Summary and Conclusions
SUMMARY AND CONCLUSIONS

The present summary proceeds chapter-wise, and being a summary does not trace out the full extent of argument or chain of reasoning or the relevant factual narrative. Only the gist of the findings, conclusions and suggestions, as the case may be, is laid down. The basic theme, which pervades through the thesis, is the increasing cost of higher education and inadequacy of financial resources coupled with deficiencies in the budgetary allotment of funds for higher education. The thesis demonstrates the role and expansion of higher education and suggests measures to meet the projected requirement of funds through private and public means. The study pertains to general higher education. Technical education is outside the purview of this study.

Higher Education and Economic Development

The birth of the economics of education can be traced back to T.W Shultz who brought into focus the concept of human capital formation in his presidential address at the annual meeting of the American Economic Association in 1960. Together with health economics it forms the core of the economics of human resources.

The subject matter of economics of education deals firstly with the contribution of education to economic growth and secondly with the financial aspects of education systems, analyzing the costs of education and the methods of financing these costs.

The role of higher education is instrumental in economic development. There is a positive correlation between education and development, and higher education leads to higher earnings and further development. Income differentials exist between earners with different levels of education. A significant part of growth in national income is explained by investment in education (human capital). Compared to physical capital, spillover benefits of higher education to the economy are far varied and far-reaching and significant in many ways. This has shifted the attention from physical capital to human capital.

Contribution of higher education to economic development is found to vary from country to country. Incidentally it is one of the highest in India. Science, engineering,
mathematical and agricultural streams of general higher education as well as technical education are found to be more beneficial from the viewpoint of economic development. Higher education (general category) enrolment and per capita income in India over the planning period also reveal a positive association. Higher education not only reinforces the abilities of pecuniary gains, it also inculcates visions of greatness, which is nothing less important for national development.

Higher education and industry linkages are important to meet new challenges of development in future. Vast potential exists in India in this regard.

**Higher Education in Uttar Pradesh**

In India the need for developing education, and more so higher education, was realized by the national government when it came to power after Independence. On the recommendation of the University Education Commission set up by the government in 1948, the University Grants Commission was established (1953) to look into the problems of financing higher education and to co-ordinate and maintain its standard. The growth in higher education at the national level or at the level of a State can be analyzed in this background.

A phenomenal growth in higher education has taken place in India since 1951, with the number of colleges going up from 750 to 9278 and enrolment in higher education from 3.6 lakhs in 1951 to 64.3 lakhs in 1997, faster than at any other level. In the case of Uttar Pradesh the number of degree colleges increased from 40 in 1951 to 486 in 1997 while the number of universities increased from 6 to 26. Enrolment of students increased from more than 50,000 to 8.4 lakhs during the same period.

The state of Uttar Pradesh has the distinction of having the largest number of universities in India with the first university being established in 1887 at Allahabad. By 1997, number of universities had increased to 26. Of these, 3 are central universities, one engineering university, 3 agricultural universities, 14 state universities, and 5 deemed universities. With establishment of 1 open university in 1999, the total is now 27.
Between 1950 and 1994-95, number of girls' colleges in U.P. increased by more than 17 times and that of boys' colleges by more than 10 times. While in 1950 only 15 percent of colleges were of girls, in 1994-95 this had increased to 21 percent.

Enrolment of girls in universities in 1950-51 accounted for 8 percent of total enrolment. By 1994-95, it increased to 27 percent. In the case of colleges, the percentage enrolment of girls increased from 8 to 34 percent.

The number of teachers in universities also increased over this period. The number of male teachers increased by about 6 times from 1201 in 1950-51 to 6833 in 1994-95 while the number of female teachers increased by more than eighteen times from only 71 to 1299 during the period. Thus the ratio of women teachers increased from only 6 percent in 1950-51 to 16 percent in 1994-95.

