the same way, libraries where the pupils can borrow the most needed textbooks could be set up. These modest steps would appreciably improve learning conditions.

2.52 Operation of Double Shifts: The possible effects of double shifting in reducing expenditures have been discussed above. Where a single teacher takes charge successively of two groups of pupils on the same premises, double shifts not only can improve the return on the facilities but also can double the pupil/teacher ratio and thereby halve personnel costs, which account for most of the recurrent costs of education. The double shifting of 20% of primary education enrollment would yield savings of about DH 190 million in 1985, nearly 10% of the total expenditure at this educational level.

2.53 In a number of countries, double shifting has made it necessary to curtail programs in order to reduce the daily schedule, often eliminating activities vital for the child's development. To this drawback must be added the extra load on the teacher, which is not conducive to the desired improvement in yields.

2.54 Improvements in Output: Low yields are a major concern of educational authorities. In primary education, 8.6 pupil-years are needed to attain complete schooling, instead of the 5 prescribed years. In the lower-secondary cycle, 5.3 years instead of 4 are needed, and in the upper-secondary cycle, 4.2 instead of 3. In total, 18 pupil-years on average instead of the theoretical 12 are needed to complete schooling.

2.55 The cost per pupil trained could no doubt be reduced by improving the efficiency of teaching and learning within each education and training cycle by better selection, orientation, make-up courses, higher qualification of teachers, and more suitable methods. The places freed by improved yields at the primary and secondary levels would make it possible to speed up the process of schooling and/or reduce the pupil/teacher ratio. The same would apply to the universities until optimal staffing could be achieved. In other words, improving yields would make it possible to raise educational outputs, without entailing additional expenditures.

2.56 Adjustment of the Education and Training System According to Needs for Supervisors and Skilled Workers: Enrollment projections for primary, secondary and higher education were calculated for the Plan on the basis of the number of seven-year olds entering the first year of primary school, and by applying the observed dropout, repeater, and promotion rates for recent years. In higher education, it is planned to accommodate all of the baccalaureat holders in a structure organized by level (the three cycles) and by specialty.

2.57 Logically, projected enrollments in higher education should be targetted to respond to training needs indicated by employment projections. The goal of equal access to education at lower levels is not compatible with the uncontrolled development of higher education--and the concomitant expenses of that development--so long as the goal of a minimum education for all young Moroccans has not been achieved. A comparison of relative annual costs shows that one entrant at the university costs the same as 12 children enrolled in primary schools. When the results of the MOP's Education, Training, and Employment Study become available, quantitative and qualitative goals can be assigned to the various training streams, and resources reallocated between education levels so as to make the appropriate adjustments. This seems to be the only way to avoid both wasting scarce resources and accelerating "intellectual unemployment." This adjustment of enrollments would affect the development of the upper cycle of secondary education, whose main purpose is to channel students to higher education. Restricting progression from this cycle but increasing the proportion of science students would improve the profile of graduates and raise the yields of the system, generating new savings.

2.58 While such measures for adapting training more closely to employment are probably most effective for reducing expenditures, they can bear full fruit only in the long run. This should be accomplished through a continuation of a system of selection and policies of career guidance and selective admissions and scholarships, as well as through a prior rationalization of growth of education capacity by level and specialization in accordance with national needs.

2.59 Modification of the System of Tuition and Boarding Subsidies:  
Expenditures under this heading in FY80 were as follows:

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	DH Millions
<u>Primary Education</u>	<u>9.0</u>
First-degree scholarships	0.4
Operation of school cafeterias	8.0
Boarding subsidy (0.7% of total primary education expenditure)	0.6
<u>Secondary Education (general and technical)</u>	<u>72.8</u>
Scholarships	72.0
Boarding scholarships (45% of total secondary education expenditure)	0.8
<u>Higher Education</u>	<u>394.0</u>
Fellowships abroad and in Morocco <u>1/</u>	360.0
Subsidies to university cities, 61% of total higher education expenditure	<u>34.0</u>
Total	<u>475.8</u>

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These expenditures represented 13.5% of MOE expenditures, and 11.2% for higher education alone.

2.60 No reduction in primary education expenditures is appropriate. Although scholarships are going to be gradually eliminated, school cafeterias should, for good reasons, continue to develop.

2.61 At the secondary level, the subsidy paid for full-time boarding students amounts to about DH 1,400 a year (DH 440 per term paid over nine and a half months, and that for semi-boarding students is half that amount. These

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1/ Include both the scholarships granted to university students and those received by students of higher-level training establishments operating under the aegis of the various ministerial departments.

sums, paid to educational institutions, are designed to meet boarding costs (equipment, food, and service personnel). According to the Plan, the enrollment of scholarship-holders would grow in proportion to total pupil enrollment at the secondary level. Thus, 1985 expenditures would amount to about DH 120 million, being 4.4% of total secondary education expenditure and less than 2.0% of total MOE outlays.

