



EDUCATION AND ECONOMIC DEVELOPMENT

Newsletter

What is the relationship between education and economic development¹? Is there any causality between them? Does the expansion of education lead to economic development? To take a look at such issues is the main theme of this issue.

Although it must be recognized, first and foremost, that education is a basic human right and an end itself, education can also be an instrument for economic development which improves productivity by developing important values and attitudes, and by providing people with knowledge, skills, and relevant experience.

Industrialization has been driven by technological advancement. Technological advancement was brought about by “science-based” technology rather than “empirically-based” technology after “the Industrial Revolution” in the eighteenth century, which resulted in enhancing the significance of education for economic development.

Lack of highly skilled human resources is known to inhibit industrial development. For instance, many African countries made concerted attempts to nurture such personnel immediately after their

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independence. It is also true nowadays that the advancement of Information, Communication and Technologies (ICTs) and globalization enhance the demand for educated human resources who are flexible and able to learn new skills to adapt to a rapidly changing world. As advocated in the New Partnership for Africa’s Development (NEPAD), human resource development and ICTs are some of the highest priorities for African countries to achieve economic development.

However, investing in education may not directly lead to economic development. There are a number of examples of countries which were highly successful in developing their education systems, such as Sri Lanka, and in Africa, Ghana, Zambia and Zimbabwe. All these have been stars in education, but have not been able to make commensurate advances in economic industrialization. Instead,

what should be noted is that mere educational expansion will not automatically lead to economic development. For instance, even if a country trains highly educated people, unless there is infrastructure, systems, institutions, regulations and incentives which provide them with an environment conducive to utilizing their ability, they would usually go abroad, becoming part



the brain-drain, or may become part of the highly educated underemployed or unemployed if they choose to remain at home. Therefore it is important to set up the environment for the educated and highly skilled to work and utilize their abilities.

A recent economic research has revealed that the rapid progress in technology in the last few centuries is augmented by incentives. Although technical progress such as inventions and innovations took place even long before, they were sporadic and were not sustained, because continuous incentives for the inventors and innovators did not exist. In most cases those inventions and innovations were brought about by the curiosity of scientists and/or rewards offered by the statesmen. However, since the invention of the intellectual property right as well as technology-based industrialization, those individuals or enterprises

who invent a new technology would be rewarded by pecuniary advantages, which give them continuous incentives. Therefore it is critically important for states to set up incentive systems which induce the educated people to utilize the skills and knowledge, by launching a national project for a specific area, offering them a working environment conducive to starting a new business, etc.

Another important finding of recent economic research has been the importance of institutions for economic development. These institutions include the banking system, the legal system particularly regarding property ownership, research and marketing systems, and an efficient and streamlined bureaucracy. Government's role in strengthening these institutions can be critical.

In conclusion, investing in education must be accompanied with incentives such as regulations and economic poli-

cies that encourage their participation in economic activities. Therefore, education plan must be carefully designed so that it will be well coordinated with other sector's policy, in particular, with economic policy. Education policy makers and planners need to have a multi-sectoral viewpoint which allows them to position the education planning in the national development plan.

This issue deals with two articles. One article provides an overview of the historical change in perspectives of the role of education in economic development: this provides a brief summary of this topic. The other article presents a case study that analyzes the situation of economy and education in Madagascar and designed educational plan, which, I believe, will provide an insight on how education plans could be designed in coordination with the economic sector. j

¹. Although they are sometimes used interchangeably, the meanings of the terms "economic development" and "economic growth" are different. Economic development includes more complicated and more diverse aspects. Simply defining, while "economic growth" can be represented by the increase in GDP per capita, "economic development" means "economic growth" and qualitative changes. For example, economic development comes with the transformation of production system, change in the structure of industry (decrease in the agricultural production in the total production, etc.).

Education and Development: The changing perceptions

N. V. Varghese (PhD)

Head of Training Unit

UNESCO International Institute for Education Planning

Introduction

Economists of education argue that investment in education is rewarding since it contributes to individual productivity and national production. The faith in this nexus was an important factor in encouraging nations to investment in education. Public investment in education continued due to the faith, not only in its role in production, but also due to its role in distribution. It is believed, and rightly so, that education is a potent instrument in promoting equity. The recent approaches to education indicate that education is an essential component of human development and hence the investments in education need not directly to be based on the rate of returns

tables. This note briefly introduces the changing perceptions on the role of education in development.

The residual factor in economic growth

Development theories of the 1950s considered that capital was the missing link in development and they emphasized the role of capital in promoting economic growth. The economic growth models of this period did not recognize the contribution of education to economic growth. By the early 1960s it was clear from the empirical studies that growth in national income cannot be fully explained in terms of growth in capital and labour inputs. The unexplained part was later interpreted as 'residual factor' in economic growth.

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The Editor
IICBA Newsletter
P.O. Box 2305
Addis Ababa, Ethiopia
Tel. 251-1- 55 75 87/89
Fax. 251-1- 55 75 85
E-mail: info@unesco-iicba.org
Web site- www.unesco-iicba.org

The research efforts of some of the economists such as Denison (1962) and Griliches (1963) attempted to explain the computed residual by focusing on adjustments to the measurement of various input and output components. Denison writes that the residual factor was due to the 'advances in knowledge', caused mainly through improvements in labour quality inputs. Many studies have attempted to compute labour quality under the assumption that: i) earning differentials reflect marginal contribution resulting from enhanced productivity; ii) the productivity differentials are due to differences in the levels of schooling of the labour force. All these studies provided empirical evidence supporting the productivity-adding role of schooling and its contribution to economic growth and national income.

Human capital

Studies on variations on personal income distribution showed that the source of variation is more due to earnings from professions than from land and wealth. Qualifications are a determining factor in deciding one's own choice and entry into professions. Furthermore, empirical evidence on earning differentials has highlighted education as an important factor influencing differences in earnings.

Jacob Mincer (1958) developed a framework for measuring private returns to schooling and in the subsequent research studies this framework was relied on to estimate returns to different levels of education. The studies on rate of returns to education (Psacharopoulos, 1994) indicate that earnings vary according to levels of education received by individuals. Decomposition of sources of inequality in income indicates that differences in education account for from 10 to more than 20 per cent of observed inequality (Fishlow, 1996).

T.W. Schultz (1961 and 1962) connected the evidence related to the role of education in explaining personal income distribution with the puzzle of the residual factor. He developed the theory of human capital and argued that expenditure on

education is an investment. Furthermore, returns to investment in education are at times higher than that to physical capital. He postulated on the possible contribution of human capital to economic growth and estimated that human capital accounted for nearly 20 percent of the growth in output of the United States. Further research indicated the growth in national output to human capital accumulation, R & D and their spillovers.

The human capital approach focused on the productivity-augmenting role of education and on the estimation of costs and benefits of education and their sharing between individuals and nations. Emergence of education as a statistically significant variable in empirical studies on growth and distribution of income gives education a crucial policy role.

Capital, technology and skill complementarities

In the 1970s, the growth of the residual declined significantly but the premium of education in the market remained, which is attributable to the technical changes in the information technology which are difficult to measure (Griliches, 2000). Recent evidence also indicates widening educational wage differentials. Despite the large number of highly educated people entering the labour market, the wages did not come down. This seemingly contradictory trend is attributed to two explanations – capital-skill complementarity and technology-skill interaction.

The former implies that if capital and skilled labour are complementary, capital accumulation and increase in education together asserts that education is valuable in periods of rapid change, and the premium is a result of the technical demand for it. All on empirical evidence from the developed countries

Education and growth

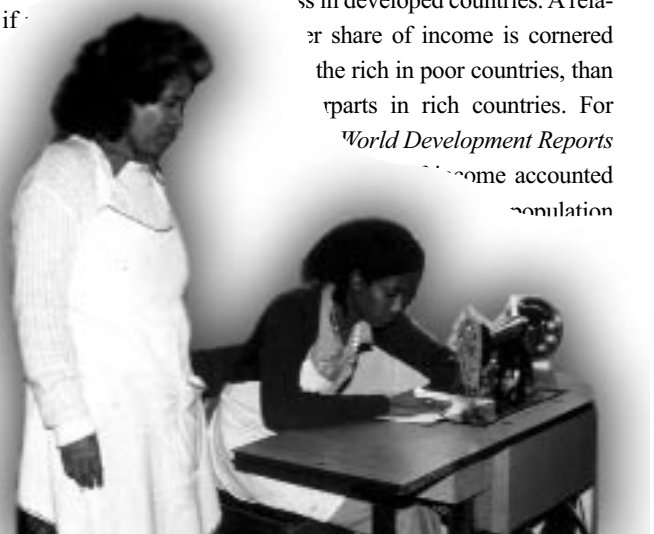
Education influences

of development. There is a positive association between education and life expectancy. Educated people have easy access to medical facilities and they tend to live longer. The level of education is negatively associated with fertility rates (Cochrane, 1988). The literacy-fertility hypothesis postulates that education influences fertility rates. World Fertility surveys show that women with at least compulsory levels of education have fewer children than their less educated counterparts. Similarly, infant mortality also tends to be low in countries where the educational level, especially of women, is higher. More importantly, educated parents seem to have healthier children. These are benefits from education, irrespective of its direct contribution to improving productivity.

