

1 *The Aga Khan University in Transition*

1.1 The Chancellor's Commission was appointed at a time when AKU was committed to beginning a new phase of its life by moving beyond being a university only in the health sciences. This Commission was asked to think boldly and bravely about what the University might become in this new phase by looking 20 or 30 years ahead, with results we have reported in previous Sections here. We were also charged to say where future branches might be located, what their legal basis would be, and to "recommend appropriate senior management and governance structures for the University as it evolves through various phases of development ... and define suitable linkages with other related entities". We were, moreover, to address the financial implications of the vision we depict of the future AKU. Our efforts to discharge these various responsibilities are set forth in this section of our Report.

1.2 It must be said that AKU is sailing into seas where there are few charts to guide it. There are now many universities that are international in character and purpose and there are universities with multiple campuses, or even whole university systems. But the universities that are international in character are typically strongly rooted in a particular country, as MIT is in the U.S. or Cambridge in the U.K. And most of the universities with multiple sites are all in one country as Napoleon's Université de France was, or even in one state, as are the state university systems of the U.S. In important senses, AKU is now a Pakistani university but it has also been from its beginnings an international university. It represents a commitment of the international Ismaili community and its Imam, who have provided indispensable moral and financial support for its development. The location of the Aga Khan University Foundation, the repository for the University's endowment, in Switzerland expresses this international character. And the future we have laid out for AKU goes beyond appending foreign branches to a Pakistani university. There are few examples and no very pertinent models for AKU as a dispersed international university, with branches in as many as three or four parts of the world. The United Nations University and others we have studied provide more cautionary than positive guidance for AKU.<sup>31</sup>

<sup>31</sup> UNU may become a more helpful model as it adds to the number of its substantial branches (like WIDER in Finland) and reacts to criticisms of its style and management. A special paper on UNU, listed in an appendix here, was prepared for the Commission.

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## 2 *The Structure and Governance of the Future AKU*

2.1 We have argued that AKU needs to have important sites in more than one country, and probably as many as three. This dispersion is essential to realising AKU's character as an international university but it has serious costs of both practical and intellectual sorts and should not be pushed beyond a necessary minimum. We foresee the need for a site somewhere in the Western world, most probably in Europe; and we believe a site in Africa is necessary to maintain a broad concern with the generic problems of development and for other reasons. The presently unsettled state of Central Asia makes prediction difficult, but we assume there may at some time be a significant AKU presence there, either fairly autonomous or linked to Karachi and Pakistan.

2.2 A dispersed, international AKU will need organisation and governance at two levels: central for the university as a whole; dispersed for the components. A central Board of Trustees and a chief executive officer and academic head as now exist will, of course, be needed. The Harvard Committee believed it should consider the possibility that at some future time the University's centre might be in a place other than Pakistan. That possibility now seems more remote than it did eleven years ago, but this Commission did not lose sight of it. Whatever the official location and the legal basis for the future Board and executive leadership of the University, we assume that the position of the Chancellor, essentially as in the Pakistan Charter, will be preserved.

The Harvard Committee thought that the proper discharge of its functions would require that "the central board should be composed of wise and experienced educators and statesmen". And went on to say: "It should by its eminence and international character help protect the components of the University from political interference and enhance the credibility and attractiveness of the University to collaborating institutions and supporters throughout the world". The Rector should "have a distinguished record as an educator and administrator of academic and research enterprises, a broad international acquaintance, and strong interest in the problems of the Third World". This Commission warmly endorses these criteria for selecting future Rectors and board members.

Each of the components of the future University will need its own responsible executive and academic head, and some form of advisory or oversight bodies, depending on the nature of the component, its geographical location, and its relations to other components. Considerable responsibilities may fall on the executive and oversight leadership of new branches of the University: in the planning of programmes and budgets; the recruitment of staff, clients, and donors; the establishment and maintenance of relations with national governments and with networks of co-operating institutions. Recent experience in relating the Board of Trustees to the Academic Advisory Committee for IED suggests a pattern of limited independent authority for the oversight bodies of new components; or at least that there may be wide variation in the relations of the central Board with the new components. The location of IED in Karachi within easy gaze of the Board and the University's academic and executive leadership may, however, make it an atypical case. In any case, it has been clear to the Commission that academic advisory competencies in the fields of each component will certainly be needed; we also think some weighty nationals from the country in which the component is located will be needed. We have been impressed that the initial academic and executive heads of the components - and perhaps more than the first - will need exceptional qualities and consequently their selection should engage the central authorities of the University. In a more routinised long-run, this engagement of the centre might be reduced to more passive "advice and consent".

2.3 Some legal basis for each component will be needed under the laws of the country in which it is located. This might take the form of a special charter but it also could be a simpler arrangement based on the general provisions for foreign organisations establishing branches or affiliates within the country. We have been led to believe from recent experience of AKDN that these arrangements may be easier than in the past and we hopefully regard them as not a major problem. We emphasise that the legal arrangements, whatever their particular character, should protect the University's autonomy.

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**2.4 We think it sensible to go ahead on the presumption that an internationalised AKU can develop satisfactorily under the existing Pakistan Charter until experience should show otherwise.** The present charter provides for branches of the University outside Pakistan and for international representation on the Board. There are likely resistances in some countries - notably India - to having a branch or branches of a university chartered in Pakistan. There may also be troublesome problems from the limited size of the Board specified in the Pakistan Charter. The Harvard group thought a new charter would be preferable but that the Pakistan Charter with its provisions for the Chancellor, the Board of Trustees, and a Rector could serve satisfactorily for an expanded university. Without judging the ultimate outcome, we believe it is right to attempt this latter course.

**Some adjustments in the composition of the central Board will undoubtedly be necessary.** For example, if a significant branch is established in Africa it would be anomalous not to have an African on the Board. And as the range of subjects addressed by the University increases, the Board will presumably want to broaden its range of intellectual competencies. There is not much room within a board of thirteen members to make such adjustments, but perhaps enough to postpone early efforts at amending the Charter, which we are told might be difficult.

**The responsibilities of the Board will, in any event, increase.** It will have to review plans and budgets for a diversified and expanded University; it will have to determine priorities and locations for development of the components, keep informed on what they are doing and evaluate their performance. There will probably, in due course, have to be arrangements to assure mutual understanding and communication with the oversight bodies of components. Orderly and efficient management of the Board's business will be imperative, with the use of committees such as the Hospital and the Strategic Planning Committees. The pattern used in the Hospital Committee, which includes members who are not members of the Board, may be essential in the Board's future exercise of responsibility for an expanded and diversified University. The Strategic Planning Committee now has responsibilities for monitoring the recommendations of the Medical

Centre Committee. We would think it natural and desirable that it have similar functions in relation to this Commission's recommendations and the planning processes they will entail. Through the use of such a committee, the Board may be engaged from an early time in new developments without being overwhelmed with detail about them.