2.62 These expenditures can be reduced only through a reduction in the level of scholarships (although the boarding schools already have difficulty operating on DH 5 per day per pupil) or a reduction in the number of pupils receiving such scholarships. However, despite the increased number of secondary establishments, young people from the rural areas will have difficulty pursuing studies at the upper-cycle level (particularly in the technical sections of the lycées) if boarding school services are denied to them.

2.63 A significant reduction in higher education expenditures cannot reasonably be expected except by altering the system of scholarships and university dormitories. Of the more than 86,000 students in national universities in 1980/81, 50,745--the majority of full-time students-- hold scholarships. The scholarships amount to DH 4,334 for the first and second cycles and DH 8,554 for third cycle. These amounts have not changed since 1977, so their purchasing power has fallen appreciably. Students also enjoy the benefits of the university dormitories where the charges cover only part of the cost, the balance being covered through government subsidies. The rates charged amount to DH 40 a month for a room and DH 1.40 per meal (compared with a true meal cost of DH 6-7).

2.64 Moreover, in 1980/81, there were about 17,900 scholarship students abroad, including 3,400 in Belgium, the latter receiving a higher subsidy than others (DH 9,763 a year against DH 8,200, for the first and second cycles and DH 16,763 a year against DH 13,968 for the third cycle). These amounts have not been changed since 1979. Between 1979/80 and 1980/81, the number of scholarship students in Morocco grew by 6.5%, whereas the number abroad grew by 19.2%. If the growth of expenditure on scholarships were proportional to the growth of enrollment in the national universities and in the upper-level training establishments for supervisory staff of the various ministries, outlays for scholarships would amount to approximately DH 780 million in 1985--equal to about 56% of higher education expenditures and 13% of MOE expenditures. These figures are probably underestimated, in view of the trend toward a rapid increase in the (higher) scholarships for overseas study. Higher education scholarships do, however, play a role in income distribution, representing a pre-employment wage. University students, who are an important pressure group, would be very sensitive to any abridgement of what they consider to be their acquired rights.

2.65 Prospects for reducing education expenditures can be examined from several points of view:

- (a) reduction in scholarship amounts;

- (b) increase in the rates for room and board;
- (c) abolition of scholarships for certain categories of students;
- (d) relating the number of scholarships to the need for supervisory personnel and skilled workers;
- (e) abolition of special aid programs;
- (f) replacement of the scholarship system with a loan program.

2.66 Reduction in Scholarship Amounts, and Increasing Room and Board to Amounts Closer to Actual Costs: These two measures are closely inter-related. The nominal amounts of scholarships in Morocco were fixed in 1977; their actual buying power has fallen with inflation. The same applies to an increase in charges: the nominal amount charged for meals has remained unchanged, while the room charge has fallen (DH 40 instead of DH 60), in accordance with a general legislative measure providing for one third reduction in rent for low-income persons. Since the amounts of the scholarships and the charges are linked, any action to change either would lead the students to make an offsetting claim on the other. It is, therefore, difficult to alter the status quo, monetary depreciation itself reducing the real amount of the scholarships.

2.67 Abolition of the Scholarship for Certain Categories of Students: Denying scholarships to students from families with incomes above a prescribed limit or who do not achieve adequate results should be considered, even though families' current economic difficulties will make them more sensitive to the elimination of a supplemental source of income. Moreover, student hostility, recently caused measures to eliminate scholarship benefits for repeater or double-repeater university students to be withdrawn. Student organizations oppose measures of this kind because they fear that non-objective application of the selection criteria would lead to unjustified discrimination among students.

2.68 Basing the Number of Scholarship-Holders on the Need for Supervisors and Skilled Workers: If, as indicated above, higher education enrollments were adjusted in relation to manpower needs, maintenance of the present percentage of scholarship-holders would lead to a change in their numbers to reflect the volume of those needs.

2.69 Another approach would be to impose no limit on student enrollment but to grant scholarships only to students following study courses that meet national needs. Under this system, the number of scholarship-years needed to train students for the number of jobs in each category would be calculated and scholarships distributed in the following manner: if 100 practical engineers (in whatever specialty) were projected to be needed in 1986, 100 scholarships would be allocated at the beginning of the 1982 school year to the candidates placed highest on the aptitude lists following an examination; another 100 scholarships would be allocated at the beginning of the 1983, 1984 and 1985 school years to the pupils who scored highest in the corresponding stream the

previous year. This procedure would also improve output. Though this measure, like those above, also involves discrimination, it is based on an exogenous and less controversial criterion--national manpower requirements.