Education and inequalities

The development experience in the sixties showed that economic growth has taken place but inequalities persist. The trickle-down effects of even high rates of growth have been slow in many countries. Subsequently, development concerns in the seventies shifted from growth to growth with redistribution (Chenery et. al. 1974). Consequently, emphasis on both growth and inequality was replaced by concerns of poverty reduction in the 1980s.

In general, income inequalities are lower at higher income per capita. Since income per capita is higher in developed countries, it implies that income inequalities in developed countries. A larger share of income is cornered by the rich in poor countries, than by the rich in rich countries. For example, the *World Development Reports* (1996) show that income accounted for 20 per cent of population



cation among the population. Educational inequalities, measured in terms of enrolment ratios, indicate substantial gap between developed and developing countries at all levels of education, especially in sub-Saharan Africa. It is stated that for countries in Africa and Latin America, the 1980s “was not only a ‘lost decade’ but also a ‘lost generation’ deprived of skills and capacity to acquire them” (Fishlow, 1996).

Close scrutiny of these two pieces of empirical evidence on income and educational inequalities may indicate that there is some association between these two forms of inequalities (Varghese, 2001). The emerging picture seems to be that both income and education inequalities are smaller at higher levels of income and educational development. In other words, equity in provision of education may be an assurance for reducing inequalities in the future.

Education and human development

One thing common in all of the above perspectives is that they all treat education as an important factor in production and distribution. Human Development approach, on the other hand, focuses on people and places them at the centre of development activities. It shifts the objective of development from growth in income as an end in itself to people and their freedom of choice to make their lives valuable. The objective of development is to promote freedom and expand choices

of people (Sen, 1999). It recognizes that human capabilities has an intrinsic and an instrumental value - education is intrinsically valuable as an end in itself and basic skills provided through education - literacy and numeracy - are valuable themselves to change the life chances of individuals and societies (UNESCO, 2002). The *Human Development Reports* of the UNDP are based on this approach to development.

Concluding observations

It becomes evident from the above discussions that education has an important positive role in development – it contributes to economic growth, social development, equity in income distribution and to human development. However, although this role is more obvious in theory than in empirical evidence, the empirical evidence is certainly not conclusive – especially in developing countries. In fact, some studies (Lopez, et. al 1998) have shown a negative or an insignificant effect of education on economic growth and productivity increase.

In other words, the positive relationship between education and economic growth is not automatic. The contribution of education to development also depends on who gets education and what type of education is being imparted. The greater disparities are in the distribution of education, the more uneven are their effects on growth and development. Similarly, it seems that quality of education is rewarding and it matters in many instances to realize the effects of education.

The benefits of education can be maximised when the development context is conducive. Not only a mere availability of educated labour force but also its appropriate deployment and effective utilization are important to realize benefits of education. For example, it is becoming evident that rate of return is falling where demand for labour is stagnant. In most of the developing countries, a very high share of the highly educated is employed in public services. Some of these sectors operate at a lower level of efficiency. At times there are no reliable measures of real output from these sectors in the national income and product accounts of various countries. What fails in these contexts is not education but an overall context to realize the benefits of education.

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Education and Training in Madagascar: Towards a Policy Agenda for Economic Growth and Poverty Reduction

World Bank

This summary was made in March 2001, based on a 210-page report with the same title. A product of close collaboration between the World Bank, the Government of Madagascar and other partners, the report has benefited from inputs from many colleagues and friends who have generously shared with the authors their time and intimate knowledge of education in Madagascar.

Introduction

The prospects for educational development are excellent in Madagascar today in light of the increasingly favorable policy environment for the sector. During the first half of the 1990s, public spending on education relative to the GDP declined by more than 40 percent, coinciding with a five-fold rise in the country's external debt interest payment. As the debt service burden began to ease after 1995, public spending on education began to recover, reaching in 2000 the same level of spending as at the start of the 1990s, around 3.0 percent of GDP. In the context of the government's strategy for poverty reduction, the sector's claim on public spending is expected to grow bigger still, rising to a projected 4.1 percent of GDP in 2003. At the same time, following the debt reduction agreement recently concluded with the International Monetary Fund and the World Bank under the Highly Indebted Poor Countries (HIPC) Initiative, an estimated savings of \$50 million in interest payment are expected to materialize annually for at least the next ten years. About 25 percent of the savings is being earmarked for spending on education, further boosting public spending on education to a projected 4.3 percent of GDP in 2003, a level of spending that is comparable to the average among low-income countries benefiting from debt reduction under the HIPC Initiative.

Given the large investment of resources involved, the education sector is rightly expected to make a significant contribution to the government's poverty reduc-

tion agenda. For policy makers and managers in the sector a key challenge is to identify sound directions for sector development in the medium- and long-term, and to align spending priorities and intra-sectoral policies accordingly. What then are the strategic options in this regard? Beyond fixing broad sectoral directions, policy makers also face the more immediate task of organizing and structuring the system to improve service delivery. What obstacles stand in the way of better performance, particularly in terms of educational access and outcomes among the poorest segments of the population? How can the government mount an effective policy response to overcome these constraints?

This note is intended as a contribution to the national dialogue on these questions. It summarizes the main findings of an education sector study that was recently completed by the World Bank in collaboration with the government of Madagascar and other partners. The results pertain only to the formal education system and are more appropriately viewed as a diagnosis of the main problems that hamper the system's performance, than as an evaluation of its achievements. Further, to the extent that the analysis relies on data that are only as recent as the late 1990s, the findings obviously do not take full account of the impact of the latest reforms implemented as part of PNAE2, the government's education sector development plan launched in 1997. Nonetheless, the picture that emerges is that substantial scope remains for improvement throughout the system. Policy makers are in the enviable posi-

tion of being faced with choices that can truly propel the education system's expansion along an efficient and equitable path, thereby contributing to the country's medium-term objective of achieving rapid economic growth and sustained reduction in poverty.

A medium-term strategy for educational development

An overall medium-term strategy for the sector can be articulated by considering broad efficiency and equity goals. The former refers to the consistency between the relative priority across education sub-sectors, and the country's current economic conditions and their likely evolution in the coming years; the latter refers to disparities in the access to schooling across population groups as well as the distribution of public spending among them. The findings of the education sector study suggests that efficiency as well as equity goals in education would be served by a medium term strategy with the following orientation:

Universalize basic education of reasonable quality while closely linking expansion of other levels and types of education and training to labor market demand.

This strategy accords well with the government's vision for poverty reduction which relies on two broad pillars: (a) maximizing overall economic growth; and (b) ensuring inclusion of the poor in the process by enlarging their capacity both to contribute to growth and to take advantage of the opportunities to escape from poverty as the economy expands.

The economic development context and efficiency concerns. Madagascar has the typical dualistic economy that is characteristic of most low-income countries: a dominant agricultural and informal sector employing the vast majority of the workforce, and a tiny modern sector. While this dualistic structure is likely to persist for some time, the economy's growth path will probably conform to the following common pattern: (a) a slowly growing modern sector as reflected in its share of the GDP and employment; and (b) rising labor productivity in the traditional sector which then frees up labor for work in the modern sector.

Investments in human capital play an important role in responding to and facilitating the foregoing processes of economic transformation, addressing skills needs in both the modern as well as traditional sectors:

** For the modern sector,* investments in technical and vocational education, and in post-secondary education are essential, but must be calibrated to the labor market's absorptive capacity. International experience shows beyond doubt that the growth and development of the modern economy depend primarily on sound macro-economic policies. Thus, even though a shortage of educated labor, whether in quantity or quality, can often constrain economic growth, a surplus would almost certainly not accelerate growth but would instead lead to unemployment and under-employment among the educated, and by implication, result in a wastage of public resources and produce frustration among those affected. To minimize these adverse outcomes, it would make sense to allow labor market signals to drive the expansion

of vocational and technical education and post basic levels of education.

** For agriculture and the informal sector,* where the economic activities are highly diverse, the available evidence suggests that basic education is the most effective form of human capital investment. It improves the productivity of farmers and other workers in the traditional economy, while also contributing significantly to broader social objectives, including better health and greater social equity. For countries at Madagascar's current level of economic development, basic education yields far and away the highest economic and social returns across levels and types of education.