The addition of committees will strengthen the Board's capacity to deal with a more complex university but it will not lessen the demands on the Board members themselves. Given the small size of the Board, it is very important that the competencies and the versatility of its members be of the highest attainable standard. The Commission has been made conscious of needs for careful planning so that turnover in the membership is anticipated well in advance, and the sorts of needed talent and experience are properly identified. Suggestions have been made in the Committee's discussions that the Board's Executive Committee should regularly alert the Chancellor and the Board to forthcoming needs and prospects. We do not think it our function to pronounce on specific ways this planning and anticipation of needs may be carried out, but we foresee that its importance will mount as our recommendations for expanding the University may be carried out.

The future development of AKU will also require a high order of executive and academic leadership, the subject to which we now turn.

**2.5** The Commission has been conscious throughout its work of the critical role that the faculty and staff of AKU have had in bringing the University to its present state and that they will have in shaping its future. When we are considering the structure and governance of a university we too easily forget that universities are less distinguished by how well they are organised and managed than by the quality of the education and research they provide. The distinguished future we project for AKU will depend above all on the intellectual and academic standards its professors maintain. But purely academic and executive functions cannot and should not be sharply separated. We have been happy to have had the benefit in our own deliberations of the extensive and thoughtful work on the future of AKU that

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faculty and staff in Karachi have undertaken. We trust that this active role of faculty and staff in shaping the future of the University will continue and that the governance of AKU will rest on a wide and vigorous participation of those on whose every day work assures its good functioning.

**2.6** The pattern of executive leadership of AKU in its first decade has not been simple. The Faculty of Health Sciences has been under the executive and academic leadership of a series of expatriate medical educators. The formal title of the position has been Dean and Acting Rector, even when the only branches of AKU were in the Medical Centre. An apparent reason for the designation "Acting Rector" is the provision in the Charter (10:2) stipulating that "The Rector shall be the chief academic and administrative officer of the University". As Mr. Mohamed Jaffer, one of the drafters of the Charter, has confirmed, the University could not properly exist from a legal point of view without someone designated as Rector or Acting Rector. The Hospital, while intimately related to the Faculty of Health Sciences, has until recently been a legally separate entity under its own board and an executive head, called a Director-General. Except for a brief initial period, all the Directors-General have been expatriate professionals in hospital management. The Medical Centre Committee recommended that the Aga Khan University Hospital be brought under the governance of AKU, with the position of Director-General preserved, and this recommendation is being carried out.

The dependence on expatriate health professionals for executive and academic leadership in the hospital and the Faculty of Health Sciences has left a broad array of leadership functions which they were not equipped to fill. AKU and its hospital have existed in a complex array of communities: they function under the authority and influence of their founder, the Aga Khan himself, and hence in relation to his Secretariat at Aiglemont; they have also been related to other Aga Khan institutions and the Ismaili Jamat. The Charter of AKU places it under the laws of Pakistan; in its business and administrative affairs the University must relate to the central government of Pakistan, the provincial government of Sindh and the city of Karachi in myriad ways. It must

also maintain a demanding array of international relationships, inside and outside the Ismaili world community. Executive responsibility for this sprawling array of local, national and international relations, and of functions that include fund raising, banking, finance, space planning and construction, has rested on an individual, Mr. Shams Kassim-Lakha. His extraordinary responsibilities were recognised in his title, which was President of the Aga Khan University Medical Centre. With the initiation of IED and on recommendation of the Medical Centre Committee (which this Commission endorsed) Mr. Kassim-Lakha's title was changed to President of the Aga Khan University Centre.

MCC recommended that the three positions here described be maintained in the new structure resulting from the absorption of the hospital into the University, with each officer reporting directly to the Board of Trustees and the Chancellor. This has been done. Executive leadership for AKU thus continues to be distributed among three positions. The desirability of having a convener of this "troika" was brought out in discussions between the Commission and the MCC Chairman, and in the final version of the MCC report, it was proposed that Mr. Kassim-Lakha be given this responsibility.

**2.7** Looking to the future, we foresee an array of needs for academic and executive leadership, many of which will become urgent and continuing, if the development we propose for the University is to be carried forward in a serious and orderly fashion. We have said that the future AKU will need planning and governance at two levels, for the University as a whole, and for the component parts. Strategic planning and oversight for the University at the senior executive level now rests primarily on two officers, the Acting Rector and Dean of the Faculty of Health Sciences, and the President of the University Centre. The responsibilities these officers now bear are heavy and diverse; they clearly will need help if they are to cope satisfactorily with the demands of a new phase of University development. We are therefore proposing that a new senior officer, tentatively called a **Director of University Planning**, be appointed who would be primarily concerned with the forward planning of new

components of the University and their relations to existing ones. This officer would report to the Acting Rector, as chief academic and executive officer of the University, and work closely with the President on all matters of organisation and resources. He or she would be expected to link the central administration with the Task Forces and founding heads engaged in planning and developing new parts of the University. In company with the Acting Rector and President, this officer would be particularly concerned with the priorities to be given to the development of new programmes and branches with the aim of holding the growth of the University to a planned rather than opportunistic or inadvertent development.

**The successful start of new components of AKU will require much careful planning and high orders of academic and organisational leadership at their start.** Once decisions have been taken by the Chancellor and Board to start the process toward establishing a new component, we envisage the appointment of Planning Groups or Task Forces that will scrutinise the feasibility of the proposed component, propose broad outlines of its design and identify leadership for its planning and staffing. A possible pattern might be that the chairman or principal academic leader on the Task Force would be the potential organiser of the component. We do not think this Commission should try to specify this process further. But we do find it evident that it will require engagement and guidance from the central administration and Board from an early point. (We have heard Board members express the view that the Board was engaged too late in the establishment of IED.)

**2.8** The Commission's view is that the senior executive leadership of AKU in the immediate future will depend on the Acting Rector, the President and a new officer called tentatively a Director of University Planning, these officers being joined where pertinent by the Director-General of the hospital. This pattern for the near future leaves open numerous possibilities for the evolution of AKU's leadership in the longer run. It has, for example, been practice thus far that the positions of Acting Rector and Dean of the Faculty of Health Sciences should be joined. We would presume that this would not be the case as the University grows and diversifies and a full-fledged Rector is appointed. **The naming of a Rector will become a question of increasing**

**immediacy as the University grows.** It may indeed have to be faced no later than the 1997 conclusion of the present three-year appointment of Dr. Dirks as Acting Rector. The Commission has therefore given thought to the qualifications of future Rectors of AKU.

