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RESOURCES FOR EDUCATION AND THEIR COST-EFFECTIVE USE

LOCATING UNTAPPED RESOURCES FOR EDUCATION

Working Paper
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RESOURCES AND THEIR COST-EFFECTIVE USE:
LOCATING UNTAPPED RESOURCES FOR EDUCATION

INTRODUCTION

1. Education systems are operating under severe financial constraints. In most Commonwealth countries demand for education is strong and unsatisfied, and the authorities have a long agenda of qualitative improvements which they would like to introduce. But there is no room within national budgets to satisfy these demands.

2. There are five main possible ways out of this impasse:

i. to raise additional resources, financial and in kind, for education

ii. to increase the purchasing power of the education budget by buying education inputs more cheaply

iii. to reduce the level of services provided

iv. to use the resources for education, particularly teachers and buildings, more efficiently within systems as they are at present

v. to adopt radically new systems and technologies of education.

The first of these approaches involves attempts to increase the supply of resources. The second could be regarded as both supply-increasing and demand-reducing. The third and fourth would involve reducing demand. These four are in no sense mutually exclusive. Even the last approach is more amenable to piecemeal introduction than it might appear, so it is not a complete alternative to the others. The paper discusses each of the five strategies in turn and a final Appendix provides a summary list of measures to close the resource gap in education.

3. This paper concentrates most attention on the first and fourth of these strategies, which correspond to the title themes of the Conference. It touches only lightly and extremely briefly on the last of the five approaches. But even within the context of present systems and technologies a basic conclusion is that there are unexploited resources to be tapped for educational development. This is in spite of the fact that the traditional sources of financial and material inputs for education cannot be counted on to increase substantially in real terms in the years ahead. The most important of the resources still to be exploited are not additional public and private monies lying elsewhere in the economy and society, though efforts to locate and tap such resources must certainly continue. Rather the greatest potential is that which lies under our noses in the education system itself, and in particular

(a) resources within schools and colleges, notably teachers and buildings, that are not presently being used with maximum efficiency and

- (b) students' own capacity for independent learning.

To take advantage of each of these requires a careful examination of the incentive system operating in the education system. A particular need is to create a situation where education managers in ministries, schools and colleges are motivated to maximise the productivity of expenditure on education.

4. The background to the discussion is the growing pressure on resources. Educational expenditure has been increasing, for several well understood reasons:

- i. above all, the growth of enrolment, reflecting both the rising school-age population in most Commonwealth countries (though no longer in all age groups in the more industrialised ones) and higher school participation rates among those expanded populations
- ii. rising prices of goods, materials and services used in education including upward revisions of salary scales
- iii. in less developed countries a tendency for average unit costs to rise as the result of attempting to enrol ever more marginal and remote groups of learners, in the course of efforts to attain universality of attendance
- iv. in some industrialised countries a rise in unit costs in situations of falling rolls where the teacher numbers and buildings cannot be reduced at the same rate as the numbers of pupils drop.
- v. the inevitable shift in the balance of enrolments towards the more expensive secondary and higher education levels and towards more costly specialised disciplines with a technical and vocational orientation
- vi. the effect on the salaries budget of a better qualified teaching force. This effect is particularly marked in cases where teachers are paid differential amounts principally according to their qualifications, rather than their actual seniority or job responsibilities. If formal education qualifications among entrants to the teaching profession are rising, any close link between qualifications and pay implies automatic increases in average salaries of teachers.
- vii. improvement and extension of educational provision, including longer periods of schooling, higher allocations of resources per class and per student, and new services and schemes.
- viii. in some countries a higher proportion of the education system than hitherto is now publicly managed, following absorption of private schools into the state system (though this paper will also note some recent contrary trends).

I. RAISING ADDITIONAL RESOURCES FOR EDUCATION

One can consider this in terms of (a) finance (b) non-financial resources.

I.A. FINDING EXTRA MONEY

5. The education authorities would naturally like to meet increased educational costs by raising more money for education. Indeed educational expenditure continues to rise almost everywhere in real terms. The only countries that may find it possible to reduce the amount of real resources spent on education and training are those whose education systems are now contracting in size, mainly for demographic reasons.

6. In seeking additional funds for education one can look in four main directions:

- i. Additional domestic public revenue
- ii. Private sources including firms, foundations, and individuals
- iii. Education institutions' own earnings
- iv. Receipt of development assistance.

I.A (i) Additional Domestic Public Revenue

7. The absolute volume of resources devoted to education may increase, but will it rise in line with the increased needs and demand? In only a very few countries does it seem likely that the proportion of education budgets devoted to education and training will continue to rise as dramatically as a decade or two ago. The great increase in public spending on education, in absolute terms and as a proportion of both national budget and GNP, between the 1950s and early 1970s was largely associated with growth of school-age population and rising expectations of access to education on the part of the population. In less developed Commonwealth countries the advent of independence strongly reinforced the pressures of demand. Education was much higher in the list of priorities for newly independent governments, conscious of manpower requirements for localisation and economic growth and responsive to the wishes of their electorates, than had been the case with their colonial predecessors. The same pressures are observable today, for example in Zimbabwe, which has raised quite dramatically the proportion of its budget and GNP devoted to education. But in less developed Commonwealth countries which have been independent for longer periods, the rate of growth in educational spending has tended to taper off.

