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*Planning and Mobilization of  
Financial Resources for  
Education in the  
Middle East*

Wadi D. Haddad  
Terri Demsky

*June 1987*

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Education and Training Department

Operations Policy Staff

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PLANNING AND MOBILIZATION OF FINANCIAL  
RESOURCES FOR EDUCATION IN THE MIDDLE EAST

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and  
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## ABSTRACT

A prominent concern of most governments today is how to provide quality education to increasing numbers of people, when financial resources are shrinking. In the Middle East, present educational needs have not been satisfied, and these needs will increase as the population grows at three percent per annum. Present levels of spending on education are already straining government budgets, and government revenues in these countries have reached a plateau due to the drop in the price of oil. Given that prospects for additional budgetary resources for education are dim, governments in the region have been exploring alternative means of meeting their educational objectives. This paper examines three possible courses of action:

- (a) improving the means of allocation, control and monitoring of financial resources for all education, thereby making it more efficient;
- (b) reducing unit costs by improving the efficiency of the education system;  
and
- (c) finding extra-budgetary resources, known as resource mobilization.



## FOREWORD

In November 1986, high-level officials from the ministries of planning, education and finance in eight Arab countries met in Amman, Jordan to participate in a joint World Bank/United Nations Development Programme, seminar on the planning and mobilization of financial resources for education. Four discussion papers were prepared for the seminar which focused on: (i) macroeconomic trends in the Arab world; (ii) allocation, control and monitoring of financial resources for education; (iii) cost control and efficiency measures in the education sector; and (iv) resource mobilization for education. The present paper summarizes the main issues raised in the discussion papers and draws out the most pertinent issues relating to education finance in the Middle East.

Middle Eastern countries have not been able in recent years to continue to increase budgetary allocations to cope with the growing demand for education. While the annual growth in school age population has increased slightly over the past ten years (from 2.9 percent in 1970-1975 to three percent in 1975-1980), the growth in education expenditure has decreased from 11.5 percent to 9.4 percent per annum, respectively. This decline corresponded to a similar decrease in the growth of national income (from 7.1 percent to 6.7 percent over the same periods). Constraints which have led to stagnation in public spending on education are not expected to diminish in the foreseeable future. In fact, the growth in the level of resources flowing to education is expected to decline due to tight budgetary conditions and to competition with other social sectors that are gaining prominence such as health and nutrition.

In this paper, two possible courses of action to resolve the above dilemma are examined. The first calls for mobilizing additional resources for education through cost-recovery mechanisms, and by tapping non-public sources of finance. The second involves improving the use of existing resources, optimizing the allocation of funds within the sector, and reducing unit costs wherever feasible. To improve efficiency requires, first, an improvement in the strategic planning, budgeting and monitoring of funds in the ministries of finance, planning and education; and second, a reexamination of the distribution of funds within the education budget. The reallocation question is particularly relevant as higher levels of education are often favored in the allocation of public resources, and because most of the budget goes to teachers' salaries.

The seminar in Jordan provided participants with the opportunity to exchange views and experiences regarding the scope of education finance issues, and to develop strategies to cope with increasing budgetary constraints. This paper, encapsulating the main ideas raised during the seminar, attempts to disseminate these ideas to a wider audience in the developing world.

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## I. INTRODUCTION

### A. NATURE OF THE PROBLEM

1.01 Middle Eastern countries have experienced significant progress in the educational sector over the past two decades, both quantitatively and qualitatively. However, a quick review of their achievements clearly illustrates that there remain major objectives as yet not fully met.

1.02 In light of rapidly increasing population rates, simply to maintain educational services at present levels will require a greater investment of resources in education. Projections show that the population in the Middle East will grow on average three percent or more per annum between 1980 and 2000, a natural consequence of which is a relatively young population.

1.03 To expand educational services will require even more financial resources. That there is a need to increase school enrollments is clear from enrollment ratios in the region. Less than half of the countries in the Middle East have achieved universal primary education. While post-primary enrollment is significant, further expansion is expected in the coming years, due to the nature of growth of education. The present secondary school enrollment is under 50 percent in most of the countries in the area with a low of nine percent and a high of 78 percent. Those enrolled in higher education in most cases account for less than ten percent of the population between 20 and 24 years old, with the exception of Egypt (16 percent) and Jordan (33 percent). Even in cases where enrollment ratios are high, extending educational services to the remaining marginal groups in the population is the most difficult task and will probably require special and costly measures. Further, the growth of the formal education system involves a gradual shift within total enrollment toward higher, more expensive levels of education which places an even greater burden on the educational budget.

1.04 Improving quality is another objective which countries in the region share. A significant number of teachers are unqualified, and textbook and teaching materials are in many cases not adequately available. The proper input mix is extremely important to educational quality, and increasing teacher training and the availability of textbooks and teaching materials will depend on the resources available to education.

1.05 Present levels of spending on education are already straining government budgets. In fact, in several cases it represents one-fourth to one-fifth of government expenditure. At the same time, government revenues in Middle Eastern countries have reached a plateau, due to slowed economic growth. Gross Domestic Product (GDP) in many of the countries in the region has fallen in the past ten years. For example, Morocco's GDP growth fell from an average of 5.7 percent in the years 1965-1973 to 4.5 percent in the years 1973-1984. During the same time period, Oman's average GDP growth fell precipitously from 21.9 to 6.1 percent.

1.06 Looking toward the future, is there reason to believe that more public resources will become available for education? Even under a scenario of a highly favorable external environment such as strong economic growth of OECD countries, prospects for future economic growth in the region are mediocre due to the drop in the price of oil. Oil-importing countries in the region feel the effects of decreasing oil prices as well since they receive a significant amount of aid from oil-exporters. This will of course result in a continued decrease in government resources. Just to maintain its share of the budget, then, education will have to compete with other sectors for the "shrinking pie." To receive additional resources will be almost impossible.

## B. STRATEGIES AND OPTIONS

1.07 How can countries in the region meet their educational objectives in light of the fact that present allocations to education already take a large portion of government budgets, and that prospects for additional budgetary resources are dim? Three possible courses of action to meet the increased demand by education on public finance are: (a) to improve the means of allocation, control and monitoring of financial resources for all education; (b) to reduce unit costs by improving the efficiency of the education system; and (c) to find extra-budgetary resources for education. This paper will examine these three approaches in the following sections.

## II. ALLOCATION, CONTROL AND MONITORING OF FINANCIAL RESOURCES FOR EDUCATION

### A. BACKGROUND

2.01 Planning, control and monitoring of resources allocated to education highlight the role of the national budget in the formulation and execution of educational policy decisions. Such a role can be analyzed by examining the budget process in individual countries with the following questions in mind:

- (1) Which decisions does the budget take into consideration and render operational by allocating the resources necessary for their implementation? How do these decisions relate to all the other decisions connected with education development? Which important decisions are left out of the budget-discussion process and why? Which decisions remain in the hands of officials responsible for budget-execution?
- (2) How precisely and explicitly do budget documents reflect policy decisions, particularly in terms of expected outcomes and program characteristics, projects and activities contributing to their fulfillment?
- (3) What techniques are employed to estimate the required resources for education and the distribution within the sector? How do these techniques impact on the objectives of educational policy?
- (4) What is the degree of flexibility and the scope of maneuverability that educational officials enjoy during both the preparation and execution of the budget?
- (5) How do we account for discrepancies between approved budgets and actual spending? Between real resources provided for in the budget and real resources actually mobilized?
- (6) To what extent can decisions that flow from the budget be evaluated against the yardstick of educational policies and plans?
- (7) What, in this context, are the limits to and the potential of decision-rationalizing techniques based on the process of formulating and approving the educational budget? What reforms could be introduced to make the budget a more effective instrument in the implementation of educational policy?

2.02 In examining the educational budget process, it should be kept in mind that there is more to educational expenditure than meets the eye. Looking solely at the educational budget when discussing government allocations to education is misleading. This is because the "educational effort" -- the total of real resources going to education -- is not entirely captured in the public education budget. First of all, a certain amount of expenditures on education and training are made by other ministries and

included in their budgets, not in the education budget. Second, non-budgetary resources such as community-financing of education or the income generated from vocational schools which produce saleable items, and even private education are not taken into account in the budget process. These non-budgetary resources add to the amount of resources utilized for education, yet since they are not included in the budget process, it is difficult to ensure their efficient allocation and usage.

2.03 The area of resource allocation and monitoring is very broad and diverse. This paper will only attempt to provide an overview and raise some basic issues as a framework for discussion and examination of country experiences in budgeting, control and monitoring educational expenditures.