**2.9** Whatever their backgrounds, the future Rectors of AKU must be persons with a high order of personal qualifications. We repeat the Harvard Report's call for a Rector having "a distinguished record as an educator and administrator of academic and research enterprises, a broad international acquaintance, and a strong interest in the problems of the Third World". A Rector, even with such versatile and stellar qualifications, will still need much support from the leadership of the branches of the University, from the Board of Trustees and the senior, central executive officers of the University. We believe that the future central administration of AKU can and should be small. But it will have very important functions in giving coherence and orderly development to the University, mobilising and managing the resources it will need, and relating it to the different national and international communities of which it is a part.

**2.10** In view of the nature of AKU, including its avowedly international character, the Commission considers that the eventual appointment of a Muslim rector would be a natural expectation. Such an appointment would have consequences for the image and character of AKU that would vary with the background and qualities of the person. And it would, of course, affect the balance of competencies and responsibilities that has led to the present "troika" in the senior leadership of the University.

**2.11** However talented AKU's future rectors may be they are unlikely to be able to fulfil their functions without sharing them with other senior officers. **Some pattern of collegial leadership, as at present and in the near-term future we have projected, appears as a likely longer-term prospect for AKU.** It would be natural for the Director of University Planning we have proposed to become a Vice-Rector. The multifarious functions now assumed by the President will continue to fall on the central administration of the University; they will shift somewhat in character as AKU must relate to other national settings and to new international linkages, but

they will continue to have a vital importance for the University. We thus believe that a position like that Mr. Shamsh Kassim-Lakha now fills under the designation "President of the University Centre" will continue to be needed in AKU's foreseeable future. We do not think it possible at the present time to see clearly what the responsibilities of this position will be, twenty or thirty years hence, or what an appropriate designation for it might be, but that it will persist and merit high station alongside the Rector is evident to us.

**2.12** Reverting now to some questions arising as we think of the near-term future of AKU. We recall that the Commission has been concerned throughout its deliberations with the **problem of reconciling and balancing the needs of the existing University in Karachi with planning and development of the University in other fields and elsewhere.** Given the inevitable and perfectly justifiable pressure from AKUMC and IED for their further development, the diversification and internationalisation of AKU to which this Report is largely devoted threatens to remain only deferred aspiration unless there is a definite organisational commitment to it. We have felt this problem to be sufficiently serious that we have explored various ways in which appropriate balance might be assured.

The commitment of the present Acting Rector to a broad development of AKU, and the support for such views that we have found in our meetings with faculty and staff in Karachi have somewhat eased these concerns. We do, however, stress the importance of commitment to planning and development for the whole University and the appointment of the officer we have proposed to share with the Acting Rector and President in these responsibilities. Supported by a commitment of the Chancellor and the Board to an orderly process, we believe this strengthened executive leadership can provide a locus for strategic planning and active advocacy for new developments.

Some members of the Commission have not been confident that this sort of central leadership will be sufficient to assure a balanced development of AKU. Competition for AKU's limited resources has worked thus far to the disadvantage of research and academic graduate study in AKU's development. Several of the new

components we have projected in AKU would emphasise research and graduate study, and there has been in the Commission a disposition to seek a framework in which such components might be specially fostered. This framework has been described as an "institute for advanced studies" or, latterly, with some increased emphasis on graduate studies, as a "Graduate School of Advanced Studies". Essentially what this proposed structural element of AKU would do would be to serve as a focus and advocate for University activities in research and graduate study. **The Commission reached no consensus on the necessity or desirability of this sort of element in AKU,** but it was the subject of much concern and extended discussion and as such deserves this mention in our Report.

### **3 *Financial Requirements and Resources for the Future AKU***

#### **3.1 *General Observations and Prospects***

**3.1.1** The longer-term development of AKU has been projected in Section VII above without much regard to likely financial constraints. We have envisaged AKU growing into new fields and activities without stunting the growth of what it already has. It will, on our projections to 2020 or 2030, be a much larger university than it is now, and with budgets that, even without allowing for inflation, would seem forbiddingly large in 1994. We have throughout our deliberations, however, given thought to the prospective costs of a worthwhile enterprise in each of the components we have proposed, and the likely resources that could be set over against these costs. In some cases we can foresee the possibility that the scale of a component could grow very far beyond the minimal scale of a worthwhile enterprise. Such a growth, say, e.g., in contracted services from a future IED, would in many respects be welcome, though it might raise questions of appropriate balance in the University. It is notorious that some parts of universities can be "money makers". We keep such possibilities in mind but our **basic concern has been to project minimal requirements beneath which a component would not be viable or worthwhile.** As we consider each component in subsequent paragraphs we will try to project what we think to be feasible scales and we shall give some attention to start-up requirements versus longer term needs.

**3.1.2** Projecting financial requirements over a period of two or three decades is a very uncertain undertaking. Our basic procedure has been to estimate the numbers of staff that would be essential to a viable and worthwhile enterprise, divide those numbers into locally and internationally recruited fractions, estimate personnel costs from these figures and augment these costs by fractions based on experience in different locations to provide for other costs of recurrent operations and capital costs. We are grateful for assistance from staff in Karachi in making some of these estimates. An effort to allow for inflation would have greatly increased uncertainties and we have eschewed doing so. We do note, however, that the "Baumol" principle, that costs of higher education tend to rise faster than general price levels, probably applies in developing countries as well as in rich ones, if quality is to be maintained.

**3.1.3** We have considered the likely resources that can be foreseen for each part of the future AKU, and most of the following exposition deals with the parts successively. But there are some general questions of availability and policy that deserve noting. We have already noted that **some parts of the future AKU will be easier to finance than others.** There will be parts that are relatively inexpensive; ones that can attract gifts and grants better than others; or that have better sources of income from services, contracts, licensings, or student fees. The governance of the University will need to ensure that the mission of the University is not distorted by the uneven availability of financial resources; even for components that may be largely funded from external sources some basic financial commitment from the University will be needed. **Some broad principles of financial policy will need to be developed,** dealing with such basic questions as : should the familiar principle of "each tub on its own bottom" be followed ? Or should some parts of the University be subsidised from central or other resources for longish periods ? Which parts of the University should be strongly endowed and with what priority ? What safeguards are needed against undue dependence on fees, service earnings, or quasi-commercial activities ? Under what circumstances can funding from a host government be accepted, while preserving AKU's autonomy ?