In the case of degree colleges growth in number of teachers was much higher. While male teachers increased by almost 10 times from 1175 to 11700 female teachers increased by 44 times. The percentage of female teachers increased from only 6 percent to 22 percent. The teacher student ratio in universities, however, deteriorated from 1:12 on the eve of independence to 1:23 in 1994-95. For colleges the respective figures for the two years are 1: 41 and 1: 44.

With a view to relieve burden of students in the existing colleges and in order to ensure balanced development of higher education, the government has established 68 degree and post-graduate colleges in the state in hilly, backward and unserved areas. Similarly for streamlining the administration and supervision, regional offices of the higher education directorate have been established at Gorakhpur, Lucknow, Meerut and Kanpur to achieve better coordination and organized development. The government in U.P. is emphasizing on opening of autonomous colleges or granting autonomous status to existing colleges. It will put more responsibility on colleges to mobilize their own resources. Academic Staff colleges have been set up in U.P. as in other parts of India to organize orientation programmes and refresher courses for teachers.

The growth of higher education in all its aspects has entailed greater financial responsibility on the government and at the same time has provided more facilities to larger number of students.
Plan Priorities

The Five Year Plans ushered in an era of systematic economic and social development in India including development of higher education. An unprecedented expansion took place in the number of institutions as well as in enrolments, as higher education was viewed as the only means to acquire social and vertical mobility. While in the earlier Plans emphasis was on expansion, from Seventh Plan onwards emphasis shifted to consolidation and improvement in standards and reforms to make higher education more relevant to national needs and to form linkages with employment and economic development.

Among other priorities in Uttar Pradesh were introduction of three year degree course, restructuring of courses, pooling of library facilities and documentation to facilitate researchers and teachers, emphasis on quality improvement, etc.

During the Eighth Plan emphasis was on integration of different streams in higher education by networking, sharing of facilities; providing opportunities through distance education to larger segments of population, particularly disadvantaged groups like women and people living in hilly and backward districts; encouragement of private sector participation with proper checks to ensure maintenance of standard to make higher education as far as possible self-financing. An upward revision of fee structure was also an important consideration.

In Uttar Pradesh the two thrust areas were strengthening of existing degree colleges and establishment of new degree colleges in unserved backward areas. Among the schemes emphasized during the Eighth Plan was the establishment of Ambedkar University at Lucknow, establishment of second campus of Lucknow University, strengthening of existing colleges, establishment of Regional Office of UGC at Ghaziabad for better and more effective coordination, etc. Though emphasis was on consolidation, actual plan priorities were more concerned with expansion.

The national priorities of the Ninth Plan placed emphasis on consolidation and optimal utilization of existing infrastructure through institutional networking and sharing of facilities. Grants would be linked to performance and fees restructured and community involved in generation of additional resources.
The government of Uttar Pradesh, in tune with the Centre, has sought to restrict grants to universities and colleges and has emphasized on raising own resources. Some schemes for development of higher education are expansion of existing colleges through infrastructural support, introduction of vocational courses, construction of hostels for women, particularly in rural areas.

On examination of financial allocations we find that the Centre had allotted 24 percent to the Social sector in the First Plan, which however got reduced in subsequent Plans, to 18 percent in the Eighth Plan. Of this, 7.6 percent was allotted to education, which also got reduced to 4.5 percent in the Eighth Plan. In absolute terms expenditure on education increased enormously from Rs.149 crores to Rs.19,600 crores during the same period. Expenditure on higher education increased from 14 crores in the First Plan to Rs.1516 crores in the Eighth Plan, though as a ratio of educational expenditure it was almost the same at 9 percent and 8 percent respectively.

The trends in Uttar Pradesh with respect to plan expenditure on education are the same as at the national level. Allocation to social services fell from 29 percent in the First Plan to 19.5 percent in the Eighth Plan. Expenditure on education likewise declined from 12 percent to 8.5 percent. In absolute terms expenditure on education increased from 18 crores in the First Plan to Rs.1839.75 crores in the Eighth Plan. In percentage terms, during major part of the Plan period 10 percent or less has been devoted to higher education, while 50 percent or more has gone to elementary education. For the Ninth Plan the government has allocated Rs. 160 crores as outlay on higher education, less than the Eighth Plan expenditure of Rs.176 crores.