## B. ALLOCATION OF RESOURCES AT THE MACRO-LEVEL

### (1) The Budgeting Process

2.04 Allocation of resources to education within the national budget is influenced by three major issues. (A) The first issue is the place that education has among the country's national priorities. Certainly Arab countries continue to place a high value on education, but not as much as they did in the 1970s. Therefore, the education sector is forced to compete more aggressively with other sectors for increasingly limited resources. (B) The second issue has to do with the relative strength of the Ministry of Education vis-a-vis other ministries. Nominally the various government ministries have equal status but in practice this is not the case. To quote J.R. Hough, these "expenditure departments (ministries) will be unequal in their relative bargaining positions vis-a-vis the MOF...in sociological terms, the formal will be overridden by the informal: Individual ministers will have relative strengths and seniorities within the government, relative positions of closeness to the prime minister or President or Head of State and will have widely differing personalities and bargaining powers, all of which will have non-negligible effects on the outcomes." (C) The third issue involves the relationship between central and local authorities which is significant in a number of countries. The issue here is whether allocations for education are made nationally or by region or province. Clearly, national funding gives the central government a significant degree of power not only over the formulation but also over the execution of educational policies. Decentralized allocations, on the other hand, are meant to retain some freedom of decisionmaking and scope for initiative at the local level, sufficiently close to the people that they can reasonably identify with.

2.05 These issues interact during the three stages of the budgeting process, namely, preparation, review and approval. For the preparation of the education budget, in most cases the Ministry of Planning (MOP) provides some basic guidelines to the planning department of the Ministry of Education (MOE). These basic guidelines may include the implications of the national plan for development and also formulas for expenditure. Through an iterative process, the MOE develops a budget which it then presents for review by the Ministry of Finance (MOF) and the MOP. It is here where the hard bargaining begins. Obviously, the MOF is primarily interested in the bottom line -- what the total expenditure will be. Therefore, the various government ministries, including education, must lobby the MOF for resources and in turn, the MOF attempts to extract budget cuts from the ministries.

These negotiations take place both at the staff level and at the ministerial level. It is most important to note that in general, there is no official procedure for preparing and reviewing a budget, but rather it is a political/bureaucratic process. The final approval of the budget is given either by the cabinet or the parliament depending on the political structure of the country. This budgetary process applies more to the development of the recurrent budget than to the capital budget. The latter is more project oriented and not as sensitive to the iterative process of negotiations as the recurrent budget.

2.06 The preceding consultative process, whether formal or informal, usually deals with three types of decisions: extra-budgetary, budgetary and infra-budgetary. Extra-budgetary decisions are generally excluded from the normal negotiating process. On the expenditure side of the budget, an example of an extra-budgetary decision would be the money ear-marked for the repayment of loans received from multilateral or bilateral agencies for educational purposes. On the revenue side, the raising of special taxes or duties whose revenues are ear-marked for education (for example, payroll taxes to finance vocational and technical training) are outside of the normal budget process. The way such resources are used may be subject to budgetary discussion, but not the amounts themselves, since they would be difficult to estimate. In the same way, students who are required to contribute their time as teachers at the end of their studies entail the allocation of real resources to education by a mechanism outside the traditional budgetary negotiating process.

2.07 Budgetary decisions include all those decisions regarding how much to allocate to each item in the budget and so are very much part of the negotiating process. These items are easily identifiable and the allocations to each are clearly stated.

2.08 On the other hand, infra-budgetary decisions concern the latitude given to officials in how the money is spent for each budget item. For example, in some cases this latitude may concern the nature of the activities performed, their timetable, their geographical location (as when an amount ear-marked for building schools carries with it no stipulation as to allocation by region or province), the quantity and description of real resources to be mobilized (numbers and qualifications of new teachers to be recruited), etc. So officials in charge of budgetary execution may enjoy some freedom of reallocation according to the level and nature of expenditure. For instance, the budget in Lebanon is detailed by line and paragraph. Any redistribution between paragraphs within a line item may be decided by the minister, while a reallocation from one line item to another requires a cabinet decision.

2.09 In the end, a budget is worked out which spells out allocations for education. The budget does not always reflect the desires of the Ministry of Education or the Ministry of Planning, particularly if the MOE or MOP has been slow in getting their proposed budget to the MOF. It is usually a compromise between educational requests and national financial constraints.

(2) Allocation to Education

2.10 Financial resources allocated to education vary widely among countries in the Middle East and North Africa as illustrated in Table 1 below.

Table 1: Share of Public Educational Expenditure in GNP and the Public Budget

COUNTRY	YEAR	Total (recurrent & capital)		Recurrent only	
		% GNP	% EXPENDITURE	% GNP	% EXPENDITURE
ALGERIA	1982	4.5	24.3*	4.1	--
EGYPT	1983	4.1	8.9	--	--
JORDAN	1983	5.8	12.5	5.2	16.2
MOROCCO	1983	7.5	22.0	5.4	27.4
OMAN	1981	2.3	4.6	1.9	5.2
P.D.R.Y.	1982	7.4	--	5.9	--
SOMALIA	1982	2.3	6.3	2.0	--
SUDAN	1980	4.6	9.1	4.2	12.6
SYRIA	1983	5.9	12.1	3.2	13.1
TUNISIA	1983	4.5	23.2*	4.1	--
TURKEY	1983	3.4	13.7*	2.9	--
Y.A.R.	1980	6.6	13.7	4.9	22.3

\* = Year 1980

Source: UNESCO Statistical Yearbook, 1985.

The public expenditure on education around 1983 was less than three percent of GNP in two countries (Oman and Somalia), between three to five percent in four countries and over five percent in five countries (7.5 percent of GNP in Morocco being the highest.) Allocations to education as a percentage of the national budget (both recurrent and capital) shows a similar degree of diversity. While the average share of educational expenditure in public budget for all developing countries was around 15 percent, only three of the 11 countries in the region for which data were available were above this average -- interestingly enough, these were the North African countries of Algeria, Morocco and Tunisia, with more than 20 percent of their budgets allocated to education. Of the remaining eight countries, four allocated less than 10 percent to education with Oman allocating only 4.6 percent.

2.11 What are the trends in resource allocation to education? The budget share of public education declined between 1970 and 1980 in most countries of the region, along the same pattern as in other regions of the world, as seen in Table 2 below. With tight financial resources, intersectoral competition for funds made education a victim of budget cuts.

Table 2: Share of Public Education Expenditure  
in the Public Budget, 1965-1980

COUNTRY	1965	1970	1975	1980
ALGERIA	14.8	31.6	--	24.3
EGYPT	--	15.8	--	9.4
JORDAN	9.2	9.3	7.7	12.1
LEBANON	14.6	15.5	21.6	--
MOROCCO	--	16.8	14.3	18.5
P.D.R.Y.	14.1	--	--	--
SOMALIA	--	7.6	12.5	8.7
SUDAN	15.8	12.6	14.8	9.1
SYRIA	12.4	9.4	7.8	8.1
TUNISIA	13.3	23.2	16.4	16.4
TURKEY	19.0	13.7	--	10.5
Y.A.R.	5.1	--	10.0	15.1
AFRICA (excluding N. Africa)	16.0	16.4	15.7	16.4
ASIA (excluding Arab states)	14.2	13.1	12.2	12.7
Developing countries	16.1	15.8	14.5	14.7
Developed countries	16.0	15.5	14.1	13.7

Source: UNESCO Statistical Yearbooks 1974 and 1984.

### C. ALLOCATION OF RESOURCES WITHIN THE EDUCATION SECTOR

#### (1) Major Issues

2.12 Allocating resources among subsectors within education is a complex process that involves four major issues: narrow margin of growth, difficulties of prioritization, uncertainty of budgetary projections and level of allocation. Regarding the first issue, new budgetary decisions open to the ministry of education are wholly restricted to the real growth margin. This is exceedingly narrow in almost every country, which leaves little maneuverability in allocating resources to the various subsectors. The present budget is often based on the previous year's budget. Preparation of the budget always starts with an estimate of items that the ministry will have to pay for (fixed expenditures). This takes into account the expenditures required to maintain the ministry's current activities unchanged: maintenance of school enrollments at their existing level, priority programs and projects, etc. Personnel costs account for most of the fixed expenditures. Fixed routine spending, however, is almost always greater than that budgeted for fixed expenditures. Reasons for this include the need to pay personnel recruited during the current year throughout the whole of the following year; internal promotion of personnel; possible improvements in pay scales, etc. Therefore, in budget negotiations, the

Minister of Education must take account of these possible developments when requesting resources. Otherwise, these additional fixed costs will cut into his ability to make new allocations. Even so, in most developing countries, fixed costs are so great (between 70 to 90 percent) that little maneuverability is possible in any event.

2.13 Second, setting priorities within the sector can be next to impossible when using the traditional approach to budgeting. Ideally, all worthwhile educational programs would be funded. However, educational policy is necessarily subservient to economic policy and it is not possible to allocate resources to all programs and activities. Therefore, it is useful to be able to compare costs of proposed programs and activities as well as the benefits of each. Priorities can then be set accordingly. Unfortunately, traditional methods do not permit the costing of alternative educational programs so that comparisons can be made. Rather, traditional budgets are formulated based on the previous year's budget, which allows for incremental increases in each line item. The traditional approach makes it difficult to see whether any particular educational program is important or efficient; the only information that may be gleaned is whether or not salaries are too high, etc.

2.14 Even if cost-benefit analysis can be carried out, there will continue to be problems of inertia of spending, interest groups who have vested interest in the prevailing patterns of spending, and acquired rights of teachers, students on scholarship, etc., that are not easily given up. Consequently, allocation of resources on the basis of an a priori set of priorities does not provide a workable formula.