**3.1.4** In projecting the future design of AKU we have endowed it with certain general characteristics - in the uses of modern information technology, in superior educational methods, and in commitment to the advancement of women. We do not find it easy to estimate what these features of AKU may cost in the coming years but we will try to give some rough estimates after we have dealt with estimated costs and resources for the various components we have included in the future AKU.

### **3.2** *Requirements and Resources for Component Parts of the Future AKU*

#### **3.2.1** *The Faculty of Health Sciences*

As we have argued in Section VII C.1, we expect the Faculty of Health Sciences to remain a very large part of AKU over the next quarter century, indeed probably the largest part of AKU by a considerable measure over the next quarter century. It is our view that the Faculty cannot afford to stand still while new parts of the University start but must continue to grow, and hence to pose financial challenges.

The Commission has not undertaken to repeat the detailed financial projections for the Faculty that were a major part of the Medical Centre Committee's report. But we have tried to :

(1) make rough estimates of the scale of the health science enterprise in AKU over the coming decades;

(2) estimate the effects on both costs and income of the additional programmes that the Commission is recommending in research, in health policy and management, and for broadening the education of the students passing through the Faculty; and

(3) anticipate the various sorts of financial resources that may become available.

#### **3.2.1(A)** *Future Requirements of Existing Programmes*

The Faculty of Health Sciences is now an enterprise with a recurrent budget of roughly \$ 7 + million per annum, while the total budget of the Medical Centre, including the hospital, is roughly \$ 30 million per annum. The Medical Centre Committee has projected some expansion

in the hospital's services to the turn of the century, and we would think it likely that continued pressure toward becoming a broadly equipped tertiary care institution - and one in complex relations with the Aga Khan Health Services and other institutions - will continue in the opening decades of the new millennium. We have also concluded that there will not be a reduction in the teaching programmes in the Medical College or the School of Nursing; indeed there may be some expansion, though for reasons to be set forth below, we do not think this can or should be a large expansion. The future of the existing enterprise at AKUMC, even without additional programmes of the sort we are recommending, will evidently require additional resources that may be substantial. This general conclusion is reinforced by the conclusions of MCC.

MCC made projections in which increased income from the hospital's services would make the hospital a net contributor to AKUMC's budget of as much as \$ 1 or 2 million/annum by the end of the century. We understand the policy to be to manage the hospital so that it maintains a net positive income from current operations. We also understand, however, that insufficient provision is now being made for replacement costs of buildings and other capital equipment and it was not clear from the MCC report when sufficient income would be available to make such provision. The projections of MCC showed new gifts and grants of the order of \$ 62 million becoming available to AKUMC by the turn of the next century. These new funds would come from a 1994-96 capital campaign with the Ismaili community, targeted at \$ 43 million, some \$ 5 million from other donors and an estimated \$ 14 million from international aid agencies over the period 1993-94. These funds would be needed : to reduce deficits in current operations in the Faculty of Health Sciences; to reduce the excessive use of endowment income, which is currently leaving insufficient provision for capital erosion by inflation; and to provide for capital expenditures that were required to sustain current operations or to provide for new activities recommended or approved by MCC. In the end MCC concluded that if proper provisions were made for protecting the endowment and providing for capital replacement, a gap between AKUMC's income and its expenditures would persist beyond the turn of the century.

The implications we draw from these rather severely constraining prospects are that : **AKUMC will need increased income in the near future and it will compete with other parts of the University both for new current income and endowment for the foreseeable future.**

We do not feel well-equipped to make serious projections of the financial requirements of the whole AKUMC over the next quarter century. Though we recognise the inescapable interdependence of the finances of the hospital and the Faculty of Health Sciences, we concentrate our attention on the latter. The largest item in the Faculty's budget is for personnel costs. In 1992 these amounted to 66% of the budget and were thought "likely to increase over the years, because of the need to retain and attract the highest quality faculty and staff." To observers from elsewhere, this fraction seems already unusually high, at least for general higher education costs as distinguished from those for health sciences; leading universities and colleges in the United States would show figures below 50%, with rich universities like Harvard and Princeton that provide large amounts of student aid, falling under 40%. The relatively low costs for facilities, supplies, and other costs in Karachi undoubtedly represent a benefit from a Third World location (though they may also reflect the insufficient provision for replacement costs that MCC noted). We think it obviously essential that the Faculty of Health Sciences maintain salaries and benefits that will attract a highly qualified and internationally diversified staff. Even if the predicted increase in the fraction of total costs does not occur, this would seem likely to imply rising costs per student in the future. If these and other cost increases amounted to a 2% per annum increase, this would increase the present \$ 7+ million budget to nearly \$ 12 million over a twenty five year period, with no increase in the number of students. A modest, say 10%, increase in the student body would raise the total to \$ 13 million per annum.

Income for the Faculty in 1992 came from : (1) endowment income and gifts, 63%; (2) research and other grants, 21%; (3) tuition income, 12%, and (4) other sources, 4%. The Faculty is thus heavily dependent on endowment and gift income at the present time and there is apparent caution about the possibilities of raising



the fractions of the budget that can be drawn from other sources. The Faculty may benefit in future decades from surpluses in the hospital's operations, but prudent judgements are that these will not be large in any case. Such dependency on income generated by the hospital might also be inimical to serving the multiple missions the Faculty has espoused.<sup>32</sup> The possibility that income from research grants can be substantially increased is discussed at some length below; suffice to say here, that it will not be easy to raise the fraction of total income they presently contribute. The possibility of increased income from student fees is clearly present in the Medical School. Any institution that can admit only one in thirty five or forty applicants is in a strong position to charge much higher fees than it currently does. We believe fees ought gradually to rise over the coming years, with parallel efforts to raise funds for fellowships for talented students from poor backgrounds. The number of first degree medical students will remain small and hence the gains from increased fees from them will be limited. Furthermore, if graduate studies expand in the Faculty as we recommend and anticipate, they will probably represent a net loss; and, of course, we would expect that the fee income in the School of Nursing will not become important even if BScN and MScN programmes grow in attractiveness.

The upshot of these observations is that the costs of the Faculty's existing programmes will grow over the next twenty five years in constant 1994 dollars to something approaching double their present level, say to \$ 13 million per annum; and that sources of income other than endowment and gifts will contribute little more than a third of the needed increase. In rough estimate, endowment and gift income available for these purposes will thus have to double from its present level.