8. Generally the economies of Commonwealth countries are under great strain, public indebtedness is rising, and additional resources for education are not at all easy to come by. Moreover the claims on public expenditure from other sectors are high. In particular defence and security, and the repayment of external debts, have been claiming larger proportions of public expenditure than hitherto, leaving a smaller share available for social services like education. It remains true that although the main source

of any extra expenditure devoted to education will probably continue to be public tax revenues and public borrowing, these are not likely to be sufficient to relieve the sense of severe financial constraint besetting education nearly everywhere.

I.A (ii) Private Sources

Contributions to State Education

9. The possibilities of private contributions to education are basically of two kinds: first that individuals and private organisations will contribute to the public sector of education by means other than taxes, and second that the non-government sector of education may expand its operations. The major non-tax source of private contributions to the public education system is fees and charges levied directly on students and their families. Generally the trend has been to phase out tuition fee payments in public education for those levels of schooling where attendance is more or less universal. It appears both fairer and more efficient to use tax revenues for funding in these cases. But even at these universal levels the education authorities increasingly find themselves having to impose on students and parents direct charges for textbooks, learning materials, sports and games, music, development funds etc., to meet some of the material costs of operating schools.

10. At the higher levels of the education system, where educational opportunity has to be rationed, a stronger case is found for levying charges on students or their families. Such education confers on the fortunate minority considerably better earning opportunities than the majority of the population enjoys. To the extent that the benefits of their education are thus privately appropriable and can be 'captured' by individuals in the form of subsequent higher earning power, it seems more justifiable to ask students to contribute towards the cost of their education. However it does not necessarily follow that there should be a full-cost charge, since the privately appropriable benefits are not the only benefits. Broad public benefits also accrue to society from educating its young people. The logic of this case, recently argued by the Commonwealth Standing Committee on Student Mobility, is not always accepted in respect of students from abroad. Some countries have very considerably increased their revenue from education by raising tuition fees for overseas students, though not without imposing costs on other governments and - to the extent that students from abroad have been driven away - causing loss of benefit to themselves.

11. The imposition of tuition charges on home students meets strong political resistance. This opposition may not extend so fiercely to board and lodging charges perhaps because people see that families would in any case have to bear these expenditures were their children not enrolled at an education institution. A number of countries therefore require students to pay completely or partially for board and lodging, offering scholarships and bursaries to help those who are most hard-pressed financially.

12. A new financial device being applied increasingly in respect both of living costs and, sometimes, tuition fees is the student loan scheme. A recent World Bank study has reviewed

experiences with such schemes, and concluded that they are feasible in developing countries, but need to be well planned. They are certainly no substitute for other cost reduction measures, and produce only marginal - if any - savings at first. It goes without saying that student loans are more acceptable to the population at large when they involve assisting students to cover types of expenditure that they are already obliged to meet, than when they are introduced concurrently with charges for services that students previously received free.

13. Other private financial contributions to the education sector may come from religious organisations, charitable foundations and trusts, firms and individual donors. Associations of former students, and parents' associations, have been prominent in raising funds. In some countries collective efforts by village communities also constitute important sources of recurrent expenditure for schools. But such fund raising from private sources is generally earmarked for equipment and materials or for renovating school buildings and constructing additional facilities; the ongoing salary costs for teachers and other staff in state schools cannot normally be financed in this way.

Development of the Independent Sector

14. Resources for education may also be found through the expansion of the independent sector of education itself. Private schooling covers a great variety of different types of institution. There are schools under the sponsorship of religious bodies; schools run by trusts, including international schools; community schools financed by voluntary contributions and fees; schools and training establishments run by economic enterprises; private proprietorial institutions seeking to make a profit; schools organised by minorities. Yet other varieties may be found outside these main groups. In some countries a large part of the school system is managed or owned by non-government bodies. There are few private universities in the Commonwealth, but at secondary level one finds much wider private provision. In Bangladesh, as an example, a large part of the secondary system is in non-government hands. Some private provision is found at the primary level and nearly everywhere a large part of nursery schooling is in non-government hands. Beyond the regular school system most countries have extensive private systems of commercial training, training schemes in firms and private tutorial colleges.

15. The extent of the independent sector of education is not simply a matter of low public confidence in the state systems, though that may account for the increasing resort to private education in some countries. Actually it is difficult to generalise about private sector quality in relation to the public sector; in several countries the private sector contains both prestigious schools of high quality but also some of the worst educational institutions. Recourse to poor quality private schools may be forced on parents by lack of state facilities. Equally communities, recognising government's inability to make adequate school provision at primary or secondary level, may take matters into their own hands by starting voluntary unaided schools, awaiting the day when governments will be able to take these schools over. This has been a very noticeable tendency in parts of East Africa where Kenya's 'harambee' schools are perhaps the best-known example.

16. Countries will take different views on the desirability of encouraging private schooling, according to their political philosophy. But many governments appear to have come to the view in times of financial stringency that private and voluntary efforts can be a useful complement to their own programme. Much thought however needs to be given to the best ways of marrying government with private and community funding, and to defining the correct balance between the autonomy of decision making by independent school management bodies on the one hand, and the need to ensure that they behave in a socially responsible manner towards the students and parents they serve. Can support for self-reliance initiatives be reconciled with the maintenance of equality of opportunity for example, given that wealthier communities are able to be more self-reliant? Member countries of the Commonwealth have rich experience in this area and the Conference may see merit in developing an exchange of comparative experience of Commonwealth countries in the regulation and supervision of community and other private schools.