In relation to the foregoing assessment, Madagascar's current situation is highly unbalanced, as table 1 suggests.

Table 1: Output of graduates and thier absorption on the labour market, Madagascar circa 1999

Output from the education system				Annual flow of new jobs		
Educational attainment		Number in each cohort ('000)		Sector/type of employment	Number of jobs ('000)	
None	No schooling	57	195	Agriculture	?	273.5
	Primary schooling	Incomplete primary		138	Informal sector	
Complete without CEPE		24	Small firms	?		
Complete with CEPE		31		89		
Lower sec.	Incomplete lower sec.	17	5	Large firms & the civil service: Lower level jobs	18	26.5
	Complete without BEPC	17				
	Complete with BEPC	2.5				
Upper sec.	Incomplete upper sec.	2.5	11	Large firms & the civil service: Higher level jobs	6.5 – 6.0	
	<i>Baccalauréat</i>	7.3				
Higher	Higher education	3.7		Top-level jobs	2.0-2.5	8.5
Cohort size		300		-		300

The education system produces far too many graduates at the highest levels: for example, 3,700 post-secondary graduates currently exit the system annually to compete for the 2,500 new jobs available each year requiring this level of education. At the same time, too few graduates are produced at the lower levels of the system: about two-thirds of each cohort of young people enter the workforce with either no schooling or with less than the full five years of primary schooling.

A strategy for education sector development must obviously take into account the current imbalance and prioritize accordingly in favor of basic education. To ensure that post-basic education develops in tandem with the labor market's absorptive capacity, it would be appropriate to create and implement selection mechanisms to regulate student flow through the system, particularly between cycles of schooling. Such mechanisms would improve on the current situation where selection occurs by default through massive dropping out within cycles of schooling throughout the system.

Equity concerns. The performance of the education system in this regard also leaves much to be desired at present. The share of public spending on education benefiting children from the richest 20 percent of Malagasy households is five times the share that benefits children from the poorest 20 percent. Among twelve other developing countries for which similar data are available, only Guinea has a higher ratio; and among the remaining countries, the corresponding ratio ranges between 1.2 and 2.8. From a longitudinal perspective, the current structure of the education system is such that the best educated 10 percent in any birth cohort claim an estimated 64 percent of the public spending on education accumulated by the cohort as it passes through the education system. Again, the result is much more inequitable in Madagascar than elsewhere in the world. For low-income countries in Latin America, the Middle East and Asia,



A strategy for education sector development must take into account the imbalance and prioritize accordingly in favor of basic education.

the corresponding share is, on average, less than half as high. Simulations show that the picture in Madagascar can be improved dramatically by focussing on improving basic education, particularly survival rates at the primary level.

To summarize, the results of the education sector study strongly suggests that a sector development strategy that extends basic education of adequate quality to all children, while calibrating the expansion of the other levels to the rhythm of economic activity and trends in the demand for qualified labor, would be both efficient and equitable. In the sections below, this paper summarizes what such a strategy might imply in terms of policy challenges in each of the education sub-sectors.

Primary education

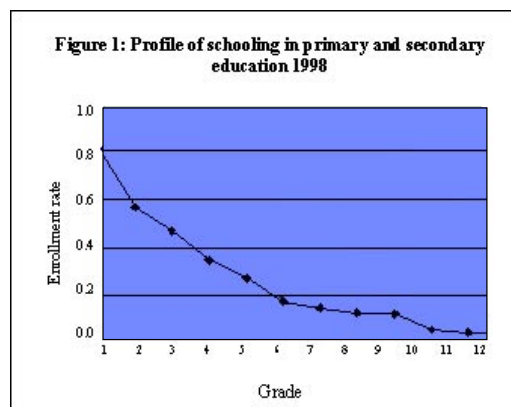
At the 2000 Dakar Education For All Forum, basic education was defined as including the primary cycle as well as the first cycle of secondary schooling. In Madagascar's current context, the primary cycle continues to warrant top priority, however, not least because the system's

performance at this level remains very weak. Survival rates are low, particularly among children from poor families, while grade repetition occurs much too frequently and student learning remains highly inadequate. Many of these problems reflect weak management of the allocation of teachers across schools, poor organization of time use, and ineffective oversight of the pedagogical process in schools and classrooms. Based on the results of the sector study, the key policy challenges in primary education would appear to be the following:

- . Improve survival rates to the end of the primary cycle and reduce grade repetition;
- . Rationalize teacher allocation across schools and improve the efficiency of time utilization by teachers; and
- . Enhance student learning by ensuring

adequate provision of teaching materials, but especially by improving management of the pedagogical process in schools and classrooms.

Low survival rates to the end of the primary cycle. Figure 1 offers a graphic illustration of the problem. While the share children who enter first grade is respectably high at 81 percent, only 33 percent of the entrants reach the end of the cycle, implying that only 27 percent of the children in each birth cohort attain the full five years of primary schooling. This poor outcome is clearly undesirable, given that children generally require at least 4 years of schooling of reasonable

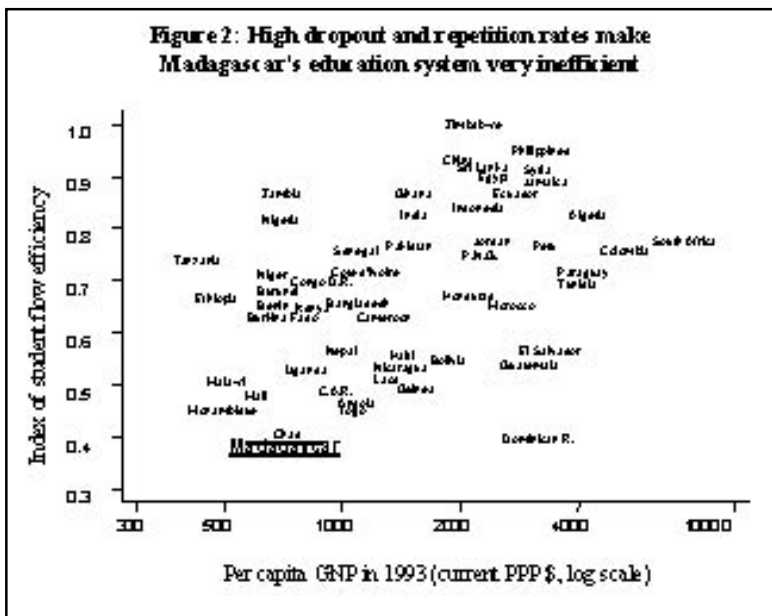


quality to become permanently literate and numerate as adults, skills that will enhance their economic productivity as well as their chances of escaping from poverty.

Large disparities in survival patterns across population groups. To Madagascar's credit, differences in schooling outcomes between boys and girls are limited, unlike the situation in many low-income countries, and disparities across provinces are also not as large as those observed in elsewhere. Even so, the lagging performance in two of the provinces is noteworthy: in Toliara, the rate of entry to grade 1 reaches only 58 percent, while in Toliara and Fianarantsoa the survival rate to the last grade in the primary cycle reaches only 22 and 23 percent respectively (table 2). As a result, the full cycle of primary schooling is attained by only 13 and 17 percent, respectively, of each cohort of children in the two provinces. In Madagascar, the most striking disparities are between urban and rural areas and across income groups. Whereas 60 percent of urban children achieve a complete primary education, the corresponding share is only 12 percent among rural children. The gap by income group is even wider, with 70 percent of the children from the richest 20 percent of

education, compared with only 6 percent among children from the poorest 40 percent of the families. Differences in entry rates are part of the reason for this outcome: while nearly all the children from the richest families enter grade 1,

Malagasy system one of the least efficient in the world in terms of student flow, with an index of student flow efficiency that is less than one-third as high as that in a system with no grade repetition and no dropping out (figure 2).



only two-thirds do so among those from the bottom 40 percent. An even more important reason is the disparities in survival rates: 70 percent among children from the richest families, compared with only 9 percent among children from the bottom 40 percent. These results suggest

reduction strategies only if substantial are directed at families, especially

retention. In addition, low survival rates, on system also : highest rates of : world, average or the system as rate is wasteful ers take longer to nd therefore cost also because the nce suggests that improves student courage dropping et of low survival

Policies to improve the pattern of student flow. In Madagascar, such policies would need to focus simultaneously on improving survival rates and lowering the incidence of grade repetition, using interventions that address constraints on the supply of services as well as the demand for them. Supply-side constraints are more feasible to change, particularly in the short-run, but some options also exist to ease demand-side constraints. The government's current efforts to encourage greater participa-

and high repetition rates is to make the

Table 2: Entry and survival rates in primary education, 1997 (percent)