### **3.2.1(B) *Requirements and Resources for New Programmes in the Faculty***

We argued in Section VII above that the only attractive prospect for the future of AKUMC as part of a distinguished international university is to continue to grow in quality and strength. The growth we recommend in this Report, in research and graduate study, in a vigorous programme in Health Policy and Management, and in an enhanced education for all AKUMC students will be costly; it will require

the recruitment on a wide international front of outstanding faculty and students. But these costs should not simply be seen as an additional burden on already strained budgets; this growth may be necessary to attract the resources the Faculty of Health Sciences will need to avoid stagnation and mediocrity over the coming decades. Only through programmes that attract national and international attention and support, and make AKUMC an educational magnet for the highest quality of students, can we foresee resources rising adequately.

### **3.2.1(B1) *An Expanded Research Programme***

In our general advocacy of expanded research programmes in the Faculty of Health Sciences in Section VII, we did not make specific recommendations on particular foci of this research nor on the level of activity it might involve. We regard closer specification and planning in these matters to be an important and continuing task for the University, now vigorously initiated by the Acting Rector and a Research Committee of the Faculty. We did however take the views that : (1) research in the Faculty would be an indispensable basis of AKU's distinction in the sciences; (2) research should be an important purpose and activity in all the departments of the Faculty; (3) and, on the other hand, the Faculty should be more than a medical research centre and its research programme should not grow so vigorously as to deny resources to other parts of the University. It is incumbent on us, in keeping with our general programme, to make some rough estimate of the minimum level of funding needed to assure the basic mission of the Faculty as a productive centre of research.

We have noted that the recent paper from the Research Committee of the Faculty spoke of need for a research endowment yielding \$ 1 million per year plus other support and capital funds. When the Harvard Report recommended an Institute of Biomedical Research in AKU it estimated its initial recurrent costs at \$ 3 to \$ 4 million/annum in 1983 dollars. Serious research activity does not come cheaply and it seems clear that targets for AKU must be set pragmatically, with one eye on prospective grant funding and the other on more generally disposable resources it may devote to research.

<sup>32</sup> In the essay cited earlier, the President of Johns Hopkins argues, "... as a group, academic health centres have not been successful in fostering adequate numbers of primary care physicians, nor in providing sufficient attention to care and teaching in out-of-hospital settings. Part of the explanation rests in the funding of education through teaching hospitals and with cross subsidies from faculty specialty groups", Richardson, op. cit. p.187.

The support of research on the health problems of the developing countries, both biomedical and that related to health systems and policy, is seriously inadequate at the present time. The recent international Commission on Health Research for Development reported in 1990 that only 5% of global expenditures on health research were directed to problems unique to the developing countries, and that less than 10% of donor assistance for health was devoted to research. The UNESCO World Science Report 1993 recites data showing enormous disparities between the gross expenditures on research and development between OECD and the developing countries (Canada spends more than twice as much as the Middle and Near East, North Africa and Africa South of the Sahara combined); it also calculates that medical research is particularly weakly supported in these regions, as is clinical medicine, except for Africa South of the Sahara. [cf. tables at pp.139 and 142]

It would probably be overly sanguine to expect a major change in this situation over the period we are surveying. The hope for AKU's future in health research must be that it will have the attractions of exceptional creativity and quality. There are examples of research institutions in developing countries which have won strong and widespread support even outside the sheltering embrace of the Consultative Group on International Agricultural Research (CGIAR); the International Centre for Insect Physiology and Ecology in Kenya is one. We have also been encouraged by optimistic views on the possibility of linking AKU's research to the programmes of major research centres in the United States and other countries.

Building adequate support for strong research programmes will undoubtedly require resourceful and persistent entrepreneurial effort. At some point, an appeal to the pride of Muslim countries is likely to be necessary. We have argued earlier that the Third World is not at all happy to be stumbling along in the wake of scientific progress made elsewhere. The desire to win places on the frontiers of research leads countries to support of fields in which they seem to have exceptional opportunities, as e.g., is now occurring in astronomy in India.<sup>33</sup> We also note that AKUMC has recently been approached by the Pakistan Government to undertake a programme

of training specialists in the basic medical sciences to remedy the notorious dearth of such people in the medical schools of Pakistan. Whatever the seriousness of this initiative, it is indicative of a kind of interest that may at some point bring programme funding from a host government that would necessarily involve some research funding. Acceptance of research funding from such "local" sources will, of course, involve serious questions of autonomy and control, but we anticipate that there will be times and opportunities when AKUMC can prudently supplement its research funds from its own and foreign sources in this way.

Another possible source of research funding for AKU's Faculty of Health Sciences is suggested by changing relationships between research and commercial development. The major university centres of medical research in the United States now face decisions over the extent to which they may benefit from lucrative commercial linkages without compromising their sense of obligation to pursue the frontiers of knowledge without regard to financial advantage. This conflict is both sharpened and, in another sense, eased by the narrowed gap between basic research in molecular biology and development of pharmaceuticals. Different positions are being taken by academic leaders, but some, like Dean Tosteson of the Harvard Medical School, believe that medical research centres can enhance their resources through carefully designed commercial linkages without compromising their basic purposes and reputation. When the World Bank reports [World Development Report 1993, p.144] that more than 90% of household, out-of-pocket health expenditures in Pakistan are devoted to drugs, we can readily understand that there are strong motivations to developing national competencies in these matters. The possibility of attracting private investment and perhaps some forms of support from public funds would seem to be intrinsically promising. The presumption here is that an AKUMC research programme would not have to be focused on health problems that are special to Pakistan or where a Pakistan location has some unique medical characteristics. Like the current growth of software production in India it might simply arise from international comparative advantage in products that otherwise might as well be developed elsewhere. Grants and investments from abroad might thus be attracted along with valuable linkages to major medical research centres in other countries.

<sup>33</sup> Cf. "Astronomy in India : Big Science in a Developing Country", Science, v.264, 22 April 1994, pp. 501-502. Despite recurrent expenditures estimated at only \$ 1 million/year, Indian astronomy is now reaching beyond theoretical work to the building of observational facilities that take advantage of its location on the globe, and the elevation of the Himalayas too.