17. One cannot leave private education without mentioning the great expansion of private coaching/tutoring in many parts of the Commonwealth. The resort to private tutoring is fuelled by anxiety over examinations on the part of students and parents and some loss of confidence perhaps in the ability of the public system of schooling to 'deliver' exam passes. Teachers for their part, under the pressure of falling real salaries which fail to keep pace with inflation, are eager to increase their earnings from this source. A demand from well-to-do and even average income parents for access to extra tuition for their children is matched by the need on the side of teachers to earn extra income from coaching and private tuition. A system grows up which is little talked about but which, at least in the towns of some countries, begins to rival the formal school system in terms of the amount of teacher effort and parental funds invested in it. The strain of long hours in the classroom for both pupils and teachers is a disturbing phenomenon, but reform is obviously difficult when both teachers and parents find the private tuition system necessary and mutually convenient.

I.A. (iii) Education Institutions' Own Earnings

18. A few weeks ago a small paragraph appeared in the British press announcing that seven universities in the United Kingdom were now each earning over £1 million a year from letting out of premises for conferences and other activities. The same possibilities would not necessarily exist in countries where there is no large private and non-government sector with organisations actively seeking venues, conferences and courses. However it is but one example of a widening trend for educational institutions to examine ways of raising revenue to support themselves. Much of this revenue-raising effort is comparatively low-level local activity in the form of school social events and open days often in conjunction with parents and the local community. One must regard all these activities as a small but useful source of finance at institutional level, but as of only marginal importance for the system as a whole.

19. In several countries schools and colleges also raise revenue through production units, having a part-training and part-revenue raising function. The Country Papers refer briefly to some examples. But where such cases have been more fully written up, there generally seems to be more information on the value or quantity of the output produced, than on costs, including the commitment of unpaid staff. Consequently it is not always clear whether such activities are in fact cost-effective. To the extent that the production of goods and revenues is meant to be incidental to an education and training function, economic and financial viability is perhaps a secondary consideration. But where education institutions are required as a matter of policy to meet a large part of their revenue needs from economic activities, a full financial costing is indispensable. This is another area where case studies would be useful, to identify the kind of conditions under which school production can be a profitable source of finance for education.

I.A. (iv) Receipt of Development Assistance

20. The outlook for foreign funding of education is not particularly good. It appears that the world community will be hard put to it to sustain educational assistance at its present levels, and there will certainly not be much prospect of short-falls in funds being met from this source. World Bank funds have been under considerable strain, and there are current difficulties over the International Development Association's (IDA) replenishment of funds. Regional development banks are becoming more active in education, usually in vocational education. Development assistance is quite crucial in some smaller countries, with low public revenues and shortage of foreign exchange. But there are basic difficulties in using foreign aid for education. Usually the funds are tied to imports whereas much of the finance needed by education systems is for local costs. There is also a bewildering variety of different programmes and agencies and it is not easy for small countries to keep in touch with possible sources of help. One of the roles that the Commonwealth Secretariat can perhaps most usefully play is as a broker, helping to bring together needs and resources in the field of international educational assistance.

I.B. TAPPING RESOURCES IN KIND

21. Financial resources are seldom 'spare', since they can quickly be diverted to some alternative use and both public and private organisations have many priorities for the spending of funds. Are there however resources in kind to be tapped, free of charge or at very low cost?

22. The principal such resource is the time that parents and voluntary workers may be able to give free of charge to the education system. Volunteers may be used in schools and in non-formal education activities, such as adult literacy programmes and programmes for youth. Not all of the available help is sufficiently expert or specialised to be fully effective, and training of volunteer personnel may be required if full advantage is to be taken of the resources offered. For example, training in pedagogical and communication skills is valuable if it is intended to use local craftsmen to instruct in practical

subjects in schools.

23. Military personnel or national servicemen may possibly contribute another source of 'free' labour for education. In several instances national service schemes are used to help to staff schools and to run literacy classes.

24. Personnel are not the only resources which education may hope to tap on a below-cost basis. Church buildings or community halls may be offered for schools and nursery classes. Unused open ground may be available for use as playing fields. Even specialised recreational facilities like football pitches, tennis courts, gymnasias, swimming pools may be available in school hours for educational use at times which do not conflict with community demands on the facilities, these being mainly in evenings and weekends. Waste products from factories could provide materials for use in the classroom. The radio and television station perhaps has air time which can be made available at marginal cost to education, because the basic overheads and running costs of the broadcasting service are already covered by regular programmes.

25. There are many opportunities in this area for enriching the life of the school both by securing access to amenities and at the same time bringing schools and colleges into closer working relationships with the community. It needs an entrepreneurial head of institution to see the opportunities and to seize them, and it is experienced heads closely linked with the community in which their institution is located who will be most successful. Are heads given sufficient freedom to engage in activities of this kind?

II. BUYING EDUCATION INPUTS MORE CHEAPLY

26. In the introduction to this paper many factors causing cost escalation in education were noted, one of which was rising prices. Could this process be reversed and countervailing price reductions be achieved? Bulk purchasing is an obvious possibility particularly where orders are opened up to competitive tendering. Some of the Country Papers from the Caribbean region refer to bulk purchasing of books and materials where a large scale order can be considerably cheaper, particularly where competitive quotations are sought. Standardisation of textbooks allows longer print runs and much cheaper unit costs. Contractors may put up buildings more cheaply if a large consolidated project with several schools and sites is put together. The use of education's bargaining power vis-a-vis suppliers of educational goods and materials is obviously extremely important in obtaining goods for the educational system at reasonable prices. By use of the tender system competition can be encouraged among suppliers and more advantageous deals can be struck.