2.70 Abolition of Special Programs: The in-training salary that students in teacher-training establishments receive is justifiable because it directs toward teaching students who would otherwise be tempted to enter other forms of training. Once the teacher recruitment needs are met, this incentive should be eliminated.

2.71 Replacement of the Scholarship System by a Loan Program: At present, for a young man or young woman to complete the entire secondary cycle constitutes a substantial privilege; the great majority of young Moroccans lack the opportunity to go to school or must drop out before reaching the secondary level. It is questionable whether this inequality should be aggravated by providing special privileges or facilities to those who undertake higher studies in search of gain or higher social status. Yet the country needs supervisory staff, who should be trained without any socio-economic discrimination at the selection stage, and for this student aid is necessary.

2.72 One answer to this dilemma is to establish a system of loans. There are two requirements for such a system: the existence of a fund replenished by subsequent repayments by borrowers and an assurance that a job will be available to a loan recipient when he completes his studies. This latter point is vital, since the scheme would break down in the absence of remunerative activity enabling the students to repay their loans. This necessity, in turn, implies that loans should be available only to students pursuing studies that lead to a job, that is, that meet a need. Introduction of this system would require the creation of an institution and a fund. When in full operation, this loan program could cut higher education expenditures in half by 1985. MOE outlays would be reduced by more than 10% taking into account the operating costs of the new institution.

2.73 Moroccanization of Teaching Staff: Foreign teachers account for a high proportion of the teaching staff:

(a) 834 (29% in higher education in 1981/82) 1/.

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1/ Ministry of National Education, La rentrée scolaire et universitaire 1981/82 (September 1981).

- (b) 442 (46% in teacher training and primary inspector training in 1979/80) 1/.
- (c) 5,024 (16% in general and technical secondary education in 1979/80 (including inspectors)) 2/.
- (d) 585 (67% in secondary school teacher training in 1979/80) 2/.

2.74 French aid is particularly important in this field: at the beginning of the 1981 school year, France contributed 4,135 teachers (including 371 national service volunteers), distributed approximately as follows:

DISTRIBUTION OF FRENCH TEACHERS BY LEVEL AND DISCIPLINE

1981/82

	Number	Percentage
<u>Education Stream:</u>		
Teacher and supervisor training	1,110	27
Higher education (university, cadre training)	585	14
Secondary education (general, technical, cadre training)	<u>2,440</u>	<u>59</u>
Total	<u>4,135</u>	<u>100</u>
<u>Discipline:</u>		
Mathematics, sciences	2,210	53
French language	1,190	29
Other languages	290	7
Technology/engineering	250	6
Others	<u>195</u>	<u>5</u>
Total	<u>4,135</u>	<u>100</u>

1/ Ministry of National Education, Statistics and Evaluation Division, Statistiques Enseignement Primaire 1979/80.

2/ Ministry of National Education, Statistics and Evaluation Division, Statistiques Enseignement Secondaire 1979/80.

2.75 In recent years, the number of French coopérants has fallen steadily, although their numbers are expanding in teacher training and in higher-level training, including universities. In general secondary education, coopérants are found only in science, French, and foreign-language teaching.

2.76 A reduction, desired by France, in the number of coopérants can be accomplished in the medium term only by a substantial effort toward Moroccanization at the secondary level. However, no true plan of succession exists. According to indications in the Plan, Moroccanization would affect 1,150 teachers in the upper cycle of secondary education; moreover, the approximately 150 French teachers in the lower cycle would be replaced. In contrast, in 1985/86, more than 350 teacher posts in technical education can be filled only through foreign personnel (210 posts more than in 1981/82). There could, therefore, be a total reduction amounting to about 1,100 coopérants in secondary education.

2.77 Despite the number of Moroccans pursuing third-cycle studies in Morocco or abroad, a reduction in French teaching staff assistance seems unlikely at the higher level, given the Plan's ambitious goals for enrollment growth and improvement of staffing. For the same reasons, recourse to French teaching personnel for teacher training is likely to increase.

2.78 In the absence of more precise data, the hypothesis of a reduction in French coopérant staff at the 7% rate observed between 1974 and 1981 would yield a 25% reduction between 1981 and 1985, equal to about 1,000 persons; this figure is very close to that estimated above. This appears to be a maximum, since the more specialized or highly placed the foreign personnel, the more difficult it is to replace them.

2.79 The benefit of Moroccanization would be DH 70,000 per teacher, or DH 70 million for 1,000 teachers. This savings is equal to 2.4% of the 1985 expenditure on secondary education or 1.1% of total projected MOE expenditures in that year. This calculation assumes that the 1,000 teachers are paid entirely by Morocco, which is true in the case of non-titular teachers or titular teachers in non-scientific disciplines (where priority will be given to securing Moroccan personnel). The average annual cost of personnel in these categories amounts to about DH 100,000 (remuneration plus family allowances plus proportion of installation bonus minus Moroccan taxation), whereas the average annual cost of the corresponding Moroccan personnel is about DH 30,000.)