We have dwelt at some length on the prospects of funding research in AKU's Faculty of Health Sciences because we are conscious of the difficulty of finding resources for what we regard as an essential development in AKU's future. We find the sum of possibilities encouraging. But we must also ask what level of funding must be at hand, at a minimum, to assure that AKU attains to distinction in medical research. Taking the faculty proposal that staff be able to devote 20-25% of their time to research, a simple calculation suggests that about \$ 2.5 million/annum will be needed when the Faculty reaches the \$ 13 million annual budgets (in constant dollars) that we have projected. If \$ 1 million or \$ 1.5 million of this total were to come from "internal" sources a research endowment of at least \$ 20 million plus special gifts would be needed. A target of \$ 1.5 million per annum in research grants seems not unreasonably high.

The possibilities of adequate financial resources for developing Health Policy and Management over the next decades look reasonably encouraging. The subject is one in which prospects of research contracts and consultancies on the problems of health systems should continue to grow. The management problems of health systems, from national to local and institutional levels, should also generate continuing needs for graduate and mid-career professional training that could bring substantial fee income. The competencies needed to build a high quality programme in this field lie heavily in the social and managerial sciences. As such they should not be solely at the charge of a unit in Health Policy and Management. For example, professional economic competencies should be drawn from the proposed Institute on Economic Growth, and there are clear relationships with the Community Health Department and the projected Institute of Human Development. This sort of interdependence of component units of the future AKU raises difficult organisation problems which should be considered in detail in a future feasibility study. While from the point of view of financial needs, these interrelations may provide helpful economies, they do not make estimates of net budgetary increases easy. David Bell has estimated [July 5, 1994 fax to F. X. Sutton] that at a minimum, the Health Policy and Management programme might require four to five seniors plus half a dozen

juniors, with likely doubling as consulting and educational courses grow. Allowing for some sharing of staff, we assume that an additional \$ 2 million per annum would be the minimum addition to the Faculty of Health Sciences budget, a large fraction of which should come from grants and current income. Some of these funds, amounting, say, to \$ 500,000 per annum, would, however, have to be found in the University's general resources.

Similar considerations of staff sharing apply in the broadening of the education of AKUMC's students. This development should not depend on AKUMC alone. It should draw for course development and planning on the Institute of Islamic Civilisations, on IED staff, and on other parts of AKU as well. Ultimately, it may be found that much of this broadening becomes the responsibility of an Arts and Science Faculty, at least for a sizeable fraction of AKUMC's students. We assume that this development will depend significantly on fee income, and might in fact benefit from offering post-secondary education to some students who did not ultimately gain admission to the regular medical school course. In considering the financial requirements of the College of Arts and Sciences later we offer some relevant estimates of total budgets. We find the basis of estimates on this preliminary programme for the Faculty of Health Sciences very precarious but guess that at full operation it may require at least \$ 500,000 per annum not recovered from fees.

In sum we foresee that the Faculty of Health Sciences twenty five years hence will require, at a minimum, recurrent funding as follows :

For the maturing and expansion of existing programmes	\$	13.0m
For research programmes	\$	2.5m
For Health Policy and Management	\$	2.0m
For broadened education	\$	0.5m
Total recurrent annual funding	\$	18.0m

We return in the Summary at the end of this Section VIII to review the demands on endowment and other generally disposable funds that these may entail. We shall also then have something to say about capital costs, which we have not included here.

### 3.2.2 *IED and Education in AKU's Future*

In Section VII C.2 of this report we affirmed that AKU should have a continuing concern with improvement of education at all levels in the developing and Muslim worlds, and we viewed the Institute for Educational Development as a strong start in that mission. The funding of IED through 1999 [assuming there was one year slippage in the start] will require \$ 13 million, about 85% of which has been committed by international agencies. Thus, after seven years, IED must be re-financed if it is to continue. One possible future policy for AKU would be to assess the chances of IED's work being carried on by others and elsewhere. If IED's success has made these chances good, AKU might then conclude it had served its mission in creating a good model and turn to other ventures in education. We do not think this a likely outcome and assume that IED will continue in some form in AKU's future in education.

We have envisaged the possibility that IED will continue into the first decades of the next century, in somewhat the pattern in which it has begun, with Professional Development Centres continuing as a major feature of the programme. We write Centres in the plural because we expect the centre at the Sultan Mohamed Shah School and the projected one in the Northern Areas to continue under AKU-IED responsibility. We have already heard of another being projected in Pakistan and of the possibility that one might be established in East Africa. We doubt that IED should go beyond direct responsibility for more than three PDCs, though we recognise there will have to be others if a wide impact on educational quality is to be achieved through this means. Expanding IED's efforts even to three PDCs would involve financial and administrative burdens that might threaten the pursuit of other interests. As we have described, IED also is moving beyond its initial focus on teacher training and is being importuned to take on numerous responsibilities. We argued in Section VII above that response to these opportunities might make IED into a valuable and productive source of educational development in the developing and Muslim worlds. But we also said that it should be well paid for the services it undertakes and that it will have to balance the rewards of new commitments against

its responsibilities for research and high quality instruction. The potential for international support demonstrated in the establishment of IED may be somewhat weakened in the future but is unlikely to wither seriously. IED may thus grow well beyond the minimal size for its worthwhile continuation, in happy demonstration of its pertinence and value. We do think this is a serious possibility. It would have the usual hazards faced by academically based centres of becoming a mere "job shop" without independent and continuing intellectual agendas of its own. It will take vigour and fortitude for the leadership of the future IED to exploit this possibility, but it could make AKU a source of creative services to Third World education, while reducing IED's demands on general university funds.

We have not tried to confine AKU's future in education to a single possible pattern. While IED started in a posture hostile to the development of a School or Faculty of Education in AKU, we do not exclude this latter possibility. We have argued, however, that such a School or Faculty ought not to become a large-scale provider of education for beginning teachers and it should, like other components of AKU, have serious intellectual objectives pursued in a research programme. There are already evidences of mutual desires on the part of IED and the Faculty of Health Sciences staff for closer relations and we should suppose that in the coming years these relations will grow and the establishment of an Institute of Human Development will further strengthen them. Except through contracting and consulting income, education is not a field in which lucrative sources of income may be expected. We thus think that the development of a worthwhile Faculty of Education would be financially a more demanding undertaking than continuation of the IED pattern, especially since the Commission has been concerned throughout its deliberations that strong intellectual purposes be maintained in IED or whatever form the educational commitment of AKU may take.