	Entry rate to grade 1	Survival rate to grade 5	Grade 5 enrollement rate
Madagascar	81	33	27
By province	93	48	44
Antananarivo	86	43	37
Fianarantsoa	77	22	17
Mahajanga	74	34	25
Toamasina	86	31	27
Toliara	58	23	13
By locality			
Urban	99	61	60
Rural	75	16	12
By household income			
Richest 20%	99	70	70
Poorest 40%	66	9	6

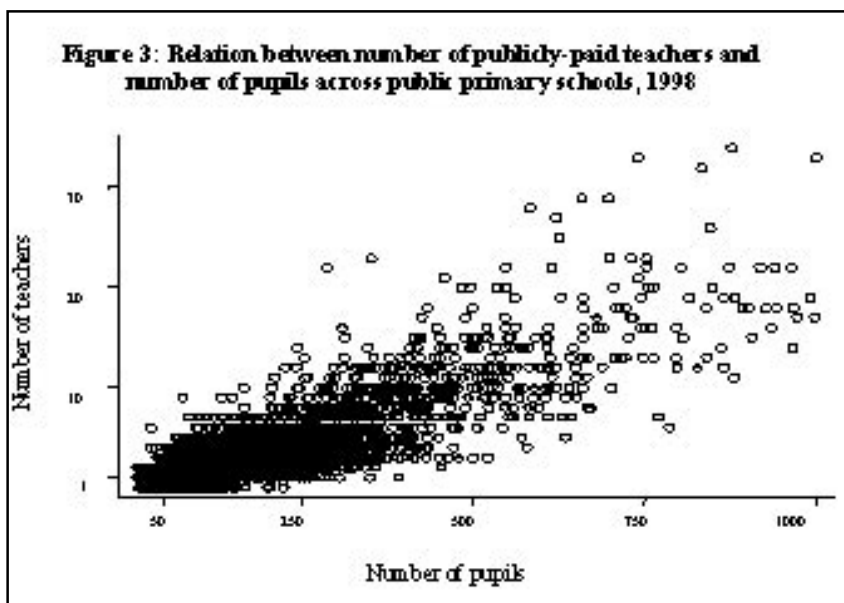
tion by parents and other community members in school activities through the “contrat programme” arrangement is a step in the right direction. Allowing greater flexibility for local authorities to adapt the school calendar and daily schedule to local conditions would, by minimizing the opportunity cost of schooling, further lower the demand-side constraints on schooling.

With regard to obstacles on the supply-side, the sector study estimates that about 19 percent of the children who start first grade attend a school that offers fewer than the five grades of instruction in the primary cycle. Making it possible for all schools to offer the full cycle—by removing constraints in staffing or facilities—would ensure that no child who wished to continue to the end of the cycle would be “pushed out” of the system. The study also identified the limited instructional time that children receive as another important supply-side constraint. There is much room for improvement in this regard, given that currently only 43 percent of all public primary schools in the country offer their pupils a full-day’s instruction (i.e. between six to eight hours daily), with the remaining schools offering no more than four hours and some even offering only two hours. Because instructional time is the single most important influence on children’s progress in learning, the short instructional day for the majority of Malagasy children is a key factor behind the country’s high drop out

and repetition rates. Addressing these supply-side constraints would require concerted and sustained efforts to rationalize the deployment of teachers across schools and to enhance the efficiency of time utilization by teachers.

A more rational deployment of teachers across schools. Teachers represent the bulk of the resources that schools, particularly at the lower levels, receive to organize the delivery of education services. The distribution across schools therefore deserves close attention as a

figure 3 where each circle represents a school). For example, among schools with 150 pupils the number of teachers could range as widely as between one and seven; and among schools with four teachers, the number of pupils enrolled could lie anywhere between 50 and 500. A closer look at the problem suggests that the inconsistencies in teacher allocation affect rural schools more adversely than those in urban areas. Schools in the city of Antananarivo are particularly favored in this regard, while those in Antsiranana and Toamasina are



key management issue. In a well-managed system, one would expect that the more pupils a school enrolls, the more teachers it would receive; similarly one would expect that schools of comparable size would have more or less the same number of teachers.

generally less well-endowed relative to schools in other provinces. Yet the bulk of the global pattern of inconsistency in teacher allocation arises from the poor distribution of teachers across schools within each province, rather than from differences across provinces *per se*.



In Madagascar, however, the current pattern of teacher allocation across schools departs substantially from this objective standard, even if, on average, a positive relation exists between the number of pupils and the number of teachers (see

The freeze on teacher recruitment during the 1990s did little to ease the situation. For the system of public primary schools as a whole, the pupil-teacher ratio rose from less than 40:1, on average, at the beginning of the decade, to about 53:1 at present, implying that schools were generally becoming increasingly understaffed over the decade. However, the large inconsistencies in teacher allocation across schools exacerbated what was already a difficult situation, so that across the system today *some schools enjoy a relatively favorable allocation*

relative to their student population while many others experience severe shortages that seriously compromise their capacity for effective service delivery. With the lifting of the hiring freeze since 1997-98 the situation has improved somewhat. The significant increases in recruitment currently underway—about 3,500 new positions in 2001 (representing a 10 percent increase) and more planned for future years—provide a golden opportunity to make further gains in this regard. Turning the potential for improvement into reality would require two key ingredients, however: (a) defining and applying precise and transparent criteria for teacher allocation centered on enrollments and possibly other relevant factors; and (b) making systematic efforts, including the use of appropriate financial incentives for posting to rural schools and other difficult-to-reach areas, to ensure that new teacher recruits are allocated to the under-endowed schools.

Better time utilization and arrangements for multi-grade teaching. Besides the poor allocation of teachers across schools, the system also suffers from a sub-optimal utilization of teachers' and pupils' time, a problem that arises mainly from inadequate arrangements for multi-grade teaching. The geographic spread of the population in Madagascar is such that many public schools serve relatively few pupils, with nearly half of them enrolling fewer than 100 pupils each. In such schools, the use of multi-grade teaching—whereby one teacher takes charge of pupils from several grades—is appropriate both to manage costs and to ensure effective teaching. On average, about 62 percent of the country's public primary schools do indeed organize their classes for multi-grade teaching; and the share rises to 70 percent among schools with fewer than 75 pupils.

Yet most of the schools implement multi-grade teaching in a highly ineffective manner. Instead of having all the children in the same classroom grouped by grade level for a combination of instruction and independent work over the

course of the entire day (as is the practice in almost all other countries), teachers in Madagascar tend to organize their pupils for instruction one group at a time in the classroom. More than half of the public

Weak link between funding and student learning. That inadequate funding constrains educational quality is a widely-held belief. There is of course

Table 3: Incomplete schools multi-grade teaching and time utilization in public and private schools, 1998

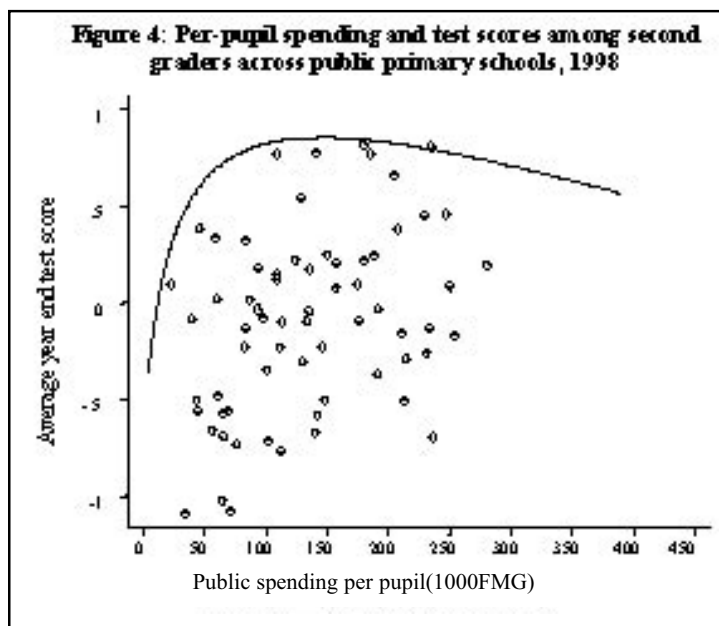
	Public	Private
First graders in a school with less than 5 grades (%)	18.8	-
Schools offering multi-grade instruction (%)		
All schools	61.5	73.8
Schools with less than 75 pupils ^a	69.9	91.0
Schools with multigrade classes according to instructional time (%)		
Full day	43.5	75.8
Half-day	18.5	12.9
Less than half-day	37.5	11.2

a: Such schools make up 31.5 percent of all schools.

schools using multi-grade teaching offer their pupils less than a full-day's instruction (table 3). Given that instructional time, including time that pupils spend on independent work in the classroom, is the single most important factor affecting student learning, it is indeed a matter of urgency to change the current arrangements for multi-grade teaching so as to ensure that all schools offer their pupils full-day instruction. The fact that many other developing countries, including those at Madagascar's level of development (e.g. Burkina Faso) have successfully implemented multi-grade teaching with good results, suggests that the change is as desirable as it is feasible.

some validity to this view, since schools cannot be expected to offer adequate services in the absence of a minimum package of schooling inputs. For policy purposes, however, it is important to see funding for education as a means toward producing student learning, rather than as an end in itself. In other words, the focus should be on the process of transforming the available resources into student learning. How well do schools in Madagascar perform in this regard?