27. A second device by which resources for education have been obtained more cheaply is by allowing the real value of teachers' pay to erode under the savage pressures of inflation. It is probably this process more than any other that has allowed governments to 'get by' in the face of resource shortage. In very many countries teacher salaries fail to keep regular pace with rising prices. Salary revisions are made but they are made

late and at infrequent intervals. Therefore the parity value of teachers' salaries is restored either not at all or only momentarily. When they do regain parity with other salaries or the price level, it is only a matter of months before the lagging behind resumes and the situation deteriorates again. In the most traumatic situations teachers fail to get paid at all for several months in succession: and their pay, when it finally arrives, is in currency debased by the amount of inflation.

28. Teachers have to react to such pressures: and they do. Teacher dissatisfaction increases and teaching comes to be seen not so much as a career, but more as a convenient stopping place on one's way to something financially more rewarding. In a thriving economy, with alternative employment opportunities, teacher wastage rates rise. For teachers who stay in the profession the problem is to make ends meet. What they may do is combine teaching with another job outside education - and this is a cause of much teacher absenteeism and lethargy on the job - or to take two jobs within education. How can two jobs in education be achieved? One possibility is to teach two shifts, perhaps in different public institutions; or to teach one shift in a state school and another in a private college. Whether or not such activity is within the regulations, it may be condoned by those who understand the teachers' plight. The other possibility of a second job is for teachers to engage in private tutoring after school hours. As has already been remarked this has become substantial business in some education systems and offers teachers much higher rewards than their 'base' job as a classroom teacher for a regular session.

III. REDUCTION OF EDUCATION PROVISION

29. If additional resources cannot be found, the next logical possibility of closing the gap between desirable provision and available resources is to cut down on the scale or nature of provision by eliminating dispensable services. In some of the industrialised and newly industrialising Commonwealth countries the patterns of demographic development are such that the education authorities now expect the size of some or all sectors of the formal school and college system to contract. But a drop in pupil numbers does not always translate very readily into a possibility of cutting education expenditure, for three reasons. First there may be some loss of economies of scale when the system reduces in size. Where class sizes in single-stream rural schools for example drop from an average of 35 to 25, few salary savings would be effected, as Professor Onabamiro demonstrates for drop out in Nigeria. In any case political difficulties of closing schools are well known, and there are very good social reasons why such a policy should not be pushed too far. Second there are contractual obligations to teachers and other employees which are not easily or cheaply dispensed with: the pace of contraction is bound to be more difficult and probably slower than the pace of expansion. Moreover there is a real danger of loss of quality in the process: promising young applicants cannot be offered jobs, the best of the serving personnel are the ones who can most easily leave to obtain alternative work outside the education service, and the staff who remain may not be the most able or motivated. Third, there will be strong pressures from within the education system, and perhaps also from

the public, to redeploy 'saved' education resources so as to improve conditions within the schools and colleges. Instead of taking teachers and buildings out of service they propose smaller classes, more specialist accommodation, shorter teaching hours. To take advantage of such opportunities is tempting, but it does not reduce education spending.

30. Enrolment decline is not of course the norm among Commonwealth countries as a whole. Most Commonwealth countries are in a position where universal education has not yet been achieved, and of continuing demographic growth. What possible reductions of expenditure can they make?

31. The basic choice in reducing provision is between cutting down on pedagogical inputs to the schools - teachers, equipment, textbooks and other things directly affecting learning activities - and reducing the "social services" associated with education, such as meals, clothing, transport, residential accommodation. The main pedagogical casualty of cuts in services tends to be reduction in funds for books and materials and for maintenance expenditure on buildings and grounds.

32. Given a choice, the education authorities would generally prefer to find economies in the non-educational activities. Apart from their own vested professional interests, there is a certain logic in regarding 'social' expenditures on meals, clothing, transport as a basic parental responsibility. Of course the line cannot always be firmly drawn between 'educational' and 'social' expenditure since it is well known that an adequate diet for example, is basic to a child's ability to learn. In some countries the cost-effective use of resources will be attained not by cutting out school meals, but by providing them. Many Commonwealth countries in Asia and Africa have found better nutrition (e.g. in the form of school meals in Botswana and in India, free supply of milk in Kenya) an important factor in supporting better attendance and enrolment rates and an improved capacity to learn.

33. The issue of boarding versus day facilities is a recurring one in educational debate in many countries. There is no doubt that student residential provision is much more expensive than day provision, both in recurrent costs and in capital costs, as much experience from Africa shows. Residential provision for teachers is also a very expensive item, and in many World Bank funded projects for example, one notices that a high proportion of the capital cost is accounted for by staff housing. Repeated statements of intention to convert boarding schools to day, or residential universities to non-residential, have proved difficult to translate into practice. The complications are partly the lack of fit between the present distribution of population and the existing network of schools. Some rural areas cannot meet Ministry specifications of minimum viable school size, being unable to muster enough correctly-aged children. It is also true that a system of day schooling, based on local catchment areas, presupposes rough equality in standards of schools. If quality varies widely from area to area within a day system, parents in the catchment area of a poor school will demand the right to transport their children out, to another school. A boarding school system, justified in terms of the

needs of children in sparsely populated areas, may actually turn out to draw its main support from well-to-do city parents.