**Inter-State Comparisons**

A comparative study of the economics of higher education at the national as well as international level will be helpful in laying down policy prescriptions with regard to the same in Uttar Pradesh. Data reveals that the contribution of human capital is most outstanding (higher than world average) in south Asia compared to other regions of the world. It is low for high-income countries where a sufficiently high level of development has been reached.
A comparison of different parameters of higher education reveals that public expenditure on higher education is much higher (5 to 8 percent of GNP) in developed than in developing countries (e.g., India 3.4 percent). Educational expenditure as a ratio of total government expenditure is also lower in developing than in developed countries.

Expenditure on higher education as percentage expenditure on education in developed countries is largely between 20 and 25 percent. Among the developing countries, the percentage in South Asian countries is much lower (e.g., India 13.7 percent, Sri Lanka 9.3 percent) than in other developing countries (e.g., Indonesia 25.1 percent, Syria 25.9 percent and Brazil 26.2 percent).

Regarding the trends in educational expenditure as percentage of GNP, data on the last 10 years shows that for most developed countries – Canada, U.S.A., U.K., France and others, it has gone up. Most developing countries, too, have shown increases. In India the percentage has remained constant, though quite low (3.4 percent).

The share of public financing of education varies between 60 to 100 percent for most countries, developing and developed. In the sub-sector of higher education, too the share is 75 percent and more.

Within the country we find that although the rate of growth of students in higher education is highest in Uttar Pradesh as compared to other states in India, and within the State compared to other levels of education, enrolment ratio in higher education is very low. In India it is less than 7 percent compared to almost 100 percent in Canada, and more than 80 percent in USA. Even in developing countries like Thailand and Philippines the ratio is above 20 percent. The regional average for Asia is 9.7 percent and Latin America 17.3 percent.

Another relevant parameter of comparison is educational expenditure as a ratio of SDP, which in Uttar Pradesh was 3.70 percent in 1994-95, compared to Kerala 6.22 percent, Assam 5.84, and Tamil Nadu 3.61.

Budgetary expenditure on education as percentage of total budget for U.P. has been around 20 percent during the last ten years, marginally lower than the average for states and Union Territories for most of the years under consideration.

Per capita educational expenditure in a state is a better indicator for purposes of comparison than total expenditure. Among the 15 States for which data has been
presented for the period 1985-86 to 1996-97 (Table 5.12), U.P. ranked 14 for all the years except 1991-92 when its per capita expenditure was the lowest. This has been one of the reasons for educational backwardness of U.P.

Expenditure on higher education as a ratio of total educational expenditure in Uttar Pradesh was among the lowest in 1994-95 (Table 5.14) at 8 percent, the average for States and Union Territories being 11.5 percent. The bulk of the expenditure is non-plan expenditure, e.g., Plan expenditure in U.P. in 1994-95 was only 4.4 percent, increasing to 5.2 percent only in 1996-97. On an average Plan expenditure is not even 10 percent of total educational expenditure in most states.

A comparison of number of institutions of higher education shows that the number of universities is highest in Uttar Pradesh at 27 compared to 18 in Andhra Pradesh, 17 in Maharashtra and 13 in Madhya Pradesh. Regarding number of degree colleges, U.P. ranked fourth with Maharashtra, Bihar and Madhya Pradesh occupying the first three positions. The percentage increase in number of colleges for U.P. was only 7, while for Maharashtra it was 29, Bihar 79 and Madhya Pradesh 33 percent.

Analyzing the above information, it is felt that though Uttar Pradesh has the highest population and largest number of universities, other parameters are suggestive of backwardness of the higher education system in U.P. Thus U.P. has more to learn from the experiences of other States than to offer as an ideal in respect of higher education.

Costs of Higher Education

An important aspect of the economics of higher education is analysis of costs. Unit costs of higher education can be helpful in allocating resources to universities and colleges of higher education. Public cost of higher education is measured in terms of public expenditure on higher education and private cost measured in terms of students’ fees.