Given the uncertainties in the evolution of AKU's commitments to the field of education, it is not easy to estimate the basic financing it would have to have to assure a worthwhile enterprise. In the closing year of its present funding IED will have a \$ 2.9 million core budget (net of IDRC and other possible

funding). While the pattern of future staffing and overseas relations will certainly differ, we believe a somewhat larger annual budget of, say, \$ 4 million per annum should suffice, if properly deployed, to undergird an AKU programme in education, which might, of course, grow considerably larger as the years pass. Some endowment or other source of relatively freely disposable income will be necessary to the growth of this part of AKU. The idea of building a substantial endowment for IED has been mentioned in our discussion. We think it too early to make such a specific commitment to an as-yet very young pattern for AKU's work in education. But we do believe that some endowment for education in AKU will assure constancy of purpose and help the University avoid being excessively driven by external funders' desires and preferences.

### 3.2.3 *An Institute of Islamic Civilisations*

We have given high priority to a component of AKU that would carry forward its mission as a Muslim university. We have proposed an Institute of Islamic Civilisations, which despite its importance would not be a large part of AKU. In its initial period, we conceive that a small group of perhaps five senior and junior scholars, with appropriate support staff, and funds for fellowships and visiting scholars would serve to launch this undertaking. While the Institute would have important educational functions from the start through its writings and consultations, and as a high-quality research centre would attract and train specialists in its field, we do not anticipate that it would directly teach large numbers of students. (We anticipate that instruction on Islamic Civilisations within AKU might ultimately fall mostly in the Faculty or College of Arts and Sciences we are proposing.) In its full development some years hence, we conceive that the Institute might be staffed by a minimum of five seniors and five juniors, plus visiting researchers and professors, and graduate fellows.

The location of this Institute in Europe means that larger costs would be entailed for personnel, space, and other needs. The estimates we have made run about \$ 3.5 million per annum in recurrent costs, assuming the use of rented space. In the initial start-up period, we estimate annual costs of \$ 1.7 to \$ 2 million.

The interest of foundations in better understanding of Islamic movements and the tensions that have arisen over them gives us strong reason to think that this component of AKU could attract important support in its initial years and perhaps for much longer. It is also possible that collaboration with other universities and research centres may provide significant help in the mounting of symposia and other activities that will be needed to give direction and prominence to AKU's effort. These sources of support will however leave a substantial dependence on other AKU resources, from endowment income or consumable gifts.

### 3.2.4 *The Institute of Human Development*

The Institute of Human Development we have proposed would have close relations with the Faculty of Health Sciences and the Institute for Educational Development of AKU. While the staff of these parts of AKU are now heavily engaged in other duties, we anticipate in future that they will be able to contribute to this Institute's work. There will still, however, be significant additions to staff needed. We have made estimates on the assumptions that as many as six senior and seven junior staff will be needed (perhaps half expatriate and half local). With provision for other costs and for the graduate student and networking linkages described in Section VII C.4 above, we anticipate core budgets in the range of \$ 2 to \$ 3 million per annum. Engagement in the experimental intervention programmes we anticipate could considerably increase the budget as we hope and expect they will; but we also assume that they would be only undertaken with special grant funds over and above the core budget.

The chances of securing some of the needed funding for this Institute from international agencies appears to us very promising. It would be engaged in activities of the sort that have attracted international funding for Community Health Sciences and IED. Its concern with the effects of childhood nurturance and experience links it to one of the strongest and most stable interests of international aid programmes in recent decades. We may also hope that the originality of this approach to the problems of developing countries may attract donors. There will, nonetheless, be some fraction of the core budget - probably more than half - that will require more than project funding.

### 3.2.5 *The Institute of Economic Growth and Society*

The Institute of Economic Growth and Society could begin as a small unit of AKU, having only two to four senior and half a dozen junior staff to start. It would need to grow larger to be a strong and significant centre for creative work, and in estimating its future core budgets we have assumed six senior and seven junior staff, with more than half the seniors on expatriate terms. We would, of course, hope and expect that the Institute in a few years time would have attracted attention and funding that would enable it to mount consulting and training programmes that would bring it to a scale much larger than the core budget of \$ 2 to \$ 3 million we estimate it will need (without provision for capital costs).

Income for this component of AKU may come from : (1) contracts for research or planning exercises; (2) fees for consultations; (3) research grants; (4) fees for training programmes. We would expect that, if the AKU Institute achieves the quality and distinction it should, these sources of income might in the course of a few years become a very substantial fraction of the total costs. The experience of the Harvard Institute for International Development indicates that an academically based organisation in these fields can be largely self-supporting. Even it, however, had difficulty establishing a satisfactory record of academic distinction and contribution. One may thus expect that the AKU Institute on Economic Growth and Society will need a significant basis of support beyond what it recovers from fees and direct grants. At the start, full support from University funds is likely to be necessary, though imaginative designs may attract donors to share in the initial build-up.

### 3.2.6 *The Institute of Planning and Management for Human Settlements*

As we explained in Section VII C.6, we believe that AKU should aim to extend the education and research it otherwise will provide on architecture and development to include an Institute of Planning and Management of Human Settlements. Given the heavy demands other new proposed components will impose on AKU's energies and resources in the next decade,

we have not seen this Institute as an early development. We think its initiation may be postponed for ten years or so, but should come at some time within the twenty or thirty year period we have been contemplating.

Deferment of the start for this Institute has kept us from detailed consideration of the agenda and staffing it should have. Assuming, however, that it might, like others we are proposing, be effective at a relatively modest size, we have thought it might also have a core budget of \$ 2 to \$ 3 million per annum.

### 3.2.7 *A Faculty or College of Arts and Sciences*

The motivations for conceiving a college of arts and sciences, engaged in undergraduate liberal education, in AKU's future have been described in earlier parts of this report. Such education, if it is to be at a standard worthwhile for AKU to undertake, is expensive, and it ought to be expensive to those who benefit from it. We believe there will be effective demand in many places in the Muslim world for costly education of this sort. AKU could thus charge high tuition fees, but experience elsewhere indicates that not more than half the costs can be recovered from fees if high quality is to be maintained. Moreover, AKU would probably only be ready to follow a high fee policy if it could offer financial aid to highly qualified but poor applicants. The costs of this financial aid would have to be drawn from current gifts and grants or from endowment income, as it is in American universities that seek to maintain need-blind admissions.

Our observations and the advice we have had suggests that there is a minimal size to a liberal arts college, beneath which it is not possible to sustain the variety and quality of staff essential to first-class education. That minimal size we take to be in the neighbourhood of 500 students and 40 staff. The location in Pakistan that we anticipate makes it possible to project substantial use of locally recruited staff and relatively low levels for other costs. On these bases we have calculated recurrent costs for such an institution at \$ 4 to \$ 4.5 million per annum (in current 1994 dollars).