2.15 Third, budgetary projections have a significant margin of uncertainty. This margin flows from the accumulated consequences of reliance on inadequate information and over-simplified assumptions. For instance, budget estimates may refer to the following variables:

- enrollment of pupils at all levels of the system;
- application of specific programs or projects;
- routine administration at central, regional and local echelons;
- welfare (grants, boarding accommodation, school meals);
- subsidies (if any) to decentralized public sector institutions and/or private educational establishments.

The enrollment variable involves fixing enrollment targets, estimating the real resources needed (teachers, textbooks, classrooms, etc.) and pricing them. These tasks require information at all levels -- which are often insufficient, unreliable and outdated. They are also based on assumptions which may be too simplistic, such as the use of student/teacher ratios as a means of projecting the number of teachers and their distribution.

2.16 Finally, educational administrators at the local level have very little role in determining how school resources are to be allocated. This is because most public school systems collect and distribute revenue for education in a highly centralized fashion. In general tax revenues are budgeted to the central ministry of education and these funds are then allocated to schools and universities. In order to standardize quality, and since the costs of monitoring, inspecting, and enforcing detailed guidelines for individual schools are likely to be high, the ministry of education sets

norms, such as for the distribution of budgetary allocations between teachers' salaries and other inputs. Often these norms do not match the school's needs or the community's preferences and inefficiencies result. For example, the mix of inputs such as teachers' services and pedagogical materials might be inefficient, but unalterable due to the norms set by the ministry of education. Even in cases of decentralization, a distinction needs to be made between decentralization of budgetary decisions whereby local authorities can make choices, and decentralization of implementation whereby all decisions regarding budget preparation and allocation are made at the central level, but allocations are made by region or institution. Clearly decentralized processing not only gives a better picture of the need for resources, but also allows for the mobilization of local resources for education.

(2) Allocations Within Education

2.17 Allocation of resources across levels of schooling varies considerably among countries of the region, as shown below.

Table 3: Public Current Expenditure on Education:  
Distribution by Level of Education

COUNTRY	YEAR	1ST LEVEL	2ND LEVEL	3RD LEVEL	OTHER TYPES	NOT DISTRIBUTED
ALGERIA	1980	28.5	25.2	17.3	19.8	9.3
EGYPT	1981	68.0	---	32.0	---	---
JORDAN	1983	<---	66.4	32.9	0.7	---
MOROCCO	1983	36.5	44.7	18.9	---	---
SOMALIA	1978	62.4	25.8	---	2.4	8.9
SUDAN	1980	48.0	31.0	20.7	0.3	---
SYRIA	1983	40.5	22.7	33.3	0.2	3.3
TUNISIA	1982	41.2	38.1	19.2	---	1.5
TURKEY	1983	41.5	28.0	22.6	4.6	3.1
L. America Developed Countries	1980	50.9	25.6	23.5		
	1980	36.6	44.3	19.1		

Source: UNESCO Statistical Yearbook, 1985.

Most countries allocate the highest proportion of their education resources to primary education. Expenditure on higher education is about 20 percent of the education budget in most countries. Only in three countries, Egypt, Jordan, and Syria, does spending on tertiary education approach one-third of educational expenditure. While this distribution seems reasonable and not very different from the profile of other regions (e.g. Latin America and developed countries), the picture changes when we note that the distribution of the budget across levels is in no way proportionate to the student population at those levels. Public expenditure per student as percentage of GNP per capita across levels of education clearly favors higher education, as Table 4 illustrates.

Table 4: Public Expenditure per Student as Percentage of GNP Per Capita Major World Regions Around 1980

REGION	Primary	Secondary	Higher	Number of countries
Anglophone Africa	18	50	920	16
Francophone Africa	29	143	804	18
South Asia	8	18	119	4
East Asia and Pacific	11	20	118	6
Latin America	9	26	88	19
Middle East and North Africa	2	28	150	11
Developing countries	14	41	370	74
Developed countries	22	24	49	20

Source: Mingat and Tan.

Expenditure per primary student is exceptionally little and substantially below the averages of any other region. Per student expenditure in higher education is almost 14 times that at the secondary level and 75 times that at the primary level.

2.18 Allocations to higher education cover both the direct costs (such as teachers' salaries and equipment), and living allowances for students. In some countries, such as Algeria and Morocco, student living allowances alone make up almost 50 percent of the entire higher education budget (Table 5 below).

Table 5: Share of Direct Payments to Students in the Education Budget by Level Around 1980

COUNTRY	PRIMARY	SECONDARY	HIGHER
ALGERIA	0.3	9.4	46.3
JORDAN	---	---	32.4
MOROCCO	0.7	3.8	51.5
SYRIA	---	0.3	---
TUNISIA	1.1	2.6	---
TURKEY	2.4	3.7	6.5
OECD Countries	5.2	5.6	13.7

Source: UNESCO Statistical Yearbook, 1984.

This compares to OECD countries which only allocate 13.7 percent of higher education budgets to student subsidies. Governments have discovered that it is most difficult to alter this established pattern of allocations across levels, since university students form a powerful and vociferous force against any such changes.

2.19 The present financing arrangements, therefore, contribute to an allocation of resources in favor of higher education -- the high degree of subsidization boosts the demand for tertiary education. Meanwhile, the financing system is almost unable to adapt to the scarcities of public resources for education. In most cases, routine spending (such as teachers' salaries) is inflexible. Thus, most of the reduction in funds for education reduces expenditure on other categories of school inputs. In fact in most countries of the region, allocations to instructional materials is insignificant, as detailed in Table 6 below.

Table 6: Public Current Expenditure on Education:  
Distribution According to Purpose

COUNTRY	YEAR	Admin.	Teachers	Teaching Materials	Scholar-ships	Welfare Services	Not Distrib.
ALGERIA	1982	14.1	69.1	0.7	4.2	10.2	1.7
EGYPT	1981	<---	81.0	0.6	-	-	18.4
JORDAN	1983	10.0	63.3	6.3	6.3	5.4	8.7
MOROCCO	1982	<---	85.8	0.3	11.6	0.0	2.3
OMAN	1980	16.1	60.3	6.4	8.6	4.4	4.2
SOMALIA	1983	<---	82.2	15.1	...	...	2.8
SYRIA	1983	./.	85.1	2.1	0.4	<---	12.4
TUNISIA	1983	<---	84.9	4.8	1.2	0.6	8.4
TURKEY	1983	<---	88.6	0.9	0.4	4.0	8.1

Source: UNESCO Statistical Yearbook, 1985.

Five countries allocate less than one percent of the education budget to this purpose while the average allocation for developing countries is 3.4 percent. These spending priorities correspond to an inefficient mix of school inputs, since increasing the supply of textbooks appears to be cost-effective in raising student achievement.

#### D. CAN BUDGET DEVELOPMENT BE IMPROVED?

2.20 Traditionally, most countries have used a combination of incremental budgeting and formula budgeting in drafting yearly budgets. Under this, incremental increases are permitted in each line item of the education budget, which is based on such basic formula as student/teacher ratios, etc. The main assumption here is that the existing basis for allocating resources is appropriate and that present programs are to be continued in their current form. The strength of this approach is its stability and predictability; its weakness is the limited extent to which the Ministry of Education is encouraged to justify existing allocations or to eliminate programs that may not be productive. Basically, the incremental approach is output-oriented, focuses more on the past than on the future, tends to be expansive, and ignores educational objectives.

2.21 The traditional approach to budgeting outlined above seemed to work as long as the country's GNP continued to increase. Yet as national economies have begun to contract less resources are available to all sectors, including education, while the school-age population has continued to grow. This has led to the pressure to come up with a more rational budgeting approach which would allow one to determine the efficiencies and inefficiencies of each subsector of education, as well as to reallocate among sectors. Two alternatives which have been proposed are program budgeting and zero-based budgeting.

2.22 In program budgeting, the objectives of educational policy are the driving force behind the allocation of resources to education. Program budgeting analyzes alternative means of accomplishing those objectives, and evaluates the benefits or effectiveness of the budget choice. This approach is more macroeconomic in nature, concerned with broad policy decisions and centralized, top-down decisionmaking.

2.23 There is an element of program budgeting in the formulation of the capital budget. It is normally derived from programs and projects that are analyzed, valued and priced in the national development plans. Investment programs derived from such plans become the basis for the capital budget. In certain countries, like Turkey, the development program is translated into a sliding two-year budgetary cycle: one year an actual budget and the second year a projected budget, which becomes an actual budget in the next cycle and a new year is brought in with a projected budget, and so on.

2.24 On the other hand, zero-base budgeting is a microeconomic approach to budgeting which attempts to transform educational objectives into an efficient operating plan. Zero-base budgeting gives a formalized procedure for establishing the benefits and costs of proposals and for evaluating them against each other so that officials can better set priorities and make choices. Zero-base refers to the fact that yearly budget formulation begins at base zero dollars and requires a total rejustification of every activity from the ground up, the implication being that programs carried out for years will not necessarily be continued.