IV. MORE COST-EFFECTIVE USE OF RESOURCES

IV.A COST-EFFECTIVENESS

34. To the extent that recent cost increases are unwelcome and unplanned, governments will of course attempt to neutralise their effects. However some of the extra expenditure is associated with increased benefits, and in its relentless pursuit of expenditure reduction, cost-effectiveness analysis must also take into account the benefits side of the equation. The difficulty in education is of course to measure outputs. When there is even argument as to whether children learn any more in classes of 25 than of 35 pupils, educators must despairingly wonder whether and how they will ever convincingly prove the efficacy of reforms their experience tells them are worthwhile. Because of the difficulties of measuring beneficial outcomes, it is tempting for educational administrators to concentrate on reducing spending; hoping that education output, however defined, can be maintained in the face of such cuts. The country papers submitted for this Conference tend to have the same emphasis on cost reduction as the principal approach to achieving greater cost-effectiveness. But there may be instances where the loss of benefits associated with expenditure cuts exceeds the saving.

35. Thus the pursuit of cost-effectiveness is about increasing effectiveness as much as it is about reducing costs. Education managers pursuing greater cost-effectiveness should be interested in all the following types of situation, and not just the first two, which tend to dominate attention when budgets are under pressure:

- i. Same or greater effect for less expenditure
- ii. Marginally less effect for much less expenditure
- iii. Greater effect for same expenditure
- iv. Much greater effect for same or marginally more expenditure.

36. The last case serves to remind us that there will be instances where additional expenditure yields disproportionately high benefit. For example a well-tested programme like the Reading Recovery Programme, mentioned in the New Zealand paper, involves additional expenditure on teachers and materials. But in terms of the enhanced capacity of children to benefit from their later education, such a programme has been shown to reduce educational wastage significantly and may thus be extraordinarily cost-effective. Again, extra money spent on books and materials for pupils, or on storage space in the classroom for school equipment, might enhance quite markedly the productivity of the existing heavy expenditures on teachers' salaries. Another instance where additional expenditure might yield a high return is the addition of an extra year's schooling, perhaps to consolidate the fragile acquisition of literacy in a system previously offering the majority only four or five years

of primary schooling.

37. A cost-effective approach may have different practical implications in different countries, or in the same country at different points in time. For example, in Singapore there is active discussion of the possibility that full-day schooling might be preferable to shifts in that country's changing circumstances. Lagos State in Nigeria is reported to have abandoned shifts as soon as possible after introducing them. But other countries have quite recently adopted shift schooling; Cyprus, with its refugee problem, being a case in point. One country may in its own circumstances find the introduction of shift schooling cost-effective; while another values the relative costs and 'effects' of shift and full-day attendance differently. An equal concern in each case for cost-effectiveness may result in diametrically different policy prescriptions.

38. The example of shift schooling is a reminder that when cost is discussed, one should always ask - "cost to whom?" Some arrangements which are expenditure-saving to Ministries of Education may impose heavy social costs on others and may meet opposition for that reason. For parents the 'child-minding' functions of school are not unimportant, and it may be inconvenient to have small children out of school for half the day if shift schooling is introduced. Similarly merging of 'uneconomic' primary schools may impose heavy burdens of travel-time on families having to escort young children to school, and may deprive rural communities of the important focal point that a primary school represents.

39. It is equally pertinent to raise the "cost to whom?" question within Government. Savings to a particular ministry or organisation may be realised only at great overall cost to Government. Take the example of teachers' housing which in some Commonwealth countries falls to Government to provide. It frequently happens that the Ministry of Education finds it economic to build houses for teachers instead of renting houses from the private sector. The Ministry obtains capital funds 'free' from the Treasury, and is not required to service the capital it is using through recurrent expenditure on its budget. Yet the cost of rented accommodation has to appear there. So, for the Ministry, new construction makes eminent sense; even though the opportunity cost for government of tying up capital in teachers' houses (instead of investing in agriculture or industry) is much higher than the cost of renting houses from the private sector.

IV.B COST-SAVINGS IN EDUCATION: PRINCIPLES AND APPLICATION

40. At the risk of oversimplifying, one can say of education systems that the main output is pupils' learning; that teachers' salaries account for most of the recurrent expenditure; and construction of buildings for most of the capital expenditure. Then the basic strategy of cost reduction is to maximise the number of pupils taught per unit of teacher and space input: or, expressed differently, to minimise teacher and building costs for each batch of pupils taught.

41. This will be achieved to the extent that

- (a) the pupils' timetable extends over the minimum reasonable time period in respect of teacher-contact and space-use
- (b) each unit of teacher time or of timetabled space is used to service the maximum feasible number of pupils at acceptable standards
- (c) as much operational time as is possible, at reasonable cost, is provided by teachers and buildings
- (d) cheaper teacher and space inputs are as far as possible substituted for more expensive ones

In terms of practice the implications of these principles, ignoring for the moment any loss of educational or social effectiveness, would be as follows:

- (a) Pupils' timetable to be restricted to minimum reasonable time period as regards teacher-contact and space use.

42. The implications are:

- i. the length of each pupil's learning day/week/year, or course length in years, should be reduced as far as possible.
- ii. within the period of pupils' timetabled curriculum the proportion of time spent with teachers or in using expensive teaching space should be reduced
 - the teacher-intensiveness and space-intensiveness of pupil learning should be minimised. To economise demands on teachers there could be more resort (see the Seychelles paper) to independent learning, more supervision by older children etc. using the monitorial system (of which perhaps Project Impact in the Philippines/Indonesia is the most dramatic contemporary example).
 - the time required in teaching spaces might be reduced perhaps (where feasible in hot climates only!) by teaching classes out of doors for some of the time, or by requiring pupils to undertake independent study (homework etc) at home.
- iii. part-time courses should be substituted for full-time at those levels where it is feasible, and student teachers should be trained in-service, on the job, instead of in college for as much of their courses as possible.