Figure 4 shows some pertinent results based on a sample of 70 public primary schools surveyed in 1999 in the PASEC study sponsored by CONFEMEN. Each circle in the figure represents a sample



school whose position is determined by its level of public spending per pupil (x-axis) and the average test score of its pupils in French and mathematics (y-axis), after controlling for the pupils' level of learning at the start of the school year and their socio-economic composition. The results show that while spending per pupil does correlate positively with learning outcomes, the relationship is very weak. Thus, schools with comparable levels of spending per pupil produce widely different levels of student learning, and schools that achieve similar levels of student learning do so with very different levels of funding. The same weak relation between spending and learning obtains when the analysis is repeated using data for all public primary schools in the system, with learning measured by pass rates on the CEPE examination at the end of fifth grade.

The lack of a strong relation between funding and learning outcomes across schools suggests that schools probably differ widely in how they are run, for example, in terms of how teachers use their instructional time and manage their classes and how their supervisors guide, monitor and evaluate their work. These pedagogical processes work more effectively in some schools than in others, and the result is reflected in the gaps in learning outcomes even across comparably-funded schools that serve similar clienteles. That the disparities are large is symptomatic of a system with *weak management and oversight of the process of teaching and learning in schools*. These results imply that while lack of funding may constrain performance in some schools, particularly those where minimum conditions for learning are not met, an infusion of additional spending would make sense only if accompanied by concurrent measures to improve the management of pedagogical processes operating at the level of schools and classrooms.

Secondary education

Over the course of the 1990s, enrollments in lower secondary education rose

only modestly while those in upper secondary education declined. At the same time, the distribution of enrollments shifted in favor of the private sector, with the number of students in the public system shrinking by 12 percent between 1990 and 1998 in the first cycle, and by 26 percent in the second cycle. By the end of the decade, private schools accounted for 45 and 49 percent, respectively, of total enrollments in lower and upper secondary education. The sector study identified two issues which appear particularly relevant to the future development of secondary education: (a) how to manage its expansion as a part of the broader strategy for development of the whole system; and (b) how to rationalize service delivery in a system that will continue to include many small schools. As a direct service provider, the government faces the following key challenges:

- . ***Expand lower secondary enrollments at a moderate pace, while in the upper secondary cycle, focus more on quality improvements than on expansion; and***
- . ***Take advantage of scale economies and increase the practice of multi-subject teaching to manage the high unit costs of service delivery.***

The balance between the lower and upper secondary cycles. The medium-term direction for secondary education development is less clear-cut than it is for either primary education or for vocational/technical education and post-secondary education. The problem becomes clearer, however, when the two cycles of secondary schooling are put in perspective. In most developing countries, lower secondary education is increasingly and rightly viewed as a natural continuation of primary schooling, and therefore a part of the basic education to which *all* children need access in order to acquire the skills to function productively as adults. In contrast, upper secondary education is more appropriately viewed as a prelude to higher educa-

tion, implying that its expansion should be driven by the same consideration of labor market absorption as for higher education itself.

Given the current and projected labor market conditions in Madagascar, it would appear prudent to keep enrollments in *upper secondary education*, particularly in the public sector, under somewhat firm control, with student selection based on merit and academic potential. At the same time, the restraint in terms of quantitative expansion could be matched with greater support for quality enhancements—through, for example, spending on pedagogical materials, libraries, laboratories, computers, and so on—geared toward producing graduates equipped with the skills to fill jobs in the modern economy. Because upper secondary education, like higher education, is largely a private good; its expansion through Madagascar's mostly self-financing private sector would make sense as a way to satisfy excess demand without over-burdening the state. To address equity concerns, however, the sector development strategy for secondary education could include provisions for financial support to bright students from poor families, whether in the form of scholarships to attend private schools, or bursaries to defray personal schooling costs in the public sector.

With regard to *lower secondary education*, it would be wise to proceed slowly, even if the intention is eventually to universalize this cycle of schooling as an integral part of basic education. The speed of expansion will, in any event, be constrained by the fact that currently only 33 percent of the country's first grade entrants reach the end of the primary cycle and that among the completers, 65 percent are already making the transition to lower secondary school. Furthermore, given that public resources for education will remain limited even after allowing for a reorientation of government spending in favor of the sector consistent with the country's poverty reduction efforts, overly rapid expansion of lower second-

ary education will mean adverse trade-offs against the demonstrably higher priority of investing to improve primary education. Here again, the government could adopt a two-pronged strategy. One prong would be geared toward supporting service delivery through the private sector under various arrangements for student finance, including subsidies to private schools under contractual arrangements for incremental expansion of enrollments, direct subsidies to deserving students from poor families to defray the cost of schooling whether they are enrolled in a public or private school, and so on. The other prong of the strategy would involve selective expansion of the public system to serve populations in difficult-to-reach localities where the private sector is unlikely to provide services.

Economies of scale in service delivery and cost management in small schools.

In both lower and upper secondary education, most schools in the system enroll relatively few students. On average, about 60 percent of the public lower secondary schools have fewer than 125 students (figure 5); the corresponding share among upper secondary schools is 47 percent. Given that unit costs decline sharply with enrollments, the predominance of small schools implies that the public system is relatively expensive as a whole. Figure 5 shows that unit costs average about FMG 300,000 per student in lower secondary schools with more than 400 students, compared with about FMG 600,000 in schools with 75 or fewer students. In upper secondary education, the unit cost differences are equally wide between large and small schools. In view of the strong economies of scale, it would be wise to minimize creating new schools for small catchment areas, and to consolidate existing small schools where

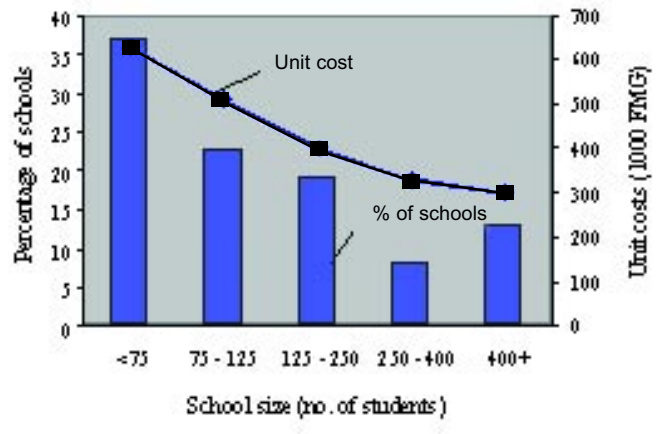
services are accessible in some localities. Yet even if one accepts this argument unreservedly, ways can still be found to contain the high unit costs of small schools, particularly by improving the efficiency of time use by teachers. The difference between public and private schools in this regard is particularly notable:

while the size distribution of enrollments is comparable across the two sectors, teaching loads are significantly lighter for teachers in public schools: in the lower secondary cycle they average 15 hours weekly compared with 19 hours for teachers in private schools; while in the upper secondary cycle, the corresponding loads are 18 and 12 hours weekly (table 4). The difference between the two sectors reflects the combined advantage of two arrangements in the private sector: (a) more of their teachers teach more than one subject; and (b) more of the schools combine lower and upper secondary education under one roof, making it possible to make fuller use of the specialist teachers on staff. Given that neither of these arrangements has compromised schooling outcomes, particularly student learning, it would seem reasonable to consider adapting these promising arrangements to contain the high cost of the public system.

Vocational and technical education and training

Major reforms, mostly relating to the overall management structure of the system, have been implemented recently, but more remains to be done to improve

Figure 5: Unit costs in public lower secondary schools according to size of enrollments



service delivery and its responsiveness to the demand for skilled labor. The sector study identifies the following as a key challenge in managing the public training system:

Rationalize the supply of training

services so as to reduce their high unit costs and align them more closely to labor market needs.