Studies on costs by British and American economists, among others, have classified costs into public, private and opportunity costs. Comparisons with different countries have led to the conclusion that costs vary from one country to another, within a country from one system to another, and also within different educational systems. Costs
have been found to rise with time. They can be reduced by raising enrolments to an
optimum size, which will differ for different levels of education. Size of the institution is
also an important variable in explaining differences in costs per student. In India
Lakdawala and Shah have found that professional education is costlier than general
education. Micro level studies conducted in India and abroad have also come to same
conclusions.

An analysis of per unit cost in higher education in Uttar Pradesh during the period
1950-51 to 1993-94 reveals the following.

Per unit voluntary costs (endowments) have declined drastically indicating
minimal voluntary support to higher education. They fell from Rs.204 to Rs.19 in terms
of current prices and from Rs.388 to Rs.3 only at constant prices during the above period. Per unit compulsory cost (fee) declined from Rs.146 to Rs.119 at current prices and from Rs.279 to Rs.17 at constant prices during the above period.

During the same period per capita State income increased remarkably from
Rs.258 to Rs.4787, recording a compound average annual growth of 7.02 percent. Per
capita fee on the other hand, recorded a negative growth rate of −0.47 percent. During the
first two decades, however, positive annual growth rates in both the parameters were
obtained. It was from 1970-71 onwards that per pupil fee recorded a negative annual
growth rate. As a proportion of per capita State income, per pupil fee fell from 0.566
percent to 0.025 percent only.

The above findings point to two important conclusions. Firstly, that costs of
higher education in Uttar Pradesh could not be internalized, and, secondly, that ample
scope exists for tapping private voluntary as well as compulsory sources of finance.

Regarding per unit public costs of higher education in U.P., during the period
under review, they increased from Rs.112.70 to Rs.3226.30 at current prices and from
Rs.224.0 to Rs.466.9 at constant prices. The average compound annual growth rate was
8.11 percent at current prices and 1.7 percent at constant prices, the rate of growth being
much higher after 1970-71 at current prices and lower at constant prices.

Resource constraints and increasing burden on public budget has prompted the
UGC to announce a fee formula for institutions of professional education which it might
extend to all private, unaided professional institutions in the country. Three types of seats
have been identified (a) free seats, with a minimum of Rs.1000 as fee (b) Payment seats, with a fee of Rs.10,000 and (c) NRI seats, with a fee of Rs.20,000 or more. Among other regulations set by the UGC at least 50 percent seats will be free (standard fee) seats.

A breakup of costs into recurring and non-recurring costs shows that for all institutions of higher education in U.P., recurring costs are predominant, varying between 92 to 93 percent for universities and 97 to 98 percent for degree colleges. Of the recurring costs the most important item is salaries, accounting for 90 to 95 percent for both universities and colleges. Next in importance are laboratory and equipment costs. Of the non-recurring costs, building and construction are the most important items.

Incomes of the institutions being lower than costs, development of the higher education system is being adversely affected.

Sources of Finance

A study of the sources of finance for higher education reveals that broadly speaking there are two sources for financing education – Internal and External. Internal sources are further subdivided into private and public. Among the private sources, two important categories are fees and endowments. The government (Central, State and Local) and government institutions like the ICAR, CSIR are the public sources of educational finances in India.

Over the planning period percentage contribution of different sources of finance has undergone a remarkable change. Government has emerged as the most important source, both at the level of total education as well as at the level of higher education, accounting for 90 percent and above. The relative roles of public and private sources have reversed since 1950-51. Share of fees is now less than 5 percent and of endowments not even 1 percent. Ninety six percent of resources come from the government, mainly State governments. Central grants are negligible.

Studies show that government grants in general in all States are miserably inadequate. Disbursement of grants too is far from satisfactory. The timing and manner of release of grants is faulty so that its full potential cannot be realized. Compared to other states in India, expenditure on education as percentage of budgetary expenditures in U.P. is much lower. However, in terms of SDP educational expenditure is higher than most
States in India. Being the most populous State in the country, per capita educational expenditure in Uttar Pradesh is the lowest after Bihar.