2.25 There are several problems associated with these rational approaches to budgeting. First there is a multiplicity of conflicting goals. Second, since the relationship between budgetary inputs (and other variables) and educational outcomes is unclear, it is difficult to know how much to allocate within the sector to achieve educational objectives. Third, in order to make cost comparisons of alternative programs to meet the overall educational objectives, consistency in costing is required across programs and activities and between the budget and the accounting systems within the sector. Rational budgeting is only as good as the data it uses. In the end, rational approaches are probably most appropriate for budget cutting -- they produce more awareness of costs, especially long-term costs. In addition, they are able to focus attention on total implications of allocative decisions and provide for wider participation in the budget development process in the case of zero-based budgeting. In fact, these approaches may be best used as part of a multi-year planning process rather than being applied annually.

2.26 The limitations of rational budgeting approaches have led to two contemporary alternatives: program evaluation review and incentive budgeting. Program evaluation review calls for periodic intensive reviews in order to provide direction for long-term resource allocation planning. Incentive budgeting is basically a decentralized budgeting system in which socio-psychological incentives are made explicit and are designed to elicit certain desired behavior, that may be rewarded from a centralized source of funds.

#### E. MANAGEMENT OF RESOURCES

2.27 The implementation of the budget brings up many issues, including those of control, flexibility and accountability. It is clear that the Ministry of Finance wields strong control over the allocation of funds. Disbursement procedures are notoriously cumbersome, time-consuming and extremely regulated. This heavy regulation of financial allocation creates a great deal of problems at the local level because it does not permit managers the flexibility needed during implementation, unless they have access to extra-budgetary resources. No matter how much thinking and planning go into formulating the budget, there are many surprises on the first day of school. For example, a school may have less students than anticipated and therefore would prefer to give up one teacher in order to have more teaching materials. This lack of local control regarding educational inputs can have deleterious effects on efficiency, as discussed above.

2.28 In addition, present systems do not provide for accountability, which also creates inefficiencies. How money is allocated to schools depends on certain formulas which are often exaggerated, since schools would rather have more money than less. This happens because there are no incentives for anyone to spend below the budget.

2.29 So, while the disbursement of funds is under strict control, it is easy to determine whether funds have been spent according to the budget, but not whether these funds were efficiently or effectively spent. This requires monitoring of the budget, not only in terms of spending but also in terms of efficiency and quality indicators.

#### F. MONITORING AND EVALUATION

2.30 The present budgeting system allows for some monitoring, but not enough to influence future budgeting. For example, it compares such items as planned expenditure versus actual expenditure, planned growth rate versus actual growth rate, etc., but these do not capture the quality of implementation. It is equally if not more important to examine how well educational objectives were achieved. Perhaps more funds were spent on a particular program than was budgeted for, but this greatly improved the quality of that program, or alternatively, perhaps all that was budgeted was spent, but inefficiently so.

2.31 Monitoring of educational expenditures is important for two reasons. First, it is essential to know which factors affect educational spending and to what extent, in order for policymakers to manipulate the factors under their control to change patterns of spending. Second, any

rational budgeting requires establishment of a baseline for budgetary projections and costing of educational programs which can only be derived from an in-depth evaluation of expenditures.

2.32 Monitoring and evaluation of expenditures requires good data and a methodology to calculate unit costs. Data have to be collected in the form of parameters and indicators of efficiency and achievement. The problem of devising unit costs involves the selection of the unit and the pricing of the program. Units adopted for costing may vary with the school system. For instance, where the level of wastage in the flow of students is low, it may be convenient to take the student-year as a unit of costing. But where wastage is significant, it may be more appropriate to take costs per completed students (or graduates). Such a choice of unit costs may reveal that an apparently cheaper form of education or training is actually the more expensive.

2.33 The issue of pricing is easily illustrated when trying to cost programs of technical training. For example, for a person being given training on the job in a factory, it is difficult to decide whether at any point in time he is being taught or is taking part in production. Further, people may be trained on machines which are used at other times for production. Instructors in these factories may also be supervisors and foremen. How to assign costs in these cases is extremely complicated.

2.34 Once formulated, the costing of educational programs will allow us to better monitor and evaluate budgetary spending. First, it will help to identify areas of efficiency and inefficiency. For example, primary schooling in different regions of the country may be compared to determine where the unit cost is lowest and what factors are responsible for that. Consequently, the experience may be replicated by a manipulation of these factors in other regions. Second, it will allow comparisons with other countries. Although these international comparisons are made more difficult because of the difference in currency exchange rates, they can be useful in offering insights into more efficient ways of providing educational services.

2.35 Finally, it is essential that the information gained in monitoring and evaluation be fed back into the budget development process. Though this appears obvious, it is not often the case because monitoring is generally the realm of one department of the ministry of education, while budgeting is done by another.

III. COST CONTROL AND EFFICIENCY MEASURES  
IN THE EDUCATION SECTOR

A. NATURE AND SCOPE OF THE ISSUES

3.01 The need to reduce unit costs by improving the efficiency of the education system is obvious in light of the fact that if education systems are to grow at the present rate and under the same structural and managerial conditions, they will require funds that will be beyond the financial capabilities of most countries in the region. Internal efficiency is concerned with the extent to which particular educational goals are achieved with a given input of resources; the goal is for students to flow through the system and graduate with a minimum of waste. Wastage in the flow of students is manifested quantitatively in the form of repetition and dropout.

3.02 With regard to repetition, Table 7 indicates some improvement between 1970 and 1980. In only one country (Egypt) did the percentage of repeaters increase between 1970 and 1980. However, some countries continue to experience exceptionally high repetition rates at the primary level (e.g. Morocco and Tunisia). This is partly due to the promotion policies from one grade to another but mainly to the bottlenecks between the first and second cycle. For instance, in Morocco, 50 percent of the students in the last grade of primary education are repeaters. Such figures indicate that the number of children admitted to primary school in Middle Eastern countries could have been increased about 10 to 15 percent with no increase in cost had repetition remained minimal.

Table 7: Percentage of Repeaters in Primary Education  
Around 1970 and 1980

COUNTRY	1970	1980	DIFFERENCE
ALGERIA	12.5	11.7	-0.8
EGYPT	4.5	7.9	+3.4
JORDAN	6.3	3.2	-3.1
MOROCCO	29.8	29.4	-0.4
SYRIA	10.9	8.1	-2.8
TUNISIA	29.2	20.6	-8.6

Source: UNESCO.

3.03 Waste is also the result of dropping out from school. Table 8 indicates wide variation in the proportion of a cohort enrolled in first grade reaching Grade 4, the point at which permanent literacy may have been achieved, and Grade 6 -- the completion of the primary cycle. While there was general improvement in the survival rates, certain countries (Egypt and Sudan) experienced a decline. Around 1980, except for Jordan, between 15 and 40 percent of the cohorts did not reach Grade 6.

Table 8: Survival Rates in Primary Education for the Cohorts Beginning Their Studies Around 1970/1971 and 1980

COUNTRY	Percentage of the cohort reaching grade:			
	GRADE 4		GRADE 6	
	1970	1980	1970	1980
ALGERIA	92	92	67	77
EGYPT	88	73	78	64
JORDAN	85	100	71	97
MOROCCO	75	84	67*	80*
OMAN	75	82	55	60
SUDAN	92	78	75	69
SYRIA	94	93	83	87
TUNISIA	77	91	56	78

\* = Grade 5 (end of primary cycle).

Source: UNESCO.

3.04 In the above sections we examined repetition and dropout separately. Needless to say, they are interrelated. Countries that restrict repetition force dropping out. Moreover, the issue of bottlenecks in the progression from one cycle to another leads to both repetition and dropout. It is clear from Table 9 that the progression rates from the primary to the secondary level is below 50 percent in half of the Arab countries reported. In most cases pass rates are low which leaves failures with one of two options: repeat or drop out. Even of those who pass there is not always space for them to go into the next cycle, so they too drop out.

Table 9: Progression Rates From Primary to Secondary Levels

COUNTRY	PERCENTAGE
ALGERIA	55
EGYPT	83
OMAN	86
P.D.R.Y.	46
SOMALIA	80
SUDAN	44
SYRIA	68
TUNISIA	30
TURKEY	55
Y.A.R.	85

Source: World Bank Comparative Education Indicators.

3.05 To assess the combined effect of both repetition and dropout, educational wastage is indicated by input/output ratio, expressed as the relationship between the number of pupil/years invested in a completer and the normal or prescribed duration of the cycle. Table 10 shows results of calculations for the two cohorts entering primary school in 1970 and 1980. Clearly there is a general fall or a leveling in the value of this indicator over time. However, the wastage in pupil-years continues to range between 19 percent for Jordan and 60 percent for Morocco and Oman.

Table 10: Input/Output Ratio in Primary Education Around 1970 and 1980

COUNTRY	1970	1980	DIFFERENCE
ALGERIA	1.5	1.3	-0.2
EGYPT	1.2	1.4	0.2
JORDAN	1.3	1.1	-0.2
MOROCCO	1.8	1.6	-0.2
OMAN	1.6	1.6	0.0
SUDAN	1.3	1.2	-0.1
SYRIA	1.2	1.2	0,0
TUNISIA	2.0	1.5	-0.5

Source: UNESCO.