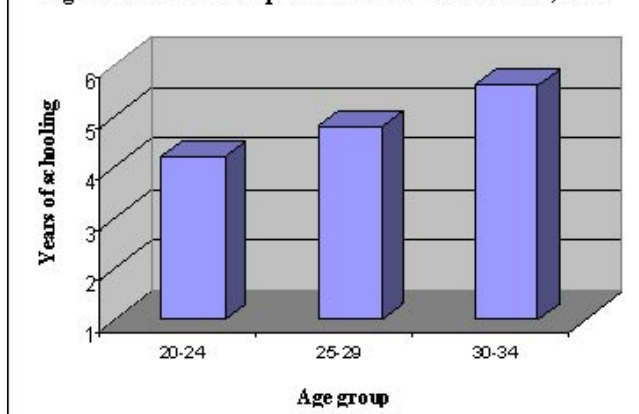
The need for training. Vocational and technical training occupies a relatively modest place in Madagascar’s education system at present, accounting for less than 6 percent of the students enrolled at the secondary level. Given the macroeconomic context, its share of enrollments is likely to remain modest over the medium term. The training system can nonetheless contribute to addressing the growing skills deficit among young workers, a problem that has emerged and will persist as a legacy of the weak performance of primary education over the years (figure 6). Given the diversity of training needs in this population, it would make sense to rely on flexible training arrangements, including competitive funding of public as well as private providers combined with transparent criteria and mechanisms to assess funding eligibility. At the same time, as flexibility is expanded, periodic evaluation of results and other appropriate measures to encourage accountability would be needed to ensure that funds

Table 4: Time utilisation of teachers in secondary schools, 1998

	Lower		Upper	
	Public	Private	Public	Private
Weekly teaching workload per teacher (hours)	15	19	13	18
Teachers teaching 2 subjects or more (%)	33	45	4	30

less be the only way to ensure that ser-

Figure 6: Educational qualification of the workforce, 1999



are indeed directed toward the desired outcomes.

The weak demand for public sector training and the system's mediocre internal efficiency. Despite the skills deficits implied by the foregoing profile of the workforce, public training institutions attract a weak demand. New entrants to the *centres formation professionnel (CFPs)*—institutions that offer lower level vocational training—have been falling for several years now, and the current annual intake hardly exceeds 500 new students; moreover, half of the entrants drop out of their courses by the end of the first year (table 5). The demand for places in the *lycées technique et professionnel (LTPs)*—institutions offering vocational training at the upper secondary level—is stronger, with about 15 percent of the BEPC-holders or around 2,700 students annually choosing this option after completing of their lower secondary education. However, fewer than 40 percent of the LTP students obtain the formal Baccalauréat certification at the end of the course. Even so, the labor market is currently unable to absorb

go on to higher education where most pursue programs totally unrelated to their specialization in the LTPs.

An overly fragmented "map" of training institutions. Relative to the demand, there is an over-supply of public institutions offering technical and vocational education. As a result, most of the institutions serve too few students to be able to deliver their services at a reasonable cost.

The average CFP enrolls fewer than 50 students and operates at only 60 percent of full capacity

(table 6). The

occupancy rate in the LTPs is generally higher, but their enrollments remain on the low side, with nearly half of the institutions serving fewer than 150 students each. Besides being fragmented, the supply of services, particularly in the CFPs, is also poorly diversified: 75 percent of the CFPs offer courses in only one or two specialties, while 50 percent of the LTPs offer fewer than four specialties. Moreover, none of the institutions appears to have a comparative advantage in any particular specialty. The lack of specialization and diversification across institutions is inevitably costly and inefficient: it results in duplication of course offerings in multiple locations each enrolling very few students, and in the absence of courses, such as agriculture in the CFPs, that

Table 6: Supply characteristics of public vocational and technical education, 1999

	CFP	LTP
No. of schools	34	26
Average no. of students per school	49	326
No. of school by size of enrollments		
Less than 25 students	12	-
25 to 49	10	1
50 to 99	9	6
100 to 149	-	5
150 or more	3	14
% of capacity utilized (%)	56	80
No. of school by no. of programs offered		
1	10	1
2	15	5
3	7	8
4 or more	2	12
Index of specialization ^a	17	11
Student to staff ratios		
Teaching staff	5	10
Non-teaching staff		8
14		
Unit cost (in millions of FMG)	1.9	1.0

^a: Average of the indices of individuals schools ; the index ranges from 0, denoting an unspecialized school, to 100, denoting a school that is highly

Table 5: Students in public vocational and technical education, 1998-99

	CFP	LTP
Public sector share of enrollments (%)	25	51
Entry rate (%) ^a	0.6	14.6
Number of new entrants	503	2,678
Total number of students	1,674	8,477
Dropout rate at the end of the 1st year (%)	52	4
Survival rate to the end of the cycle (%)	39	35
Transition rate to higher education (%)	-	30

^a/ New entrants as a percentage of holders of pre-requisite qualification.

might be more relevant to the needs of Madagascar's predominantly agricultural economy.

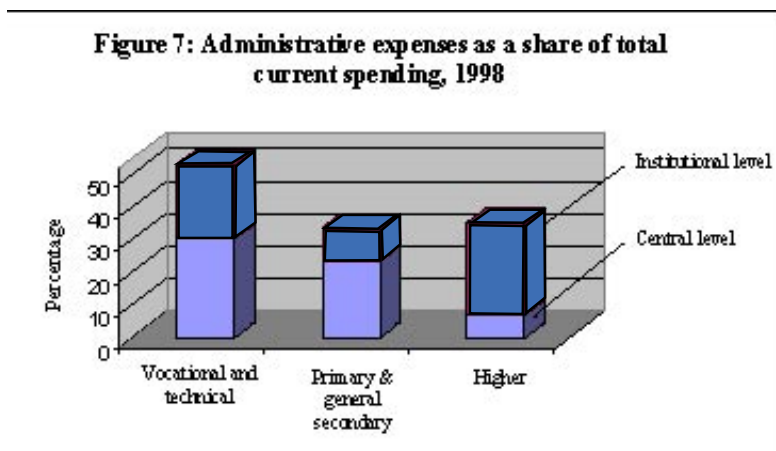
Because the system is overly fragmented and individual institutions are under-utilized due to weak demand, operating costs are high everywhere, and exorbitantly so in the CFPs. The cost per student in the latter institutions is on the order of FMG 2,000,000, about five times the unit cost of lower secondary education. Cross-country data suggest that vocational and technical educa-

tion is twice as costly in Madagascar as in other low-income countries, the unfavorable comparison reflecting an excess of administrative and technical support personnel who clearly are not central to service delivery. Absent a deep restructuring of the network of institutions offering vocational and technical training (particularly the CFPs), it would be difficult to reduce the high unit costs of the system. Such a restructuring could perhaps be centered around a few promising institutions, especially some of the LTPs. The consolidation would help to reduce costs and allow for greater specialization across institutions, while also facilitating greater diversification in course offerings.

A top-heavy and hence costly structure for system management. Aside from the high administrative costs at the level of individual institutions, such costs are also high for the system as a whole. Administrative personnel at the central and regional levels absorbs nearly one third of the total public budget for vocational and technical education; and the cost of these administrative expenses averages around FMG 550,000 per student, which is about ten times the corresponding cost in primary education, and three times that in general secondary education and in higher education. Administrative costs at the level of the institutions themselves are also high, accounting for more than 20 percent of the public spending on vocational and technical education. In total, administrative expenses at all levels absorb nearly 50 percent of the sector's budget, far more than in the other sub-sectors (figure 7).

Higher education

Significant reforms were implemented during the 1990s in this sub-sector. They led to a profound shift in the distribution of public spending on education, with the share of higher education falling from 32 percent at the start of the decade, to around 13 percent by 2000. As a result of the reforms, the institutional composition of the sub-sector has been diversified—a major benefit in and of itself—and the overall size of enroll-



ments in higher education and public spending on student welfare have been brought under control. These gains notwithstanding, further reforms are needed to improve the internal as well as external efficiency of the system. As a direct service provider, the government faces the following key challenges:

- ***Rationalize the system's structure to improve the quality of services as well as its responsiveness to the demand for skills on the labor market; and***
- ***Improve personnel management, particularly the system for compensating overtime teaching, and the use of administrative and technical staff (PATs).***

The system's lagging internal and external efficiency. Of the 30,000 students in higher education, 58 percent are enrolled in the public universities, 11 percent are in the specialized schools and institutes attached to the universities, 24 percent are in distance education, and the remaining 7 percent are in private institutions. In

the public sector, a system of pre-selection for entry into almost all programs was put in place at the start of the 1990s, contributing to the substantial improvement in the internal operations of the system. Despite these gains, however, repetition and dropout rates remain high in certain institutions. In the university faculties, more than a third of the students in a class are repeaters, and barely 30 percent of the entrants, on average, reach the end of the second cycle (i.e. fourth year of their studies; see table 7). The performance of distance education is particularly weak, with nearly 80 percent of the students dropping out after only the first year of study, and fewer than 5 percent surviving long enough to obtain their diplomas.