2.80 The reduction in expenditures to be expected from using Moroccan personnel is, however, limited. As Moroccanization extends to higher-level teachers, the gains to Morocco will progressively diminish; at these levels the cost of the Moroccan share of the remuneration for cooperation assistants will remain practically unchanged, whereas the cost of the Moroccan personnel will rise. Careful management of national human resources should, however, tend toward replacement of foreign personnel whenever possible, so as to reduce educational expenditure and create jobs for Moroccans who would otherwise swell the ranks of the educated unemployed.

### Operating Expenditures for Training Institutions

2.81 A detailed examination is necessary to obtain a picture of the recurrent budgets of the training activities of the various ministerial departments. Training expenditures appear under different headings, depending on the department; and, within a given department, financial regulations can differ from one establishment to another. In MARA, for example, the two higher agricultural education establishments are financially autonomous and receive a subsidy from the government budget (see Volume IV, Agricultural Education and Training). In agricultural technical education, however, some schools are managed as above; others are run as normal administrative services, the staff being paid by the Treasury and not appearing in the budget of the Agricultural Education and Research Division. In other cases, appropriations for various divisions fund certain educational activities; although the budget headings may not indicate that the expense pertains to training.

2.82 Without such a study, it is possible only to list the (probably incomplete) figures on expenditures, amounting to:

DH 41.3 million for the Ministry of Agriculture (1981);

DH 85.8 million for the Ministry of Youth and Sport (1980); and

DH 62.1 million for the Office (1981).

These total approximately DH 200 million for three of the departments of greatest significance in training. Together, these agencies trained nearly one-third of all supervisors and skilled workers in the 1978-80 period, and were responsible for 46% of vocational enrollments. During the 1981-85 period, they would be responsible for 40% of supervisor and skilled-worker training and 90% of vocational training activities. A figure of DH 600 million is a rough order of magnitude for the 1981 expenditures on training outside those of the MOE.

2.83 On these uncertain bases, training expenditures can be estimated roughly as increasing from DH 600 million in 1981 to DH 900 million in 1985.

2.84 The Office is a special case in the training system because of the way it is financed. Its recurrent resources are from a 1% training levy on gross wages paid by all private enterprises. From 1975 to 1981, the revenue from this tax rose from DH 23.6 million to an estimated DH 62.1 million, equal to an annual growth rate of 17.5% at current prices. (Indications concerning the distribution of the Office's operating expenditures by category, together with estimates of annual cost per trainee, are presented in Volume V, Technical Education and Vocational Training.) Personnel expenditures account for 65% of the total. The planned opening of 13 new Office technician training centers (ITAs) will result in substantial incremental expenditures, which the Office will be unable to finance out of the training levy alone. Solutions to this problem (such as State budget subsidy, raising of the tax,

or other formulas) cannot be devised until the training authorities of other ministerial departments and the employers' representatives reach a consensus on the Office's appropriate role. This is a major point that needs to be examined so that better coordination and a more functional distribution of tasks within the training system can be established.

2.85 The various proposals made above for reducing education expenditures apply also to training. In this case, adjusting the system according to supervisor and skilled-worker needs could make it fully effective, because the raison d'être of training activities is precisely to prepare trainees for probable jobs. The search for a reasonable return on expensive installations by more intensive use must be pursued unremittingly, through double shifts for initial training, evening courses for in-service training of personnel, etc. In training, yields are generally satisfactory and less is likely to be gained from improving these yields than would be gained through improving yields at the three levels of formal schooling.

2.86 Based on the provisional figures presented above for the various training institutions, the education and training system as a whole would cost DH 4,600 million in 1981 in the form of training expenditures, equal to about 30% of government recurrent expenditures. Nearly 87% of these expenditures arise from MOE activities. In 1985, the system would absorb more than DH 7 billion for recurrent expenditures alone. This amount would represent about 30.6% of government recurrent budget. These proportions, though apparently tolerable, assume first of all that the hypotheses adopted above about the growth of GDP and the government recurrent budget are accurate, and secondly, that the present amounts spent per student per year at the three levels of education--amounts that are far from adequate to provide quality education--remain unchanged.

#### D. CONCLUSIONS

2.87 A number of proposals have been put forward for reducing the burden that the education and training system imposes on the budget, in terms of both capital and recurrent expenditures, and for achieving a more satisfactory equilibrium between needs and financial resources. Some of these proposals--particularly those relating to manpower needs--are of fundamental importance, since they involve the definition of a strategy based on deliberate choices.