3.06 Inefficiencies in student flow are also accompanied by inefficient use of teachers and student space. Student/teacher ratios (Table 11) at the primary level range between 25 and 39 (except for Lebanon which has a low coverage of 19 students per teacher) which are clustered around the median for developing countries. At the secondary levels the student/teacher ratios are lower due to the deployment patterns of teachers and their lower workload. The ratios vary widely between 11 in Turkey and 38 in Morocco, and fall in the middle range for developing countries. At both levels there is room for improvement particularly in the cases of countries where the student/teacher ratios are comparatively low.

Table 11: Number of Students per Teacher (Student/Teacher Ratio) Around 1980-1983

COUNTRY	PRIMARY	SECONDARY
ALGERIA	37	26
EGYPT	34	19
JORDAN	32	21
LEBANON	19	--
MOROCCO	31	38
OMAN	25	15
P.D.Y.R.	25	20
SOMALIA	29	22
SUDAN	34	16
SYRIA	35	21
TUNISIA	39	30
TURKEY	31	11
Y.A.R.	38	20
<u>DEVELOPING COUNTRIES</u>		
RANGE	17-77	8-48
MEDIAN	35	22
QUARTILE DEVIATION	7.0	3.5

Source: World Bank Comparative Education Indicators.

3.07 Likewise, there is wastage in the utilization of space when physical facilities are assigned to classes that are smaller than the planned norms, or when facilities are used only part of the time during which a school can be opened. Such inefficiencies are prevalent in rented facilities or in schools built by villagers which are not efficiently designed. Small classrooms cannot accommodate large classes and consequently student/teacher ratios are small. For instance, in Jordan the average rented space is 15 percent less than the corresponding space built by the Ministry of Education, and in Lebanon rented classrooms in the rural areas are sometimes less than 50 percent of the norm for government schools.

#### B. STRATEGIES TO IMPROVE EFFICIENCY

3.08 Internal efficiency can be improved in a number of ways. Some of these measures do not require significant investments of capital but are achievable through administrative action. This paper considers three areas of efficiency improvement:

- flow of students
- utilization of human resources
- utilization of physical facilities

##### (1) Flow of Students

3.09 Efficiency in the flow of students -- the input/output ratio -- can be improved by reducing rates of repetition and dropout. First, promotion policies must be carefully examined so that when rates of repetition are unreasonably high, they can be reduced, particularly in the early grades, either by controlling the entry at each level, or by modifying the standards for promotion to reflect the abilities of the pupils. A review of research on various promotion practices provides no evidence that repetition is more effective than promotion, or that repetition practices improve either academic standards or homogeneity of classes. Rather, repetition has a negative effect on a pupil's attitudes and his view of himself. Second, repeaters may be grouped in special programs with appropriate curricula, instructional materials, and methods. Third, because the real issue is not promotion but prevention of failure, the ultimate solution lies in improving the school environment to reduce both repetition and dropout. Fourth, the causes of dropout must be identified and steps for improving the demand for education and for strengthening the holding power of the school need to be implemented.

3.10 There are policy attempts in the region to improve student flow. For instance, Jordan, Morocco and Egypt have taken measures to restrict repetition. In Jordan repetition is allowed no more than twice in the first nine years of schooling and only once in secondary school, and promotion is automatic in the first three grades unless attendance is unsatisfactory. Likewise, Morocco introduced a reform whereby class repetition is limited to a total of two repeated years during the 5-year primary cycle and two repeated years during the 7-year secondary cycle (later modified to one year in the upper secondary cycle.) At the tertiary level, repetition is allowed once during the first two years and once during the latter two years; repetition will be further reduced through introducing the credit-hour

system. During a second phase Morocco will be instituting mandatory rates of promotion, coupled with a program of remedial instruction for students with learning problems. Both Jordan and Morocco are developing a significant program of testing for both diagnostic and evaluation purposes to curb unnecessary repetition. In Egypt repetition is permitted in Grades 2, 4 and 6. After one repetition in Grades 2 and 4 promotion is automatic. At the 6th grade level, however, students who fail the Primary Certificate Examination are not permitted to repeat; they have to enroll in a private school for another chance.

3.11 Measures to curb dropout have ranged between enforcing compulsory education and general improvement of the quality of teaching and guidance. Jordan, for example, has taken steps requiring compulsory school attendance up to age 16 and adherence to legal age for marriage and employment. Egypt on the other hand, has introduced an experimental program to prevent students from dropping out. The program has two facets: (a) providing specialized training classes -- prevocational -- for students who might otherwise drop out, and (b) contacting families of dropouts to collaborate with them on bringing these students back into the schools.

## (2) Utilization of Human Resources

3.12 Because teachers' salaries constitute 80 to 90 percent (sometimes even higher) of recurrent educational expenditure, student/teacher ratios (S/T ratios) must be maintained as near the acceptable norms as possible. Student/teacher ratio depends on the following variables:

$$S/T \text{ ratio} = \frac{\text{average class size} \times \text{weekly teaching load}}{\text{weekly class periods}}$$

3.13 Clearly the average number of students per teacher equals the average class size only if the weekly class periods are equal to the teacher's weekly workload. This is often the case at the primary school level. However, at the secondary and university levels weekly class periods are more than (sometimes double) the teacher's weekly teaching load. In this latter case, the S/T ratio is much less than the average class size.

3.14 It can be easily seen from the above formula that in order to increase S/T ratio three measures may be taken. First, where the average load of a teacher is light, it can be increased without adversely influencing his effectiveness. Consideration, however, should be given to conditions of employment and salary structure. Second, the weekly class periods may be decreased as some countries have done under the double shift system. Here again, consideration must be given to threshold instructional time, and quality of teaching. The third measure, increasing class size, remains the most important variable. For instance, a Chilean study based on actual budget data shows that an increase of 15 percent in average size of the class would produce a reduction of 5 percent in the annual education budget, contributing significantly to the cost of a major educational reform. Within certain limits, an increase in the size of the class does not imply a deterioration in the quality of education.

3.15 A review by World Bank staff of pertinent literature and research findings challenged the notion that a decrease in class size implies improvement in educational quality. In fact, some studies have associated larger class with better performance by students. Similarly, a decrease in the size of the class does not guarantee an improvement in the social environment of learning. Despite evidence to suggest that very small classes (15 students or fewer) can have an important positive affect on student achievement, variation in the size of the class within a range of 20 to 40 makes little or no difference in average achievement.

3.16 As mentioned earlier, student/teacher ratios can be improved in most Arab countries by simply increasing class size. It should be noted, however, that in some countries class size is already large, as in the case of Egypt where the average class size at the primary level is about 60 and the problem is that of overcrowding. Similarly in Yemen AR the class size at the primary level is about 50 and the government does not think that there is much room for further saving in that area. What is striking, though, is that in some other countries the student/teacher ratios have dropped dramatically. For instance, in the case of Jordan small schools built in rural areas and unsatisfactory rented schools in the urban areas have contributed to a lowering of student/teacher ratios (Table 12).

Table 12: Student/Teacher Ratios and Average Class Size in Jordan

Level	Students Per Teacher		Students Per Class Unit	
	1974/75	1983/84	1979/80	1983/84
Primary	34.4	31.6	36.2	31.4
Intermediate	19.9	21.2	30.4	29.8
General Secondary	22.7	20.7	37.8	33.0
Vocational Secondary	17.9	19.0	31.3	27.6

Source: World Bank Documents.

3.17 Similarly, student/teacher ratios in Turkey have been declining and are below the MOE's own norms and standards. In 1984/85 student/teacher ratios were 31:1, 23:1 and 12:1 at the primary, middle and secondary levels respectively, while the norm for both primary and middle schools was 40:1. A gradual improvement to reach the norm by the year 2000 would produce savings equivalent to nine percent of projected recurrent expenditure between 1987 and 2000.

3.18 Raising the teaching load is a highly sensitive issue and is always resisted by teachers. Consequently, no reported attempts have been made to improve the student/teacher ratio by increasing the teaching load except in the case of Morocco where a decision has been made to increase the minimum teaching hours of university faculty by an average of 20 percent. Likewise, no attempts have been made to decrease the weekly class hours to save on teachers.

(3) Utilization of Physical Facilities

3.19 The creation of student space for expansion of education involves high capital costs. It is, therefore, important to maximize the use of available facilities before adding new places to serve the same area. Physical facilities are well utilized if first, they are used most of the day, and second, they are used to the capacity they were built for.

3.20 In order to improve the efficiency of utilization of facilities two measures may be taken:

- good architectural planning based on student numbers, curricula and methods of teaching, to determine the need for different types of facilities; and
- good scheduling of classes and subjects (e.g. intensive rotation, staggered scheduling) to optimize the use of classrooms and facilities, such as laboratories and workshops.

3.21 Improvements in the occupancy rates of physical facilities require school location planning that takes into consideration population density and desired participation rates to determine the planned school size. School location planning is widely used now in the region. In Lebanon, for instance, the government in the early 1970s conducted a national program of school planning, the result of which was a map of highly efficient and consolidated schools to be built over the next decade. Similarly, in Egypt, the United States Agency for International Development is supporting a large construction project (about 400 schools) based on school location planning. In Yemen A.R. the Educational Research and Development Center will conduct a large school mapping exercise in 1987.