Although higher education is faced with a resource crunch, there is a difference of opinion regarding raising of fees. Some experts feel that a full cost fee structure will not be desirable to introduce, as the majority of the students cannot afford a higher fee than what they are already paying. It is therefore felt that the government will need to continue to bear the cost of higher education for some time to come.

Budget Allotment and Grants-In-Aid Procedures

Grants have emerged as the main source of financing of higher education in Uttar Pradesh. Major part of the grant is obtained from the State government, a small part from Central government agencies, most important being the UGC. Grants are of two broad categories – deficit grants and Block grants. Deficit grants are based on estimated approved expenditure, subject to adjustment on the basis of actual income and actual expenditure. Block grants are statutory, ad hoc or based on past expenditure with or without allowance for normal increase. Block grant, being more flexible is preferable.

Grants-in-aid vary from one university to another. The government of U.P. has stipulated that grants be used only for the purpose for which they have been sanctioned. No objective criteria for grants exist, actual disbursement being subject to manipulations.

The UGC gives 100 percent assistance to universities for additional staff and equipment, 50 to 75 percent for other purposes. For development of colleges, UGC grant varies with enrolment and number of teaching staff. For postgraduate education in colleges, grants to humanities are lower than for sciences. Financial assistance for Faculty Improvement Programme is also given. Development grants are also given for universities and colleges for which a matching grant needs to be provided by the State government for management of the institutions concerned.

State governments give grants to universities and colleges in the form of maintenance grants for routine functioning of the institution, development grants on matching basis to UGC grants as well as for schemes sponsored by the Ministry of Health, ICAR, etc., and non-recurring grants for building, equipment, etc. Grants may be
earmarked for specific purpose or these may be block grants, which allow freedom to institutions to rearrange priorities. The former, though rigid, ensure implementation of the projects for which they have been sanctioned.

A critical evaluation of grants-in-aid brings out the following points: The system of grants-in-aid as it is practiced is discriminatory, giving preference to universities and professional colleges against colleges of general education. They are often determined on an ad hoc basis by the bureaucracy. Further, they are inadequate, inelastic and have not played a promotional role. Regarding development grants given by UGC on a matching basis, States have difficulty in providing matching provisions or are required to change their priorities. It is felt that 100 percent assistance for fewer schemes is preferable to a large number of schemes with matching assistance. Delays in assessment, sanction and release of grants are common and are responsible for their inefficient use. While the universities maintain that even when requirements are sent well in advance they are kept pending with the government, officers claim that the universities do not submit budgetary proposals in time and that they are often over estimated. Lack of financial discipline is the main cause of resorting to overdraft by universities. To overcome delays and inadequate grants, universities have to draw upon surpluses accumulated in previous years or to resort to overdrafts. Other methods adopted in such situations are keeping posts vacant, not taking up development plans, reduced expenditure on games, sports, etc. In some cases mortgage of university property has also been resorted to.

There are three formulae for calculating the grants - deficit basis, incremental basis and ad hoc basis. There is no standard method of estimating deficit for calculating the amount of grant. Ambiguity is responsible for financial indiscipline as well as manipulations. The incremental basis formula suffers from arbitrariness, as there is no relationship between the percentage increase and rise of prices during the period. The ad hoc basis is unsatisfactory, as the requirements of institutions are not taken care of.

Thus the system of grants as practiced has rendered the financing of higher education in Uttar Pradesh very inefficient.
Expenditure on Higher Education

An analysis of trends in growth and patterns of expenditure on higher education becomes essential. As has been discussed earlier government grants are the primary source of incomes of institutions of higher education. Higher education is a small sub-sector of the total educational sector in U.P. In terms of percentage of total educational expenditure of the State, it has remained almost constant at around 8 percent. While primary education claims 50 to 60 percent of the total expenditure, secondary sector’s share is around 30 to 35 percent. Time series analysis of higher education expenditure in U.P. reveals its growth from Rs.0.57 crores in 1950-51 to Rs.352.41 crores in 1997-98 (BE) at current prices, while at constant prices the growth has been from 1.13 crores to Rs.37.98 crores. Increase in enrolments, increase in appointments of teachers, higher emoluments of teaching and non-teaching staff and higher prices are among the factors responsible for increase in expenditure on higher education.