2.88 Knowledge of the medium- and long-term needs for supervisors and skilled workers would permit definition of quantitative and qualitative economic goals. On the basis of these goals, enrollment needs in the various training institutions as well as in the various levels of the school system could be fixed on the basis of certain hypotheses with respect to yields and desired graduation profiles. In this way, capital and recurrent expenditure requirements for education and training can be projected.

2.89 In light of Morocco's needs, important decisions on development of the education and training system need to be made (for example, adaptation of enrollment policies and investment programs according to needs for supervisors and skilled workers, modification of the system of tuition and boarding scholarships, institution of a system of loans, rate of Moroccanization of the teaching corps).

ANNEX 1. EDUCATION AND TRAINING INVESTMENT PROGRAM - 1978-80 AND 1981-85

Type of Ministry	1978-80 Plan (in millions of 1978 dirhams)			1981-85 Plan (in millions of 1981 dirhams)			% by type or Ministry
	Planned	% Obligated	% Spent	1981-85	Beyond 1985	Total	
<u>Education</u>	<u>3,347,0</u>	-	-	<u>9,448,1</u>	<u>2,552,9</u>	<u>12,001,0</u>	<u>100,0</u>
Pre-school				-	-	-	-
Primary				2,350,9	262,2	2,613,1	21,8
Secondary General				3,669,6	1,622,5	5,292,1	44,1
Secondary Technical	2,906,5	97	83	534,5	327,3	861,8	7,2
Teacher Training				716,9	340,9	1,057,8	8,8
Joint Activities				101,2	-	101,2	0,8
University	440,5	90	65	2,075,0	-	2,075,0	17,3
<u>Training</u>	<u>497,0</u>	<u>81</u>	<u>65</u>	<u>2,146,8</u>	-	<u>2,146,8<sup>a/</sup></u>	<u>100,0<sup>a/</sup></u>
MOL and Vocational Training	76,1	96	62	452,6	-	452,6	25,9
Tourism	41,0	76	24	234,6	-	234,6	13,4
MARA	87,3	71	70	151,2	-	151,2	8,7
Social Affairs	21,1	100	89	54,4	-	54,4	3,1
Youth and Sports	-	-	-	67,2	-	67,2	3,8
Other Ministries	271,5	79	70	786,8	-	786,8	45,1
<b>Total</b>	<b>3,844,0</b>	<b>-</b>	<b>-</b>	<b>11,594,9</b>	<b>2,552,9</b>	<b>14,147,8</b>	<b>-</b>

Source: Mission estimates, from 1981-85 Plan data.

<sup>a/</sup> The "Total" figure for training includes DH 400 million of unallocated funds, whose distribution by ministry is estimated on the basis of allocated funds in the Plan.

ANNEX 2. EVOLUTION OF THE MOE BUDGET AS A SHARE OF GDP AND TOTAL PUBLIC EXPENDITURES (1973-81)

(in millions of current dirhams)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Gross Domestic Product <u>a/</u>	24.915	33.602	36.393	41.012	49.761	55.154	62.043	70.024	-
Government Budget	5.751,4	9.459,5	15.136,5	18.077,5	20.629,9	17.596,6	19.358,1	21.062,5	25.353,2
Current	(3.513,2)	(6.122,9)	(8.848,5)	(8.213,5)	(8.885,5)	9.468,8	(10.622,2)	(12.634,5)	(15.356,6)
Capital	(2.238,2)	(3.336,6)	(6.288,0)	(9.864,0)	(11.744,4)	(8.127,8)	(8.735,9)	(8.428,0)	(9.996,6)
MOE Budget	1.198,4	1.453,5	1.897,7	2.547,8	3.027,9	3.094,7	3.869,2	4.045,4	4.816,7
Current	(935,3)	(1.018,0)	(1.318,7)	(1.796,2)	(2.201,8)	(2.664,2)	(3.073,2)	(3.519,4)	(3.974,0)
Capital	(263,1)	(435,5)	(579,0)	(751,6)	(826,1)	(430,5)	(796,0)	(526,0)	(842,7)
<u>Government Budget</u>									
GDP	23,1	28,2	41,6	44,1	41,5	31,9	31,2	30,1	-
<u>MOE Budget</u>									
GDP	4,8	4,3	5,2	6,2	6,1	5,6	6,2	5,8	-
<u>MOE Budget</u>									
Government Budget	20,8	15,4	12,5	14,1	14,8	17,6	20,0	19,2	19,0
<u>MOE Current Budget</u>									
Government Current Budget	26,6	16,6	14,9	21,9	24,8	28,1	28,9	27,9	25,9
<u>MOE Capital Budget</u>									
Government Invest. Budget	11,8	13,1	9,2	7,6	7,0	5,3	9,1	6,2	8,4

Source: Mission estimates based on data furnished by MOP and MOE.

a/ MOP estimate of GDP based on most recent data, tentative estimate for 1980.