3.22 In areas of high population density, double shifts can increase the use of facilities and, possibly, improve the effective student/teacher ratio without a commensurate increase in costs. The application of double shifts takes various forms: two sessions a day, attendance on alternate days, and staggered and overlapping school terms to enable three groups to use facilities designed to accommodate two groups. Double shifts, generally, result in fewer hours of class time or an extension of the time spent in a particular grade. This technique can be carried to extremes, as in those countries in which the use of three shifts is widespread. It must be admitted that there may be a loss of efficiency in learning, although recent findings in El Salvador indicate that the performance of students in rural schools with a double session was superior to that in schools with a single session. Double shifts may also affect the child's life inside and outside the school. Second and third shifts, moreover, tend to be viewed as inferior and less formal than the "regular" morning shifts. These and other

drawbacks may, however, be offset by the resultant gains in education opportunity. Because of their implications for the design of schools, various ways to improve the use of facilities must be worked out, whenever possible, at the planning stage.

3.23 Multiple use of facilities has exclusively taken the form of multiple shifts in the same day. For instance, Egypt uses double and triple shifts extensively. Yemen A.R. uses double shifts widely in primary schools and is likely to extend this practice to the preparatory and secondary levels. In Jordan, the use of double shifts is, as expected, most common in urban areas at the primary level and to lesser extents at the intermediate and secondary levels. In 1983/84 about 27 percent of primary, 17 percent of intermediate and nine percent of general secondary students in Jordan attended second shift classes. For students in urban areas, however, second shift class attendance accounted for about 40 percent of primary, 26 percent of intermediate, and 10 percent of general secondary enrollments.

3.24 In areas of low population density where pupils within an acceptable range of distance from school are not numerous enough to fill individual classes, student/teacher ratios and the use of space can be significantly improved by structural changes, such as biennial intake, multigrade teaching, and nuclear-satellite school networks. In biennial intake, entry into the first grade occurs every other year; thus, in a six-year primary school system, only three classrooms and three teachers are needed. In multigrade teaching, children of different ages and grades are grouped in one room to be taught by the same teacher. Grouping may involve only two adjacent grades or, in the case of the one-teacher school, all children in all grades. Such a system creates a new teaching environment and may benefit from the use of student monitors to assist the teacher with the younger children. A nuclear-satellite system involves schools of lower grades distributed in lower populated areas. These schools feed into more central schools that offer complementary grades (e.g. grades 5 and 6).

3.25 Of these methods, biennial intake is probably the most widely applicable. A nuclear-satellite system requires considerable administrative control and boarding or transport facilities as well. Despite evidence to suggest that multigrade teaching can be as effective academically as single-grade teaching, its success depends largely on the quality, dedication, and specific training of teachers. Biennial intake requires no such administrative adjustments or additional qualification of teachers. Despite that, only multigrading teaching is used in the region and, on a limited scale, countries like Jordan and Lebanon have been allowing multigrade teaching in rural areas where neither facilities nor student numbers justify full primary schools.

#### (4) Combining Efficiency Measures and Learning Quality

3.26 Because efficiency implies obtaining maximum output, both in terms of quantity as well as quality, at a minimum cost, it is important to combine techniques for improving the quantitative efficiency and the efficiency in learning into a comprehensive plan. To maximize the flow of students through the system, it is necessary to identify and probe bottlenecks that exist at various points and examine the effects of removing them on costs and the quality of learning. For instance, improvements in rates of repetition and dropout typically require improved and upgraded

performance by teachers, better instructional materials, and increased and improved physical plant and equipment. These measures, by themselves, may increase the unit cost per student. But the gain from a reduction in waste should compensate for the increase in unit cost. Techniques for improving quantitative efficiency, therefore, will normally release enough resources to finance improvements in the efficiency in learning. This, in turn, may contribute further to quantitative efficiency. Increasing resources will not, however, automatically improve the quality of learning. The allocation of the same quantity of resources to one type or configuration of education inputs -- curricula, teaching styles, teachers, instructional materials, mass media, preschool factors, and so on -- will not produce the same result as allocation to another type or configuration. The search must be conducted in each particular situation for a cost-effective combination of inputs to produce an expected educational attainment at an incremental cost that is comparable to gains from improved efficiency.

#### IV. RESOURCE MOBILIZATION FOR EDUCATION

4.01 As countries attempt to meet educational objectives in the face of limited national resources they are compelled to mobilize extra-budgetary resources. Additional resources may be raised and channeled through publicly-administered institutions or through privately-administered institutions. In the first case, publicly-administered institutions gain access to greater public financing through taxation. This includes both payroll and ear-marked taxes. Publicly-administered institutions may also mobilize resources through private means such as user fees and student loans, income-generating schemes, community financing schemes, and the participation of industry. In the second case, privately-administered institutions such as private schools can bring additional resources to education. What follows is a brief description of these options with some illustrations from Jordan, Egypt, Sudan, Lebanon, Algeria, Yemen Arab Republic, Morocco, Tunisia and Turkey.

##### A. PAYROLL TAXES

4.02 This includes any taxes levied against private industry which fund technical and vocational training programs. For instance, in Tunisia there is a vocational training tax of two percent of payroll on all public and private companies, which they pay directly to the Ministry of Finance. A significant portion of this is returned to state organizations which provide training. In theory, up to 100 percent of the tax paid in one year by a company is reimbursable the following year if the company carries out its own in-company training or takes on apprentices. In reality the reimbursement is normally between 50 and 80 percent.

4.03 The Office de la Formation Professionnelle et de la Promotion du Travail (OFFPPT), which provides vocational training in Morocco, is funded through a vocational training tax levied on all private companies. The tax is one percent of annual payroll. If the amount of tax levied during the year is insufficient to meet the agreed budget needs of the OFFPPT, the shortfall is covered from central government funds. The payroll tax funds cover recurrent costs only; capital expenditure on buildings and equipment come from central government funds.

4.04 Along the same lines, Turkey is introducing a one percent tax for taxpayers and corporations under a new Apprenticeship and Vocational Training Law passed by Parliament in May of 1986. The Parliament of Jordan is also considering a law which would impose a one percent tax for employers to cover training costs, which would be rebated in cases where the employer is already providing training.

##### B. EAR-MARKED TAXES

4.05 This includes any government taxes which are dedicated to education and training. This scheme is not widely used in the Middle East. Only Jordan uses ear-marked taxes extensively to finance educational services. There are 171 municipalities in Jordan, each of which has a two percent tax assessed against the annual property rental, which is ear-marked for primary, secondary and vocational education. This money is extra-budgetary and can be used at the municipality's discretion for

teacher salaries, construction of classrooms, maintenance of schools, etc. In 1985 about 2.9 million dinar was collected, which accounted for about three percent of general education's operating budget. In addition, one-ninth of a nine percent special surcharge of customs charges is dedicated to university education. Further, over the last ten years there has been a great number of smaller fees for activities such as notarizing documents, stamps for legal documents, etc., which have been instituted. A percentage of these fees goes to the universities as well. In all, these special taxes provide about one-half of the operating expenses of the universities (capital and recurrent expenditure).

### C. USER FEES AND STUDENT LOANS

4.06 User fees entail any fees paid for tuition at the primary, secondary and higher education levels, as well as room and board fees at university. Almost every country in the region has instituted some type of cost recovery scheme, but in a tentative way. Student loans allow individuals to borrow against future earnings. This measure is usually introduced to compensate for lowering or eliminating scholarships or for imposing tuition fees. Understandably, some students cannot afford university education without being subsidized in some way, which underlines the importance of student loans. Student loans are not widely used except in Jordan and Turkey.

4.07 In Algeria, education is basically provided by the government, with only a small symbolic fee for textbooks charged. At the university level, Algeria is rationalizing the awarding of fellowships. Until now, most university students received fellowships, but recently the provision of fellowships has been more selective and is awarded according to socio-economic status and academic achievement.

4.08 Similarly, education in the Yemen AR is free, guaranteed by the constitution. Still, the government has begun to call on parents to share the cost of specific items of expenditure. At all levels, there are incidental fees for such things as textbooks, examinations, certificates, and registration. These measures should make a small contribution to the education budget. For example, at the primary level, fees in 1985/86 would represent three percent of teachers salaries, with 100 percent compliance. The Government intends to raise these fees progressively to recover more fully the cost of these items, and, eventually, at the post primary level, to recover part of the actual cost of education, since the constitutional provision is deemed to apply to primary and preparatory levels only.

4.09 In Tunisia, parents pay for all learning materials, such as textbooks, copy books, pencils, etc. They also pay for transport since there is no organized school bus system. The same applies to public school students in Lebanon. However, about half of the population is already paying the full cost of education in private schools.

4.10 Education in Morocco until now has been free at all levels. However, under a recent sweeping reform aimed at cost reduction, cost recovery and improved efficiency in education, Morocco has decided to impose registration fees in all of higher education. In addition, scholarship allowances for university students both in Morocco and in foreign countries have been reduced by 50 percent in some cases. In the future, scholarships

will be made available only to those students who really need them, not to all university students. The reform also requires that higher rates be charged for room and board at university, and that boarding in university facilities be reduced.