The public sector currently produces around 3,700 graduates a year, far too many relative to the labor market's absorptive capacity of at most between 2,000 and 2,500 new workers annually with university-level training. As there are no obvious signs that the pace of job creation would pick up significantly in

Table 7: Enrollments in higher education, 1998-99^a

	No. of students	Repetition rate	Dropout rate in the first year	Survival rate
University faculties	17,409	22	38	28
Ecoles & Instituts	2,914	8	16	53
IST	373	2	8	92
CNTEMAD(Distance)	7,279	16	78	5
Private institutions	2,086	1	-	-

a: The rates are expressed in percentages.

the coming years, it would be prudent to manage the expansion of higher education closely while allowing labor market needs to dictate the composition of enrollments. To the extent that the internal efficiency of higher education improves, which is in itself a desirable outcome, the expansion of higher education would need to be even more tightly managed to avoid exacerbating the current over-production of graduates. In designing course offerings, it is particularly important to take explicit account of the nature of the economy's demand for skilled workers. In this context, the lack of success with the "professionalized" courses that were recently launched by the university faculties, supposedly geared toward specific labor market needs, suggests that in fact these institutions have great difficulty in rationalizing their new course offerings.

An overly-fragmented and under-specialized "university map". The public supply of higher education, especially in the university faculty sector, is highly unbalanced at present. With nearly 12,000 students, the University of Antananarivo alone accounts for nearly 70 percent of the students enrolled in the faculties, while the University of Antsiranana enrolls only 400 students; enrollments at the remaining universities lie between these extremes, but all of them serve far too few students to benefit from economies of scale in service delivery (table 8). Thus, in some of the university faculties, annual unit costs can go up as high as FMG 2,000,000 per student (nearly 7 times the starting monthly pay of a primary school teacher in salary grade II). In the specialized schools and institutes attached to the universities where enrollments are generally smaller still, the costs can exceed FMG 7,000,000 per student. The provincial universities not only enroll very few students in a small number of programs, they also appear to have a comparative advantage in no particular field. The lack of specialization inevitably raises unit costs, since it means that identical programs are offered in several universities, with each program catering

Table 8: Supply characteristics of the university faculty sector, 1998-99

	Number of students ^q	No. of programs	Index of specialization ^a	No of students per program	
				Average	Minimum
Antananarivo	11,699		20	100	
585	32				
Antsiranana	400	2	53		200
174					
Fianarantsoa	1,483	4	91		371
63					
Mahajanga	1,171	3	84		390
49					
Toamasina	1,706	6	75		284

to a limited number of students.

Under the circumstances, a reconfiguration of the "university map" would seem appropriate in order to rationalize program offerings across institutions, and to ensure that new programs are carefully evaluated before they are introduced, taking into account the current supply as well as the demand for them. To be efficient, these measures should be considered as part of a national rather than regional plan, along with a redefinition of student aid policy to address equity concerns. At present, the student aid policy is in fact highly inequitable, with most of the students coming from the better off income groups. Over the course of the 1990s, the average size of the grants has declined, but the share of students who receive a grant—already high to begin with at the start of the decade—rose by

between 13 and 52 percent depending on field of study. A student aid policy that is so unselective, with widespread coverage even for fields of study whose graduates have great difficulty landing suitable jobs, is hardly compatible with attempts to increase the system's external efficiency.

Weak management of over-time teaching and non-teaching personnel (PATs). Following the policies implemented in the early 1990s to manage enrollments in higher education, the student-faculty ratio in the public sector become considerably more favorable, falling from 38:1 in 1990, to 22:1 by 1998. However, the official work load of teachers make up only a small part—about 20 percent on average—of the total number of hours that teachers actually teach, the difference being paid for as overtime work

Table 9: Volume of overtime teaching, 1997-98

Number of hours of overtime teaching (in thousands)	325
Change in no. of hours of overtime teaching since 1992 (%)	
Antananarivo	+21
Antsiranana	+53
Fianarantsoa	-27
Mahajanga	+99
Toamasina	+1
Toliara	-10
All universities	+18
Increase since 1992 (in %) in:	
Rate of compensation for overtime teaching	162
Base salary of higher education teachers	1
Number of permanent teaching staff	953
Overtime teaching hours in terms of permanent teaching posts	3,500
Student-faculty ratios	
Relative to no. of permanent teachers	22
After adjusting for overtime teaching	5

under the system of “heures complémentaires.” Between 1992 and 1998, the rate of compensation for overtime teaching rose substantially (by about 160 percent in real terms) while base salaries stagnated. These trends led to a significant increase in the volume of overtime teaching—almost a doubling in some universities—even though enrollments did not increase (table 9). Converted into regular teaching loads, the volume of overtime teaching is equivalent to about 3,500 permanent teaching positions, which implies an effective student-faculty ratio of about 5 students per teacher. The system clearly faces a serious problem in the management of overtime remuneration, and a tightening of the arrangements, including the imposition of a ceiling on the amount of overtime teaching that individual staff may deliver, would appear appropriate to minimize the adverse effects on the system’s future development.

Aside from the foregoing problem, higher education in Madagascar is also overburdened with a chronic excess of administrative and technical staff (*personnel administratives et techniques*, PATs). Currently, 3,600 PATs are on the payroll of the public universities, accounting for nearly 80 percent of all staff (table 10)

education system

Throughout this paper, reference was made to various management weaknesses in the education system. The problems include: (a) inadequate personnel administration and management, as reflected in the inconsistencies in teacher allocation across schools (particularly primary schools, and the chronic surplus of PATs and lack of discipline in the arrangements for overtime teaching in higher education; (b) poor time management by teachers and students arising from inefficient implementation of multi-grade teaching in primary schools and the prevalence of single-subject teaching in secondary schools; (c) loose management of teaching and learning processes, at both the primary and secondary levels, as suggested by the weak relation between funding for schools and learning outcomes; and (d) inefficient organization of the systems for delivering vocational and technical training and higher education, as reflected in the duplication of programs across institutions where consolidation and specialization would help lower unit costs and allow the systems to achieve greater diversification in course offerings.

Paradoxically, in a system characterized by obvious signs of being poorly man-

suggests that significant strengthening of management effectiveness needs to be made a top priority in the overall sector development strategy. The idea is not so much to seek an immediate reduction in the amount of spent on administration, though that may well be an appropriate objective for the longer-term, but to identify better ways of using the currently available resources and personnel to improve the way the system functions and delivers services.

Mobilizing an effective response to the challenges

The prospects for educational development are as promising as they are fragile in Madagascar today. With public spending on education as a percentage of the GDP anticipated to rise by 40 percent between 2000 and 2003, it is entirely feasible to achieve substantial and tangible progress in education, particularly in terms of service delivery to the poor. Yet the risk of wastage cannot be ignored, given the speed of the projected rise in spending. The challenge therefore is for policy makers to seize the opportunity created by the favorable budgetary context to put in place a solid foundation for efficient and equitable expansion of the system over the medium- and long-term. We can expect the right policy choices to yield an enduring win-win situation, enabling Madagascar to re-establish itself as a leader in education among low-income countries. The main policy challenges that emerge from the education sector study are summarized in table 11 below. How can the government mobilize an effective response to these challenges?

Building a broadly-shared consensus on the nature of the challenges in education as well as possible solutions to address them will obviously be a key ingredient. The process is not new, and has indeed been used in the course of elaborating the government’s ongoing PNAE2. Because the sector study brings to light additional information that can help to refine and

Table 10: Administrative and technical support staff (PATs)

	Number	Ratio of students to PATs
Number of PATs in 1998		
By university		
Antananarivo	2,486	6
Antsiranana	216	4
Fianarantsoa	239	7
Mahajanga	154	8
Toamasina	288	6
Toliara	191	6
All universities	3,574	6
IST	70	5
CNTEMAD	93	86
Trend in the universities:		
1990	4,146	9
1996	3,493	5
1997	3,607	6
1998	3,574	6

resources are in fact
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medium- to long-term sector development strategy, a fresh round of consultation on the new findings and their policy implications can help to clarify the way forward. Further, because the education sector figures so prominently in the country's poverty reduction strategy, the relevant circle of consultation has necessarily grown to include a larger public. The process of consultation has already begun, with dissemination of the study's findings among staff in the three ministries at the central and other levels, among the directors of various establishments, as well as among donors and other partners in education. It is a process that could continue with benefit, particularly to inform the design of a concrete, realistic and coherent plan of action for sector development as part of the process of developing the government's strategy for poverty reduction.