ANNEX 3. EVOLUTION OF GROSS DOMESTIC PRODUCT (GDP), GOVERNMENT EXPENDITURES AND MOE EXPENDITURES, 1973-80

(in millions of  
1969 dirhams a/)

	1973	1977	1978	1979	1980	Croissance 1973-77		Croissance 1977-80		Croissance 1973-80	
						Index	Annual Rate of Growth	Index	Annual Rate of Growth	Index	Annual Rate of Growth
<b>GDP</b>	<u>21.187</u>	<u>28.934</u>	<u>29.580</u>	<u>30.998</u>	<u>32.382</u>	<u>1,366</u>	<u>8,1</u>	<u>1,119</u>	<u>3,8</u>	<u>1,528</u>	<u>6,2</u>
<b>Government Budget</b>	<u>4.890</u>	<u>11.994</u>	<u>9.435</u>	<u>9.670</u>	<u>9.742</u>	<u>2,453</u>	<u>25,2</u>	<u>0,812</u>	<u>- 6,7</u>	<u>1,992</u>	<u>10,3</u>
<b>Current</b>	<u>2.987</u>	<u>5.166</u>	<u>5.077</u>	<u>5.306</u>	<u>5.844</u>	<u>1,729</u>	<u>14,7</u>	<u>1,131</u>	<u>4,2</u>	<u>1,956</u>	<u>10,1</u>
<b>Capital</b>	<u>1.903</u>	<u>6.828</u>	<u>4.358</u>	<u>4.364</u>	<u>3.898</u>	<u>3,588</u>	<u>37,6</u>	<u>0,571</u>	<u>-17,0</u>	<u>2,048</u>	<u>10,8</u>
<b>MOE Budget</b>	<u>1.019</u>	<u>1.760</u>	<u>1.659</u>	<u>1.933</u>	<u>1.871</u>	<u>1,727</u>	<u>14,6</u>	<u>1,063</u>	<u>2,1</u>	<u>1,836</u>	<u>9,1</u>
<b>Current</b>	<u>795</u>	<u>1.280</u>	<u>1.428</u>	<u>1.535</u>	<u>1.628</u>	<u>1,610</u>	<u>12,6</u>	<u>1,272</u>	<u>8,2</u>	<u>2,048</u>	<u>10,8</u>
<b>Capital</b>	<u>224</u>	<u>480</u>	<u>231</u>	<u>398</u>	<u>243</u>	<u>2,143</u>	<u>25,0</u>	<u>0,506</u>	<u>-20,3</u>	<u>1,085</u>	<u>1,2</u>

Source: Based on data furnished by the Ministry of Planning and MOE.

a/ Conversion into 1969 dirhams using the following price index:

1,000	1969	
1,176	1973	
1,720	1977	
	1,865	1978
	2,002	1979
	2,162	1980

ANNEX 4. DISTRIBUTION OF MOE RECURRENT EXPENDITURES BY LEVEL OF EDUCATION AND CATEGORY OF EXPENDITURE, 1973-81

(in millions of current dirhams)

Level and Category of Expenditure	1973	1974	1975	1976	1977	1978	1979	1980	1981	Expenditure Elasticity with respect to total MOE Expenditures	Growth in constant dirhams	
											Index	Annual Rate of Growth
Higher	74,9	95,9	164,0	240,3	313,9	383,3	512,7	644,3	756,0	2,80	4,680	24,7
. Salary	(22,5)	(39,2)	(56,2)	(78,9)	(120,9)	(150,8)	(182,4)	(222,6)	(304,3)	(3,85)	(5,383)	(27,2)
. Supplies	(52,4)	(56,7)	(107,8)	(161,4)	(193,0)	(232,5)	(330,3)	(421,7)	(451,7)	(2,35)	(4,379)	(23,5)
Secondary	457,7	473,9	572,3	858,2	1.094,8	1.304,2	1.476,7	1.629,3	1.805,9	0,91	1,937	9,9
. Salary	(414,4)	(429,1)	(499,6)	(774,4)	(1.014,7)	(1.223,5)	(1.386,8)	(1.516,1)	(1.691,5)	(0,95)	(1,993)	(10,4)
. Supplies	(43,3)	(44,8)	(72,7)	(83,8)	(80,1)	(80,7)	(89,9)	(111,2)	(113,4)	(0,50)	(1,397)	(4,9)
Primary	402,7	448,2	582,4	697,7	793,1	976,7	1.083,9	1.245,7	1.411,0	0,77	1,683	7,7
. Salary	(384,2)	(427,5)	(552,0)	(663,5)	(748,8)	(932,8)	(1.044,6)	(1.202,6)	(1.367,1)	(0,79)	(1,703)	
. Supplies	(18,5)	(20,7)	(30,4)	(34,2)	(44,3)	(43,9)	(39,3)	(43,1)	(44,9)	(0,44)	(1,268)	(3,5)
Total	935,3	1.018,8	1.318,7	1.796,2	2.201,8	2.664,2	3.073,3	3.519,3	3.973,9	-	2,047	10,8
. Salary	(821,1)	(895,8)	(1.107,8)	(1.516,8)	(1.884,4)	(2.307,1)	(2.613,8)	(2.943,3)	(3.363,9)	(0,95)	(1,950)	(10,0)
. Supplies	(114,2)	(122,2)	(210,9)	(279,4)	(317,4)	(357,1)	(459,5)	(576,0)	(610,0)	(1,34)	(2,744)	(15,6)