4.11 In Turkey, tuition fees in universities are being introduced gradually, to help the population become accustomed to paying for university education. Fees were first charged in the academic year 84/85, and were doubled in academic year 1985/86. Currently they cover about six percent of the recurrent budget. The limit to fees at university, set by edict, is 20 percent of recurrent costs. The current fee structure comprises a scale from TL 100,000,000 to TL 40,000, depending upon the particular field of study. At the same time that tuition fees were instituted in Turkey, student loans were introduced through the Student Loan Organization (SLO). The SLO is a state-owned credit entity, empowered to make loans for a range of socially beneficial expenditures, such as student fees. All university students are eligible for such loans. The rate charged to students is nominal, and there is therefore a very considerable subsidy in loans from the SLO. In technical training, the Ministry of Industry provides short-term in-service training for employees in both the private and public sectors through SEGEM (Industrial Training and Development Corporation). Until recently this training has been free, but the Ministry has now begun charging fees to cover half the expenses of the training.

4.12 In Jordan, all levels of public education have voluntary tuition fees (VTF). This was instituted ten years ago and began with a modest fee for primary education of about half a dinar (\$1.50). Presently the rates are as follows: Primary (grades 1 - 6), JD 3; preparatory (grades 7-9), JD 4; secondary and vocational, JD 6; community colleges, JD 15; and vocational training centers, JD 20. Students judged by the teaching staff incapable of paying are exempted, up to a maximum of 15 percent. The effective collection rate of VTFs is between 86 to 88 percent. Of the funds collected, 35 percent goes to the Ministry of Education (MOE) which uses the money for land acquisition and the building of schools. The remainder of the funds are kept by the school as extra-budgetary resources. This comes out to about 2.6 percent of the general education operating budget. At the higher education level, both community colleges and universities charge tuition fees (per credit hour). Tuition fees cover about one-third of capital and recurrent expenditures of the universities. However, close to one-third of university students are on scholarships funded by various government agencies, principally the MOE and the Ministry of Defense (MOD). In fact, the MOD along with the police have contracted with Mu'ta University to educate candidates for military and police service at the annual rate of JD 3,000 per student. Mu'ta will soon open its doors to civilians.

4.13 Both Jordan University and Yarmouk University offer zero interest needs-based student loans. The Student Financial Assistance Offices administer the loan program as well as offer work-study programs and grants to those in particular need. Last year the Jordan University Student Financial Assistance Office had 90,000 dinars available for loans. At that University, student loans are limited to 70 percent of tuition fees, so students must finance the remaining 30 percent as well as room and board fees. At Yarmouk University, students may borrow up to double the tuition fees each academic year. Yarmouk also offers emergency loans which must be paid back the semester following when the loan was made. There are liberal

repayment schedules at each university. Jordan University allows students to repay in monthly installments of JD 10 per month after a two year grace period, or six months after the student begins working, whichever occurs later. Yarmouk University requires that repayment begin within six months of graduation or four months after the student finds a job, whichever occurs later. In the case of Jordan University, since 1963 about JD 768,600 have been paid out in student loans, of which 97,000 has been repaid. Though the repayment schedule for the loans is not entirely clear, it is obvious that a fair amount of loans are going uncollected. There are mechanisms in place to make collection, but the authorities have not yet vigorously pursued collection. A recent World Bank report estimated that if all scholarships were replaced with student loans, the university revenue could be increased by eight to nine percent.

#### D. INCOME-GENERATING SCHEMES

4.14 This applies mainly to individual vocational training institutions which are able to defray some of the costs of training through income-generating projects, but could be extended to general education. Many Middle Eastern countries have used such schemes and some have found very innovative ways to generate additional funds.

4.15 The Ministry of Social Affairs (MOSA) in Egypt provides basic skills training for disadvantaged groups, including school drop-outs and the handicapped. To carry out these responsibilities, the MOSA operates 40 vocational training centers (VTCs) for basic skills, providing training to some 5,000 school drop-outs and young adults each year, as well as 52 facilities for the rehabilitation and training of the handicapped. In addition, MOSA provides training programs to support the development of artisanal and small-scale industries based on family units (the Family Enterprise Program - FEP) in rural and urban areas. For this, MOSA has a network of over 2,300 training centers and programs situated on the premises of voluntary social organizations at MOSA village and district social centers and in VTCs. The FEP is a combined effort between voluntary agencies and the central government -- which essentially split the costs of such programs -- to improve the income generating capacity of poor households by providing them with appropriate training. In 1982, the MOSA adopted a policy of shifting the financial burden for basic skills training such as those mentioned above, to the governorates, voluntary societies and VTCs. These local organizations are expected to finance the full costs of materials and the costs of bonuses and incentive payments to instructors out of revenues from the sale of products they make. As this has been quite successful the MOSA has been able to reduce its central training budget. A further testament to their success is that the VTCs have an adequate number of well motivated instructors and have sufficient funds to procure training materials, in addition to providing training in skills required in the local market.

4.16 In Turkey, many vocational and technical schools produce goods which they then sell, either to the MOE or to the public. They are able to purchase the inputs for their production work with the help of "revolving funds". The term revolving funds refers to money which the MOE makes available to vocational and training institutes. In 1985, a total of 520 Revolving Funds (RFs) were in operation within the MOE, the majority located in industrial schools and vocational schools for girls. The capital on

these RFs is in general very small, around TL 50,000 or roughly US\$100, but some have a capital as high as TL 25 million (roughly US\$50,000). The amount of money revolving can be as high as TL 130 million in some centers. The MOE's Directorate of RFs monitors financial status of all RFs on the basis of monthly financial statements. Profits represent 15 to 20 percent of the sale value of products manufactured in the centers. Until recently profits were returned to the Ministry of Finance, or could be reinvested in additional equipment with the authorization of the MOF. However, a new law appears to provide some flexibility in the way profits are being used to finance both investment and recurrent expenditures. This is intended to encourage more income-generating schemes. Universities in Turkey also have access to revolving funds, which they use, for example, in consulting work. In addition, the university hospital, which is run and managed by the university, generates a significant profit which is reinvested in equipment and other investments. Clearly, revolving funds can only work well in an entrepreneurial environment and where the funds are handled efficiently by the institutions.

4.17 In Jordan, the Vocational Training Corporation (VTC), a parastatal organization, provides vocational and technical training. The VTC is able to generate income by working on civil works projects, such as constructing buildings or building furniture. The VTC bids along with other private businesses and distributes the work amongst its 15 centers. Similarly, vocational training centers in Morocco undertake contract work in the vicinity of the school. In practice, this has largely entailed the maintenance of municipality buildings.

4.18 In Tunisia, some vocational training centers finance up to five percent of recurrent costs through earnings from income-generating schemes, mainly through selling their skills. An interesting initiative was undertaken by one vocational secondary school which not only produces saleable items but also rents out equipment to local industry.

#### E. COMMUNITY-FINANCING SCHEMES

4.19 This refers to any contribution made by local groups at the primary, secondary or university level, which lessens the financial burden of the government. Community financing may take many forms such as raising money for textbooks, providing housing for teachers, or actually participating in the construction of classrooms.

4.20 Community financing in Turkey is primarily channeled through Voluntary Associations (VAs) which exist at all levels of education, but are concentrated at the primary and secondary level. They are made up of parents and community members who raise funds for schools in their areas. In nonformal vocational training (NFVT), VAs raise funds which are used to finance the training institutions. Trainees contribute up to TL 6,000 per course to these Voluntary Associations. Even if one out of four trainees does not contribute, it is estimated that TL 3 billion are generated through Voluntary Associations, or 20 percent of the MOE recurrent budget devoted to nonformal education and training in 1985 (TL 15.2 billion).

4.21 Likewise, voluntary societies in Egypt play an important role in the promotion of development programs, particularly the development of the Family Enterprise Program (FEP). These autonomous societies are funded in approximately equal parts by the Ministry of Social Affairs (MOSA) and by charitable contributions and donations from members. The societies operate at local, regional and national levels to promote the interests of particular groups, such as participants in the FEP, village cooperatives, women's groups, the blind and deaf associations and other handicapped groups. In cooperation with the relevant MOSA department at national and regional levels, the voluntary societies assist in the development of appropriate training programs and the marketing of products from vocational training centers and the FEP.

4.22 In YAR, the Local Development Councils (LDCs) -- a collection of community groups -- contribute to classroom construction. From 1978 to 1980 some 2,800 primary school classrooms were built through their predecessors, Local Development Associations (LDAs). More recently, the government has begun to contribute some funding to the Local Development Councils, from money which it collects from the Zakat tax. In addition to building classrooms, these community groups help in the transport of furniture and books to schools, and sometimes have contributed to the payment of teachers. There is a problem, however, in the lack of cooperation between the community groups and the Ministry of Education (MOE). The MOE has not always granted teachers and books due to lack of financial resources. At the same time, schools built by the development organizations have not always corresponded to the standards set by the MOE.