We anticipate that the establishment of a college of arts and sciences in AKU would follow on a period of some years in which transitional or preliminary years of study would be developed by AKU in collaboration with AKES and perhaps other partners. Such ventures might attract support from foundations or even international aid agencies if they showed imaginative educational methods or designs. We do not find it easy to estimate how long this transition period might take. **But our expectations have been that it would be a fairly long period and that a liberal arts college in AKU would emerge only in the latter half of the period we are contemplating.**

While this college should get a large fraction of its income from fees, it is clear that it will not be feasible without a substantial endowment. Initial capital costs might be kept modest by the temporary use of existing buildings, but they will almost certainly be large later. It is not easy to conceive a high-quality, expensive and prestigious liberal arts college without its own attractive buildings and facilities.

### 3.3 *A Summary View of the Financial Prospects for AKU We Have Projected*

Drawing together our projections of core budget figures for the components of AKU that we expect to exist in 2020 or 2030 - and remembering that the figures are in millions of constant, 1994 U.S. dollars - we get the following results :

Faculty of Health Sciences	\$	18.0m
Education	\$	4.0m
Islamic Civilisations	\$	3.5m
Human Development	\$	2.0- 3.0m
Economic Growth and Society	\$	2.0- 3.0m
Human Settlements	\$	2.0- 3.0m
Arts and Sciences	\$	4.0- 4.5m
Total for components	\$	35.5-39.0m

We must add to these recurrent cost figures an allowance for the increased costs of general administration and planning of an internationally dispersed university, and for its commitments to superior educational methods, the advancement of women, and the exploitation of

modern informational technology. At least \$ 2 million per annum seems necessary for these purposes with the overall result that we are **projecting an AKU in the third decade of the next century that will have a core annual budget in the range of \$ 40 million.**

The University's budget in 2025 may in fact be considerably larger if some components grow beyond the basic scale we project for them as viable, worthwhile units; but we assume that such growth will rest on special sources of income these components will attract. Of course, inflation will by that time make the current figures much higher but we again assume that AKU's income is protected correspondingly. We take comfort that AKU's income is protected against exceptionally high rates of inflation that may occur in particular countries where it will have branches by the international status and management of its endowment. But the Commission has been worried by what we called above the "Baumol" factor, after the Princeton economist, William J. Baumol, who gave early emphasis to the fact that costs of higher education rise faster than general price levels. It is not easy to discern what the differential in the rise of costs may be for a unique international university with branches in different countries and with a commitment to exploiting modern technologies that may produce the productivity gains that have been elusive in education. But a differential of 1% would raise "real" AKU costs thirty years hence to nearly \$ 54 million per annum and a 2% differential would raise them to more than \$ 72 million.

The figures we have given above for new components of AKU include annualised estimates of the cost of facilities (such as office equipment and vehicles) and for the rental of premises. They thus include partial provision for the capital costs of the future University as we have projected it. For example, there is liberal provision for rental of premises for the Institute of Islamic Civilisations, which is expected to be in London where rents are high, and much lower estimates for the Institute of Economic Growth which is expected to be in a cheaper, developing country setting. If the University decides to purchase or build facilities for any of these components, either

initially or at some point in the next decades, a need for available capital will arise, but the annual budgets we have projected will be correspondingly reduced. **Thus, for a considerable part of the expansion we are proposing there are not additional capital costs over the figures we have given above.** But the annual budgets we have projected do not include serious estimates of some capital costs we can foresee, such as the cost of space and equipment for the future IED or Faculty of Education, or for space and equipment for research in the Faculty of Health Sciences. And some of the capital costs, such as those for the Faculty of Arts and Sciences, are rather far in the future and hazardous to estimate. We thus are not in a position to offer good estimates of the total capital cost of what we are projecting. Experience thus far, where the capital costs of the Medical Centre have exceeded ten years of operating costs of the Hospital and the Faculty of Health Sciences combined, is probably not a useful point of reference for the diverse new components AKU will have. The fact that \$ 10 of the \$ 62 million sought in the current fund drive is for capital expenditures has been a more helpful reference point for us, as our calculations a little later will show.

We have tried above to indicate where there may be foreseeable resources to help in meeting the large financial requirements we are here projecting. But it is obvious that the University cannot jump quickly to budgets that are four and more times their present size. We have thus asked ourselves if it is realistic to suppose that such large scale growth of AKU is possible within little more than a quarter century from now.

The Commission has tried to assess the resources that may in the longer term sustain the growth we envisage. We have taken encouragement from recent results of the fund drive and hope they are harbingers of a buoyant future. For all its troubles, the world grows generally richer, and more is given to educational institutions. AKU's generous donors, Ismaili and other, may reasonably be expected to rise with this world tide and continue their support of the University. Pakistan, in particular, if it can sustain reasonable political stability, should have a promising economic future with growing potential for private generosity to one of its outstanding institutions.

Somewhat speculative calculations may serve to give a closer sense of these prospects. The Economist, in an October 1-7, 1994 supplement on the global economy, predicts 2.7% annual average GDP growth over the decade 1994-2003 in the rich industrial countries, 4.8% in the developing countries. If we may follow this reasonable optimism and assume an average rise in incomes of 3% per annum the increase over ten years amounts to 34%, over 20 years to 81% and over 30 years to 143%. In recent years, AKU's private donors have contributed about \$ 10 million per annum; assuming they will maintain similar generosity as they share in the general rise in incomes, AKU would receive \$ 108 million in gifts over the next ten years. \$ 138 million over the following decade, and \$ 198 million in the third decade hence, for a total of \$ 444 million. [The calculations are made on a conservative basis using steps from the midpoints of decades; integrating under the exponential curve gives the considerably higher figure of \$ 484 million.] If this sum is allocated to endowment and capital expenditures as in the current fund drive, \$ 372 million would go to endowment and \$ 72 million would be expended for capital additions and improvements. If the endowment were drawn down at 5% it would provide \$ 18.6 million annually thirty years hence. This sum would amount to more than 46% of the \$ 40 million per annum we estimated for the annual budget of AKU at that time. Or if we allow for the differential rise of educational costs at 1% per annum it would provide 34% of budget in 2025, or 26% if the differential is 2%.

**We find these calculations reassuring.** Very rich universities in the United States draw fractions of their income from endowment that are comparable to the lower figures we get when we make allowance for the differential rise in higher educational costs; Princeton's figure is 30% and Harvard's (for the Faculty of Arts and Sciences) 29%. **AKU will have to continue to find strong sources of current income from other sources, but we believe it can grow in the next thirty years in the impressive way we have projected with sufficient disposable resources of its own to assure its independence and quality.**