Source: Based on data provided by MOP and MOE.

**ANNEX 5. PERCENT DISTRIBUTION OF MOE RECURRENT EXPENDITURES  
BY LEVEL OF EDUCATION AND CATEGORY OF EXPENDITURE, 1973-1981**

(current dirhams)

Level and Category of Expenditure	1973		1977		1978		1979		1980		1981	
<b>Higher</b>	8,0	100,0	14,3	100,0	14,4	100,0	16,7	100,0	18,3	100,0	19,0	100,0
. Salary	(2,4)	(30,0)	(5,5)	(38,5)	(5,7)	(39,3)	(5,9)	(35,6)	(6,3)	(34,5)	(7,7)	(40,3)
. Supplies	(5,6)	(70,0)	(8,8)	(61,5)	(8,7)	(60,7)	(10,8)	(64,4)	(12,0)	(65,5)	(11,3)	(59,7)
<b>Secondary</b>	48,9	100,0	49,7	100,0	48,9	100,0	48,0	100,0	46,3	100,0	45,5	100,0
. Salary	(44,3)	(90,5)	(46,1)	(92,7)	(45,9)	(93,8)	(45,1)	(93,9)	(43,1)	(93,2)	(42,6)	(93,7)
. Supplies	(4,6)	(9,5)	(3,6)	(7,3)	(3,0)	(6,2)	(2,9)	(6,1)	(3,2)	(6,8)	(2,9)	(6,3)
<b>Primary</b>	43,1	100,0	36,0	100,0	36,7	100,0	35,3	100,0	35,4	100,0	35,5	100,0
. Salary	(41,1)	(95,4)	(34,0)	(94,4)	(35,0)	(95,5)	(34,0)	(96,4)	(34,2)	(96,5)	(34,4)	(96,8)
. Supplies	(2,0)	(4,6)	(2,0)	(5,6)	(1,7)	(4,5)	(1,3)	(3,6)	(1,2)	(3,5)	(1,1)	(3,2)
<b>Total</b>	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
. Salary	(87,8)	(87,8)	(85,6)	(85,6)	(86,6)	(86,6)	(85,0)	(85,0)	(83,6)	(83,6)	(84,7)	(84,7)
. Supplies	(12,2)	(12,2)	(14,4)	(14,4)	(13,4)	(13,4)	(15,0)	(15,0)	(16,4)	(16,4)	(15,3)	(15,3)

Source: Based on data provided by MOP and MOE.