4.23 In Jordan, communities which would like to have a school but are not scheduled to have one provided by the MOE can take the initiative and borrow money to build one. The Cities and Villages Development Bank (CVDB) provides such loans for school construction, as well as for other community projects. The community can apply to the CVDB and if it is found credit-worthy, the loan will be made upon MOE approval. Upon construction, the MOE will staff the school and will pay half of the interest and principal. The municipality or village pays the other half within 10 years or 15 years respectively. There were 195 loans in 1985, totalling about 2.9 million dinars. In 1986, the MOE share of loan repayments was JD 568,500, covering 584 loans made from 1972 through 1985. Most of these community-financed schools are very small, with low student/teacher ratios. However, the advantage of these schools is that they permit many girls who would be prohibited from attending a distant school to gain an education.

4.24 In Lebanon, community-financing is enforced by the government. In the 1970s, a program of school consolidation at the primary and intermediate levels was instituted, which requires that municipalities and parents provide land before a school can be built. Each municipality approaches this requirement in a unique way. Parents may simply contribute money to buy the land, or someone will donate a significant plot of land, and the parents will contribute to buy up surrounding land.

## F. PARTICIPATION OF INDUSTRY

4.25 Industrial participation occurs mainly in vocational and technical training. This category includes any payments made by employers for training of their personnel when provided by the state. It also includes private sector provision of practical experience for students of public training schools, and any supplies, materials, land, furniture, buildings, or expertise that the private sector provides to public institutions for training.

4.26 The Vocational Training Center (VTC) in Jordan, a parastatal organization that provides vocational and technical training, shares the cost of this type of training with employers in three ways:

(1) Apprenticeship program -- The VTC offers three days of theory per week in training centers, students then spend three days gaining practical experience in sponsoring companies.

(2) Dedicated training -- Interested employers build centers next to their firms to train people for their employees only, and the VTC helps to structure the training and provides the instructors. In this way, training can be provided at no capital cost to the government. There are presently 10 such centers in existence, and more are in the works.

(3) Training upgrading -- A firm can ask that the VTC provide upgrading training for its employees, either in VTC centers or in the firm, and the VTC charges them for the service.

4.27 In Egypt, the Productivity and Vocational Training Department (PVTD) provides vocational and industrial training and is administered by the Ministry of Industry. As part of this, the PVTD has a long-standing policy of sharing the costs of training with employers. Employers have contributed goods in kind, equipment, land, furniture and cash to VTCs. An attempt by the PVTD to charge an annual fee of LE 100 per trainee in 1985 to employers participating in the apprenticeship training program has not been successful due to strong resistance from employers. At the secondary school level, in some cases the Ministry of Education shares financing of the three-year technical program with several private companies as well as some public enterprises. The Ministry of Education provides the teachers for theoretical subjects, while the associate organization supplies the premises and helps with practical work and equipment.

4.28 In Turkey, due to the constraints placed upon the MOE budget, the government is attempting to galvanize non-governmental funds from the private sector for vocational education and training. The MOE provides nonformal vocational training (NFVT) to people lacking functional and employable skills, such as school dropouts, seasonal agricultural workers, and people in the urban informal sector. The NFVT has a well established network of training workshops in suburbs and villages and provides short and intensive courses at times convenient to the participants. Presently the MOE devotes 4 percent of its budget to financing the NFVT program. As an example of private sector participation in the NFVT, the Apprenticeship Training System (ATS -- which forms part of the NFVT network) receives a great deal of assistance from the private sector. The apprenticeship system

provides training in 40 trades, and is open to primary school completers who are at least 12 years old. Apprentices spend one day per week in training centers for theoretical instruction, and the rest of the week on the shop floor. A majority of the buildings for Apprenticeship Training Centers have been provided by industry and the 45 new centers to be opened over the next four years will be built by various companies as well. Companies also often provide part-time instructors. Moreover, large private corporations and some private development finance corporations as well as some public enterprises have established training organizations due to the need to upgrade the skills of existing employees and to train new employees. This has not been totally successful because training here tends to be informal and lacking in many of the elements present in formal training programs. A new development, however, is the creation of Employers Federations which provide training. For example, the 450 member Turkish Metal Employers Federation has established a TL 150 million training fund and it plans to set up eight regional training centers to meet the skilled manpower needs of its members in such fields as metal trades, welding, electronics, electrical trades and draftsmanship.

4.29 Pre-service skill training within the private sector in Morocco is extremely limited and confined largely to commercial specializations. However, there is some private sector involvement in apprenticeship programs. Under the Industry Liaison Department of the Office de la Formation Professionnelle et de la Promotion du Travail (OFPPT), an experimental apprentice training scheme was established in Casablanca. The apprentices work full-time in a company and attend a training center for half a day on a Saturday for theory and workshop practice. The apprentices are paid a nominal amount which differs from company to company. About 800 apprentices have been through the scheme.

4.30 In Sudan, the Wad Medani VTC -- under the Ministry of Labor -- runs special programs for local industry in off-peak times. Fees are charged for these courses. The income generated is as large as the entire budget provided by the government.

#### G. PRIVATE EDUCATION

4.31 This refers to the provision of education at any level by both profit-seeking and non-profit organizations. Private education is widely available in the Middle East, but, with the exception of Lebanon, the scope is very narrow.

4.32 In Yemen AR, a few private schools exist whose clientele has so far been the elite (about five schools). The Government is trying to encourage the creation of private schools by providing tax incentives and the Ministry of Education has contributed inputs such as books and teachers. Still, private education is developing slowly in YAR.

4.33 Similarly, private education in Morocco at the present is not well developed, accounting for less than four percent of enrollments in primary and secondary education. Incentives for private-sector education investments are to be introduced in the form of an education investment code and improved control and support by the Ministry of Education.

4.34 In Turkey, private education exists mainly at the secondary level, where it accounts for about 4 percent of enrollment. A private university will enroll its first students in September, 1987. The University will be self-financing in respect of operating costs, with investment costs being financed through a university foundation.

4.35 The few private schools in Tunisia play no significant role in education, accounting for less than one percent of primary enrollments and about 6 percent of secondary enrollments.

4.36 Private education is encouraged in Jordan by tax laws. Profit organizations offering education are protected by a tax-rate bracket ceiling (35 to 38 percent) and non-profit organizations, such as religious schools and charitable institutions, are tax-exempt. The top tax rate otherwise would be 55 percent. Private education exists at all levels. In General Education there are 600 private schools, of which 80 are religious and charitable. These account for about six to seven percent of enrollment at the primary, secondary and vocational levels. Kindergarten education is almost entirely provided by the private sector, and has accounted for most of the growth of private schools recently. Tuition fees run between JD 200 and JD 400. Private schools must meet the core course requirements of the MOE. Because the private schools use some teachers who also work for the public schools, they do not have to pay for extensive teacher training. These schools mainly offer academic tracks, not vocational courses. In Higher Education, private community colleges have proliferated quickly over the recent past and presently there are 31. Moreover, a private university will soon be established. In fact, private community colleges account for two-thirds of enrollment at this level. It is clear that such colleges have moved in to meet the need when public schools were unable to. An accreditation system has not yet been established for private community colleges. In addition, provisions are currently being worked out to permit a limited number of outstanding community college students to transfer to a university, if they desire.

4.37 Lebanon is the only country in the region where private education is available on a large scale. Here, private education accounts for 50 percent of enrollment at the primary level and about 40 percent of enrollment at the secondary level. Some private primary schools receive significant subsidies from the government. Other types of private schools are totally self-financed non-profit (church schools, civic society schools, etc.) and profit-seeking institutions. Due to historical and cultural reasons, the issue there is not "free" education but freedom of education exercised by the different communities and guaranteed by the constitution.



V. SELECTED REFERENCES

Chapter II:

"Allocation, Control and Monitoring of Financial Resources For Education":

Goettel, R.J. "Budget Theory in Higher Education," from the International Encyclopedia of Education, edited by Torsten Husen and T. Neville Postlethwaite, pp. 585-588. (Oxford: Pergamon Press, 1985).

Hough, J.R. "Educational Budgets and Their Implications," paper presented at the IIEP international seminar on Budget, Resource Allocation and Educational Policy in Paris, October 25-29, 1982. Available from UNESCO.

Mingat, Alain, and J.P. Tan. "Subsidization of Higher Education versus Expansion of Primary Enrollments: What Can a Shift of Resources Achieve in Sub-Saharan Africa?" International Journal of Educational Development 5:259-68, 1985.

Tibi, Claude. "Budget, Resource Allocation and Educational Policy," paper presented at the IIEP international seminar on Budget, Resource Allocation and Educational Policy in Paris, October 25-29, 1982. Available from UNESCO.

UNESCO. Statistical Yearbooks, 1974, 1984, 1985. (Paris: UNESCO Office of Statistics, 1985).

Vaizey, J. and J.D. Chesswas. The Costing of Educational Plans. (Paris: UNESCO International Institute for Educational Planning, 1967).

World Bank. Financing Education in Developing Countries. (Washington: 1986).

Chapter III:

"Cost Control and Efficiency Measures in the Education Sector":

UNESCO, Evolution of Wastage in Primary Education in the World Between 1970 and 1980. (Paris: UNESCO Office of Statistics, 1984.)

World Bank Comparative Education Indicators, February 14, 1986.

Selected World Bank Documents.