Because resources will remain limited even in the current favorable budgetary climate for education, trade-offs among alternative policy options will inevitably present themselves, and must therefore be clarified and managed carefully. The fact that education is organized under three separate ministries, and that related services such as non-formal and pre-school education belong to yet two other ministries means that tradeoffs across the various sub-sectors will necessarily require arbitration beyond the ministerial level. Yet within each of the three education ministries, important tradeoffs also exist. Aside from considerations of cost and benefits, those of timing and sequencing will also be pertinent in weighing the choices. For example, even though basic education should ideally comprise primary and lower secondary education, the current very low survival rates in the first cycle leave no doubt as to the priority in the immediate future between the two cycles of schooling. In assessing the options, lessons from policy innovations in other countries are an important source of ideas, but the inno-

vations must obviously be adapted to the reality of Madagascar's current level of development as well as the capacity of its social and institutional infrastructure.

Finally, creating a system of continuous monitoring and evaluation will be essential in mobilizing an effective response to the challenges. Many of the measures needed to address the key challenges will require consistent and persistent effort over time. Moreover, their impact are often difficult, if not impossible, to anticipate fully. An arrangement to track policy implementation and its outcome is thus critical to ensure that faulty assumptions in policy design and unexpected problems during implementation are rectified in the process. Such a system would also help to create greater accountability for results, by setting explicit benchmarks and agreed targets against which progress can be tracked.

Many of the ingredients for mobilizing a successful response to the challenges in education are in fact already in place. Most importantly, the government has made explicit its commitment to poverty reduction, and each of the three ministries have launched significant reforms in recent years to improve service delivery. Persisting with the best of these reforms, and further clarifying other measures needed to reinforce them will undoubtedly contribute to enhancing educational outcomes in Madagascar, benefiting young people everywhere in the country, but especially those from poor families in rural areas.

*I*mprove personnel management, particularly the system for compensating overtime teaching, and the use of administrative and technical staff (PATs).

Table 11: Summary of the key challenges

Overall sector strategy	Universalize basic education of reasonable quality while closely linking expansion of other levels and types of education and training to labor market demand
Primary education	Improve survival rates to the end of the primary cycle and reduce grade repetition. Rationalize teacher allocation across schools and enhance the efficiency of time utilization by teachers.
	Enhance student learning by ensuring adequate provision of teaching materials, but especially by improving management of the pedagogical process.
Secondary education	Expand lower secondary enrollments at a moderate pace, while in the upper secondary cycle, focus more on quality improvements than on expansion.
	Take advantage of scale economies and increase the practice of multi-subject teaching to manage the high unit costs of service delivery.
Vocational/technical education	Rationalize the supply of training services so as to reduce their high unit costs and align them more closely to labor market needs.
	Rationalize the system's structure to improve its quality and responsiveness to the demand for

NEWS IN BRIEF

Francophone Workshop on Educational Planning and Economic Development, Dakar, 28 - 31 January 2003

A highly successful workshop was held in Dakar, Senegal. The main objective of the workshop was to test and further develop the modules developed through the previous two workshops with specific application to francophone countries. 20 experts drawn from Guinea, Mali, Mauritania, Niger, Rwanda, Senegal and Togo. Participating organizations included the Institute for Economic Development and Planning (IDEP), the Association for the Development of Education in Africa (ADEA), the Council for the Development of Social Science Research in Africa (CODESRIA), the Economic Commission for Africa (ECA) and the UNESCO International Institute for Educational Planning (IIEP).

One of the major findings was that the proposed programme coincided to some extent with the training programme of the ADEA Working Group on Education and Finance. Three of the participants were selected to join the IICBA Technical Working Group. These were Dr. Mohamed Cherif from CODESRIA,

Mr. Valdiodio Ndiaye from Universite Chiekh Anta Diop and Ms. Khadij Mohamed Salem from Mauritania.

Planning for IICBA's Programmes in Ghana, 3 - 7 February 2003

IICBA Director, Dr. Fay Chung, and Senior Education Programme Officer, Prof. Almaz Eshete, participated in a planning visit to Ghana with a view to expanding IICBA's programmes in Ethiopia. Agreement was reached with both University of the Cape Coast and with Winneba University to establish two programmes. The first programme was the Indira Gandhi National Open University Postgraduate Diploma and Master's degree on distance education. The two universities already had highly developed and large scale distance education programmes for teachers, but only a few of their staff had received formal training in distance education, so they were very pleased with the prospect of having the opportunity to enrol in these two programmes. The second agreed programme was the two week training on how to make a CD ROM and a website. It was agreed to do a course of each of these universities. It was also agreed that the Ghana Film Institute would be approached to provide a short course for

the teacher educators from the two universities on how to make an educational video.

Multigrade Textbook Writing Workshops, Addis Ababa and Nazareth, Ethiopia, February - March 2003

The Multigrade Programme was initiated by IICBA as a pilot programme in Ethiopia in 1999. Up till now 5 schools have been established in two regions of Ethiopia, viz, Oromia and Amhara Regions, each of which has over 15 million inhabitants, with many children in remote rural areas being deprived of schooling because of the vast distances they have to travel to school. The programme is of particular importance for the education of girls, as walking long distances, often more than 20 kilometres a day to and from school, has proved a serious threat to adolescent girls, who may be subjected not only to sexual harassment, but also to abduction. The Multigrade Programme, which has been coordinated by Dr. Wana Leka, seeks to provide small one teacher village schools, where one teacher can teach several grades within the same classroom. Initially these schools catered only for Grades 1 and 2. Major inputs

coordinated by IICBA have included school construction utilizing local materials and with the help of the local community; community control and decision-making; improvement of the textbooks to make them more amenable to interactive pupil controlled learning; teacher training; and orientation programmes for school administrators at regional, zonal and district levels. After the initiation of the programme unfortunately funds originally promised were, for various reasons, halted, this in the face of mounting demands from the communities which had been involved in the initial pilot project. In addition communities from all over Ethiopia began to make demands for the establishment of similar programmes in their areas.

Fortunately UNICEF has stepped in to fund the two regions to continue the programme, and IICBA has been assisting in providing training on textbook writing. Training workshops were held in February and March 2003, and the two regions are in the process of completing the Grades 3 and 4 textbooks. These will be published by UNICEF.

HIV/AIDS Workshops on Use of IICBA Video and Print Materials, Addis Ababa, March 2003

A two day workshop was held for educators and NGOs working on HIV/AIDS to familiarize them with the educational materials which can be used for the education of young people both in a school context and for youth groups outside of school. IICBA, together with the BESO USAID Programme, has developed a teachers' manual in Amhaeric. In addition four videos have been developed in Amhaeric with English sub-titles for use in discussion groups.

CIEFFA and NEPAD Meetings, Ouagadougou, Burkina Faso, 3 - 7

March 2003

The UNESCO sponsored Centre International pour l'Education des Filles et des Femmes en Afrique (CIEFFA) held an important planning workshop attended by representatives from almost all francophone countries in West, Central and East Africa, to discuss its Plan of Action. Very useful consultations took place. A decision was taken to ensure that the Plan of Action is revised to include the suggestions of the participants. It was also agreed that this would be put before a meeting of interested Ministers of Education from Africa during the next Executive Board and General Conference of UNESCO so that CIEFFA can be officially launched.

UNESCO held a meeting on the New Partnership for Africa's Development (NEPAD) during the same week. This was attended by Paris and Cluster and Regional Office Directors from all over Africa. One of the most important outcomes was the decision by UNESCO Directors regarding the areas of focus in UNESCO's work on NEPAD. These were:

IICBA Planning Visit to South Africa, 17 - 21 March 2003

IICBA represented by IICBA Director, Dr. Fay Chung, Deputy Director, Dr. Joseph Ngu and Educational Planning Coordinator, Mr. Atsushi Matachi, paid a one week planning visit to South Africa. They were also accompanied by Prof. Habtamu Zewdie, IICBA consultant. Achievements during this visit included:

- Interviews and selection of a head for the IICBA Node to be located at the Faculty of Education, University of Pretoria. Dr. Thidziambi Pendla was selected, and will take up her

duties shortly. The agreement is that the Faculty of Education, under Prof. Jonathan Jensen, will assist IICBA in initiating and coordinating programmes in key areas involving educational institutions in the region, with particular emphasis on S. African institutions.

- Meetings with Witswatersrand University staff regarding their possible participation in IICBA's planned Educational Planning and Economic Development programme. Useful exploratory meetings were held.
- Exploration of the possibility of transplanting the University of Pretoria M. Ed. degree programme which is under Prof. Johannes Cronje, to other African universities. The programme is already in the process of being transferred to the Sudan University of Science and Technology (SUST) with assistance from IICBA. Prof. Habtamu Zewdie is in the process of exploring on behalf of IICBA possible extension of this programme to three other African universities.
- Exploration of M. Ed. Assessment of Learning of the University of Pretoria. IICBA also began exploration of utilization of the University of Pretoria M. Ed. Assessment of Learning programme under Prof. Sarah Howie. This is in line with IICBA's present commitment to the measurement of the learning of science and mathematics at upper primary and lower secondary school levels in Africa.

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