- (b) Each unit of teaching time or timetabled building use should service the maximum possible number of pupils at acceptable standards.

43. The implications are:

- i. registered class size must be sufficiently large for economic-operation and this involves the formation of adequately sized teaching groups
 - the official norms for class size being set in the regulations at a reasonable level
 - merging of classes or even of schools to obtain groups of more economic size, closer to the norms
 - specialisation of schools and colleges and concentration of teaching of certain subjects and options at a limited range of institutions to produce larger learning groups
 - multiple learning groups in a single unit of teaching space, including one-teacher schools in appropriate circumstances
- ii. once formed, size of groups actually taught to be close to registered class size. This implies limitation of amount of splitting of classes into smaller teaching groups for practical subjects, options, individual tutoring etc. Cost-saving clearly conflicts at this point with pedagogical considerations.

(c) As many units of operational time as possible should be provided by teachers and buildings.

44. The implications of this would appear to be:

- i. longer hours for teachers to be brought about by
 - norms for teaching loads in periods per week or weeks per year to be increased
 - such norms to be enforced
 - where teaching load norms cannot be attained in one school because teachers are too specialised in relation to school offerings
 - make teachers peripatetic, to work in more than one school, or
 - train the teachers (initially or through retraining) to handle more than one curriculum subject, to avoid the root problem of over-specialisation.
- ii. more hours of space-use from each available teaching space by
 - longer school day, or more days and weeks per year possibly requiring reorganisation of academic year (four-term year etc?)

- more periods per day of use of each teaching space. (i.e. higher utilisation rates) achieved by:
 - better timetabling to ensure near-continuous use of teaching spaces using such devices as staggered lunch-breaks, staggered starts and finishes to school day
 - using any excess supply of teaching spaces thus created, by increasing pupil intakes
 - shared use of space by different learning groups (non-reservation of space for particular learners) through e.g. rotation of classes within a single shift; double and triple shift systems; access to space by other schools which are short of facilities; offering space to evening classes and community education organisations.
 - creation of specialised centres (science, practical subjects) close together and unable to afford separate expensive facilities
 - versatile design so that teaching space can as far as possible serve a variety of subjects and educational purposes.

45. The feasibility of lengthening teacher hours is very different from that of extending hours of use of physical space. In the case of teachers, there are limits to the possibilities of cost reduction by extending teacher hours. These include physical limits (human exhaustion) and the political limit of teacher willingness to accept longer working hours. Indeed many countries, Cyprus among them, have, under teacher union pressure, reduced norms for teaching loads. It is natural for teachers to seek a reduction in their hours in response to general rises in living standards in the society around them or as a defensive response to threats of teacher unemployment. But reduction of norms for teaching loads is not of course compatible with cost reduction unless teacher remuneration is reduced at the same time. Even a raising of the workload for teachers would not help solve the cost problem if the extra hours had to be paid for at standard hourly rates or at some enhanced overtime rate. In that case savings could only be realised by bringing up to the norm those teachers already drawing a full salary for below-average teaching loads.

46. Increasing the load on school facilities is less problematical. Classrooms and laboratories do not complain at being asked to operate 50% longer hours in a day; nor do they have to be paid extra for so doing! There could be some additional short-term costs of cleaning, lighting, caretaking, and long-run costs of extra maintenance; and if use by several shifts is involved in extending the hours of operation of a building, then extra costs of storage space (lockers etc) will be involved. But generally considerable capital savings would be possible from extending the time periods for which buildings are in use; and in urban situations the resultant economy in land use may be

as important a cost-reduction factor as savings of expenditure on construction itself.

(d) Substitution of cheaper inputs for more expensive ones.

47. The implications include:

i. conserving scarce and expensive staff inputs for specialist tasks, perhaps by using student monitors, teacher aides, or unqualified teachers to perform more routine duties

ii. using specialist facilities like practical rooms and laboratories etc only for practical work and being careful to shift to general classrooms those instruction periods which do not need specialist facilities. Not all science lectures, for example, need to be in laboratories

48. In addition to the foregoing a number of other possible forms of economy are worth mentioning. Measures to reduce waste through proper stock control, monitoring of water and electricity use, are one obvious approach. Savings may be made by limiting the grant of study leave with pay to improve qualifications. A more far-reaching reform, but a formidable task to implement, would be a change in salary structure to remunerate teachers on the basis level of responsibilities held (as, e.g., in England and Wales) instead of by qualification. Since the number of responsibility posts is determinate, whereas the numbers obtaining higher qualifications is open-ended, this gives much better control over future levels of salary expenditure, particularly at a time of qualification escalation.

IV.C OBSTACLES TO MAKING ECONOMIES

49. Even though the foregoing list of ways to make savings in education may not be fully comprehensive it represents a formidable agenda. Most of the ideas are in no sense new and so the interesting question arises as to why many well known ideas are not more widely applied. A few possibilities which immediately suggest themselves are:

i. Management incapacity for realising savings and for expenditure control.

ii. Social costs of some expenditure reduction measures, resulting in public hostility to such measures.

iii. Professional reactions to educational aspects of cost-saving measures.

iv. Lack of incentive for teachers and school managers to engage in cost-saving.