ANNEX 6 COSTS PER STUDENT YEAR IN 1980, AND PROJECTED 1985 ESTIMATIONS BY LEVEL OF INSTRUCTION

Level of Instruction and Category of Expenditure	1980		1981		1985			
	Expenditure in Millions of 1980 dirhams	Enrollments <sup>a/</sup> in Thousands of students	Costs in DH 1980	Costs in DH 1981 b/	Enrollments <sup>a/</sup> in Thousands of students	Expenditures in c/ Thousands of DH 1981	% by Type	% by Object of Expenditure
<b>Upper</b>	644,3	-	6 892	7 444	-	1 388,9	22,2	100,0
Salaries	222,6	78,5	2 836	3 063	156,2	478,4	-	34,4
Scholarships & Dormitories	387,6	107,0 <sup>d/</sup>	3 622	3 912	214,0 <sup>d/</sup>	837,2	-	60,3
Supplies	34,1	78,5	434	469	156,2	73,3	-	5,3
<b>Secondary (total)</b>	1 629,3	-	-	-	-	2 880,9	46,0	100,0
Salaries e/	1 371,0	-	-	-	-	2 229,2	-	77,4
Scholarships & Dormitories	219,8	-	-	-	-	571,7	-	19,8
Supplies e/	38,5	-	-	-	-	80,0	-	2,8
<b>Secondary schools</b>	1 440,2	703,5	2 047	2 211	1 041,3	2 302,3	(36,8)	100,0
Salaries	1 341,9	703,5	1 907	2 060	1 041,3	2 145,1	-	93,2
Fellowships, dorms	72,8	703,5	104	112	1 041,3	116,6	-	5,1
Supplies e/	25,5	703,5	36	39	1 041,3	40,6	-	1,7
<b>Upper Secondary Teacher Training</b>	46,32	3,19	14 520	15 682	13,64	213,9	(3,4)	100,0
Salaries e/	4,63	3,19	1 451	1 567	13,64	21,4	-	10,0
Student teacher salaries	38,54	3,19	12 082	13 049	13,64	178,0	-	83,2
Supplies	3,15	3,19	987	1 066	13,64	14,5	-	6,8
<b>Lower Secondary Teacher Training</b>	142,77	7,95	17 959	19 396	18,8	364,7	(5,8)	100,0
Salaries e/	24,53	7,95	3 086	3 333	18,8	62,7	-	17,2
Student teacher salaries	108,50	7,95	13 648	14 740	18,8	277,1	-	76,0
Supplies	9,74	7,95	1 225	1 323	18,8	24,9	-	6,8
<b>Primary (total)</b>	1 245,8	-	-	-	-	1 988,1	31,8	100,0
Salaries e/	1 167,1	-	-	-	-	1 852,4	-	93,2
Scholarships & dormitories	44,5	-	-	-	-	80,4	-	4,0
Supplies	34,2	-	-	-	-	55,3	-	2,8
<b>Primary Schools</b>	1 165,4	2 015,2	578	624	2 936,8	1 832,6	(29,3)	100,0
Salaries	1 125,0	2 015,2	558	603	2 936,8	1 770,9	-	96,6
Scholarships, dorms, student cafeterias	9,0	2 015,2	4	4	2 936,8	11,8	-	0,7
Supplies e/	31,4	2 015,2	16	17	2 936,8	49,9	-	2,7
<b>Primary Teacher Training</b>	80,37	4,84	16 605	17 933	8,67	155,5	(2,5)	100,0
Salaries e/	42,12	4,84	8 702	9 398	8,67	81,5	-	52,4
Student teacher salaries	35,47	4,84	7 329	7 915	8,67	68,6	-	44,1
Supplies	2,78	4,84	574	620	8,67	5,4	-	3,5
<b>Total</b>	3 519,4	-	-	-	-	6 257,9	100,0	100,0
Salaries e/	2 760,7	-	-	-	-	4 560,0	-	72,9
Student Teacher Salaries, Dorms, Cafeterias	651,9	-	-	-	-	1 489,3	-	23,8
Supplies	106,8	-	-	-	-	208,6	-	3,3

a/ Synthetic enrollments based on two thirds of current-year enrollment and one third of subsequent year enrollments.

b/ 1981 costs are estimated on the basis of 1980 distribution of expenditures.

c/ Expressed in 1981 dirhams

d/ In addition to students in national universities, includes students studying abroad, and in the training programs of other ministries.

e/ Salaries of student teachers in teacher training institutions are represented separately from the general "salaries" category

ANNEX 7. RECURRENT MOE EXPENDITURE IN RELATION TO  
GOVERNMENT EXPENDITURES AND GDP, 1981-85

	In Millions of Current dirhams		In Millions of 1981 dirhams	
	1980	1981	1985	
			High Hypothesis	Low Hypothesis
GDP	70.024	78.000	100.000 <sup>a/</sup>	87.500 <sup>b/</sup>
Government Recurrent Expenditures	12.635	15.357	23.400 <sup>c/</sup>	23.400 <sup>c/</sup>
MOE Recurrent Expenditures	3.519	3.974	6.260	6.260
of which: Primary	1.246	1.412	1.990	1.990
Secondary	1.629	1.806	2.880	2.880
Higher	644	756	1.390	1.390
<hr/>				
<u>Government Recurrent Expenditures</u>	%	%	%	%
GDP	18,1	19,7	23,4	26,7
<u>MOE Recurrent Expenditures</u>				
GDP	5,0	5,1	6,3	7,2
<u>MOE Recurrent Expenditures</u>				
Government Recurrent Expenditures 26,7		27,9	25,9	26,7

Source: Mission estimates based on data and projections in the 1981-85 five-year plan.

a/ Plan projection: annual growth of 6.5% from 1981 DH of DH 78 million.

b/ Mission hypothesis: zero growth in 1981 and 1982, 5% growth in 1983, 84, and 85.

c/ Mission expenditures with respect to Government recurrent expenditures observed over the period 1973-1980 (1.096).