IV.C (i) Management Incapacity

50. One major reason for non-implementation of cost-saving measures may be that managements lack specific skills in time-tabling and cost analysis, or they lack basic management tools including information systems, to enable them to discharge their

responsibilities effectively. In some cases the regulations and norms to keep educational expenditure at reasonable and manageable levels exist; but they are not applied. Expenditure trends develop locally, unknown to the central authorities, and local expenditure decisions are taken which have not been centrally authorised. Even where these conform to the regulations, staffing norms etc of the system, they may be beyond what is financially sustainable at a particular moment of time. Systems are required for reporting and analysing expenditures on a unit-cost basis and for matching expenditures with budget categories. In many countries the data collection and recording system is inadequate to the task in hand with discrepancies between the system of basic statistical returns and budgetary categories. Many of the cost-saving measures mentioned in this paper rashly assume an adequacy of basic data for management. Some of the Country Papers (notably that of New Zealand) point up the relationship between data improvement and the achievement of cost-effectiveness.

IV.C (ii) Social Cost Factors and Parental Resistance

51. The point has already been made earlier that some of the expenditure-reduction possibilities outlined in this paper involve heavy social costs. This obviously applies to all those measures which indirectly transfer expenditures on pupil maintenance (accommodation, feeding, clothing etc) from the public sector to parents and communities. But beyond this it applies to some extent to any measures which

- (a) remove schools and colleges physically further from students' homes, thus raising their costs in time and money of acquiring education. Consolidation exercises, to obtain economies of scale in more viable institutional units, inevitably involve some distancing of home and school or college.

- (b) reduce school hours of young children, particularly in urban areas where mothers are more likely to be in paid jobs and children are less safe roaming unattended.

This underlines the need (a) to take a broad view of social welfare when planning education savings and to be ready in some instances to give precedence to non-economic considerations (b) to accompany cost-saving measures by intensive public consultation and information.

IV.C (iii) Professional Concern over Educational Aspects

52. Professional concern over educational aspects of savings must also be considered. There are at least two categories of educational effects to be considered. The first arises from any diminution of learning as a direct result of 'diluted' access to instructional resources - larger classes producing less teacher attention per pupil, less physical space per pupil, fewer books, a narrower curriculum through reduction of options or elimination of resource-intensive practical activity. The second set is psychological losses, impacting on learning, from a loss of sense of security and community in schools. Many of the cost saving measures touched on in these pages involve shifting and recom-

binning pupil groups and teachers in the interests of 'efficiency'. The class of children that is never stable, always on the move between teachers, classrooms, and even schools, ever changing times of attendance from week to week or term to term, may pay a certain price in emotional insecurity and deprivation. School is no longer a community of stable social relationships: it may become - perish the thought - a mere 'learning station.' It seems possible that teachers resist some cost-saving measures because of the threat they see to educational standards and their own loss of identity and security in a larger more impersonal school. Teachers' lack of enthusiasm for devices like rotation of classes is well known.

IV.C (iv) Lack of Incentives for Teachers and School Managers

53. The factors mentioned in paragraphs 50-52 constitute reason enough perhaps to feel gloomy about the prospects of cost-saving in education. There appear to be too many pressures, and too many excuses, standing in the way of getting anything done. But isn't that to take too cynical a view? Teachers are professionals and human beings as well as trade unionists. School managers have a personal stake and pride in running a successful and respected institution. As taxpayers, parents understand the need to conserve public resources and to operate schools with economy.

54. Perhaps a major fault of our cost-reduction strategies is that they are too often imposed 'against' teachers and administrators and not 'with' them. Any one entitled to claim expenses knows the difference between expenditures registered when expenditures are fully reimbursed (first class travel and hotels unfortunately inescapable) and when a fixed monetary allowance or entitlement is paid ('bucket shop' tickets and staying with friends suddenly become real possibilities). By extension, could greater discretion be given to school boards, heads of institutions, individual teachers to exercise greater freedom in choosing and purchasing inputs for education? How realistic is it to substitute a resource entitlement system for an earmarking/reimbursement system? Could schools be given a basic allowance of funds/teachers and be told that they can apply any savings to improving the amenities of the institution? Can grant conditions for schools incorporate some kind of incentive systems which rewards effort and savings? Do present systems penalise the school that makes savings, by confiscating its surplus and setting its pruned expenditure as next year's budget baseline? Do we operate a system of capital spending which tolerates prices for government building contracts so high that they enrage community leaders and religious managers of schools who know that, using direct labour and their own supervision, they could have built for a third of the price?

55. It is no use being naively starry-eyed about these possibilities and overlooking the complex issues involved in devolving responsibility for financial decisions to local levels of management. Autonomy in decision-making also involves freedom to mismanage, so careful provision for systems of accountability and monitoring of performance is needed. If efficient schools can keep some of their savings for ploughing back into better educational provision, won't the gap between well-managed and

poorly-managed schools increase, with resultant inequality and unfairness to pupils unfortunate enough to have a poor manager as head? Would systems be flexible enough to take account of the fact that some colleges and universities might face inexorable cost rises for reasons beyond their control, while others had real potential for effecting savings?

56. These issues are real enough. But they do not negate the case for seeking partnership with teachers, heads and school managers in attempts at cost reduction. It is certain that without their co-operation substantial improvements in cost-effectiveness cannot be made. If they can see possible benefit to themselves, their schools and their pupils, their response is likely to be positive. This whole area of devolved management responsibility combined with accountability and management control is one where Commonwealth countries clearly have much experience - in the independent as well as the public sector of education - worth sharing.

V. ALTERNATIVE LEARNING TECHNOLOGIES

57. The final range of possibilities is to reconstruct learning systems themselves as a way of reducing costs. Some radical prototypes exist but it is not yet clear in all cases under what conditions they are widely applicable. One thinks of course of Zimbabwe's ZINTEC scheme and the similar programme for producing UPE teachers in Tanzania; or of Britain's Open University. But many of the other examples which come to mind - some of them abortive - are from beyond the Commonwealth. Project Impact from Indonesia and the Philippines has been mentioned: it is designed to economise on regular teachers by using teacher aides and volunteers, peer group learning, and heavy recourse to resource banks of printed materials. There was the large-scale ETV project in Ivory Coast, seeking (but not apparently succeeding) to replace part of the regular teacher function by television beamed into every primary school. There is Ramkhamhaeng Open University in Thailand with nearly half a million students being educated at a fraction of the cost of the regular universities, and now being succeeded by the newer Sukothai University.

58. The essence of all these schemes is essentially the same. They seek to capitalise on perhaps the least exploited of all resources in education, student energy and student time. Are education systems so busy 'instructing' that they provide insufficient time to learn? The possibilities of extending independent study are very various and would seem to have the dual virtues of educational merit and cost-effective potential. Within schools the emphasis is likely to be more in personalised learning, individual mastery of knowledge and skills, and the possibility of using independent study periods to free teachers for more individual tutorial work and remedial teaching in smaller groups. The one- and two-teacher primary school, handling several grades in a single classroom, becomes a viable proposition if there are adequate materials, audio- and visual aids, to keep several disparate groups occupied while the teacher concentrates on a particular age- or ability-group. At secondary level many possibilities open up if schools have well-stocked libraries which students are taught to consult and use, and if the school timetable makes provision for supervised

periods of independent study. The proposition only appears financially unrealistic if one overlooks what is being spent on teachers' salaries, a small part of which could finance such a system. One moves on to systems of part-time attendance and evening classes, suited more to youth and young working adults than to children. At the apex, so to speak, of the system, but not necessarily the most cost-effective of all, stand the 'open universities' using radio, television and correspondence. On the horizon, revolutionary communications and information technology open up extraordinary prospects of learning. They challenge the teacher less with redundancy than with the prospect of new professional tools and a new role.

59. With budgets under pressure, but with ever increasing numbers seeking education at the very expensive upper secondary and tertiary levels in both general and vocational education, I believe that it is to learner motivation and learner time we must look for the most underused resources for education. Those are the resources which our educational strategies should above all seek to tap in their effort to create systems of education which are more cost-effective.

APPENDIX

SUMMARY OF WAYS TO CLOSE THE RESOURCE GAP IN EDUCATION

I. RAISING ADDITIONAL RESOURCES FOR EDUCATION

A. FINDING EXTRA MONEY

(i) Additional Domestic Public Revenue

(ii) Private Sources

Contributions to State Schools

- Tuition fees

- Other charges (for academic and non-academic services)

- Private gifts

Development of the Independent School Sector

(iii) Education Institutions' Own Earnings

- Production units

- Other earnings

(iv) Receipt of Development Assistance

B. TAPPING RESOURCES IN KIND

- Time of personnel

- Buildings, materials, services

II. BUYING EDUCATION INPUTS MORE CHEAPLY

(i) Bulk purchase and competitive tendering

(ii) Erosion of salaries through inflation

III. REDUCTION OF EDUCATION PROVISION

(i) Scaling down size to reflect demographic decline

(ii) Cutting education expenditure

(iii) Cutting social expenditures, including residential provision.

IV. COST-EFFECTIVE USE OF RESOURCES

A. GREATER EFFECT THROUGH IMPROVED PRACTICE

B. COST-REDUCTION

IV.B COST REDUCTION

(i) Reducing Pupil Contact Time with Teachers and Buildings.

- Shorter learning day/week/year and shorter courses
- More independent learning by students
- More extra-classroom learning
- Part-time element of courses to be increased especially for teacher trainees

(ii) Teachers/Buildings to Service Maximum Number of Pupils.

- Norms for class sizes to be set at economic level
- Merging classes and schools
- Specialisation of institutions and concentration of studies
- Combining learning groups and one-teacher schools
- Limitation of splitting of classes

(iii) Extending work period of Teachers and Buildings.

Teachers

- Higher teaching loads and enforcement of same
- Peripatetic teachers working in more than one school
- Training teachers in more than one subject

Buildings

- Longer timetabled school-day
- Higher utilisation rates through improved time-tabling
- Shared use of space
 - rotation of classes
 - shifts
 - sharing of facilities by two or more schools
 - using school buildings for evening classes
- Creation of specialist centres

- Design of multi-purpose classroom space
- (iv) Substitute Cheaper Inputs for Expensive Ones.
 - Substitute student monitors, teacher aides, unqualified teachers for fully qualified teachers in routine tasks
 - Restrict use of specialist rooms etc. to forms of instruction requiring them
 - Use 'free' student labour for cleaning and maintenance tasks on institutional compounds
- (v) Miscellaneous Measures
 - Cut out waste through better management
 - Substitute leave without pay for leave with pay, for educational personnel undergoing further training
 - Restructure salary scales
- (vi) Better Management
 - Improved expenditure control based on better information
 - Greater incentives to educational managers cut costs

V. ALTERNATIVE LEARNING TECHNOLOGIES