The ratio of higher educational expenditure to total budgetary expenditure during the period under review has been between 1.10 percent (1950-51) and 2.00 percent (1980-81) except in 1960-61 when it was only 0.85 percent. Higher educational expenditure as a ratio of Net State Domestic Product has been very low, varying between 0.04 percent (1950-51) to 0.34 percent in 1989-90.

A break-up of expenditure into plan and non-plan reveals that since 1965-66 (from which year the break-up is available) up to 1997-98, the relative ratio of plan expenditure has fallen from 48.2 percent to 5.2 percent while share of non-plan expenditure has increased from 51.8 percent to 94.8 percent. While plan expenditure grew at a compound annual growth rate of 7.0 percent, non-plan expenditure went up by 16.9 percent. In absolute terms in 1997-98 plan expenditure was only Rs.18.41 crores while non-plan expenditure was of the order of Rs.334.00 crores.

Per pupil expenditure in higher education in U.P. went up from Rs.113 to Rs.3303 at current prices during the period 1950-51 to 1996-97 and from Rs.224 to Rs.383 at constant prices. This indicates that total expenditure on higher education could not keep pace with inflation and enrolments.

In terms of composition of higher education expenditure in U.P. we find that:
i. Grants to non-government colleges are by far the most important, its share increasing from 28 percent in 1950-51 to 62 percent in 1997-98, claiming the largest share.

ii. While earlier grants to universities was most important it now occupies second position in importance. Expenditure ratio on this head declined from 59.6 percent in 1950-51 to 25.73 percent in 1997-98.

iii. Grants to government degree colleges and institutes are next in importance, its share having increased from 7.00 percent in 1950-51 to 10.8 percent in 1997-98.

The compound annual growth rate in higher education expenditure for the three important components, over the period 1950-51 to 1997-98 has been – grants to universities – 12.7 percent, from Rs.0.34 crores to Rs.90.69 crores; grants to non-government degree colleges and institutes – 16.6 percent, from Rs.0.04 crores to Rs.38.08 crores; grants to government colleges and institutes – 15.7 percent, from Rs.0.16 crores to Rs. 218.34 crores. Total expenditure on higher education has increased from Rs.0.57 crores to Rs.352.41 crores.

An analysis of grants to 8 selected universities for the period 1989-90 to 1994-95 shows that 75 to 90 percent of allocation to universities is claimed by these eight alone. The two residential universities of Allahabad and Lucknow together claim 45 percent of the allocations. Next in terms of allocations is the Gorakhpur university. Others are Sanskrit Sampurnanand, Meerut, Kashi Vidyapeeth, Kumaon and Garhwal.

Public expenditure on degree colleges reveals that non-government colleges get 80-90 percent of the allocation. In spite of increase in public expenditure most of the non-government colleges are running into great financial crisis like the universities. The major share of expenditure is on men’s colleges whose share increased from 73 percent in 1989-90 to 79.4 percent in 1994-95 (recording compound annual growth of 10.1 percent). The share of women’s colleges increased from a mere 0.6 percent to 16.4 percent during the same period (recording a phenomenal compound annual growth of 112.4 percent). Compound annual growth in total expenditure on degree colleges was 8.2 percent.
Additional Resource Mobilization

The sector of higher education in Uttar Pradesh, as elsewhere in the country is facing a grave financial crisis. With dwindling voluntary private contributions and fees and other charges virtually unchanged for decades, the burden of financing gradually shifted on to the shoulders of the government. Faced with huge fiscal deficit, government is now resorting to heavy cuts in expenditure on higher education, instead of trying to mobilize more resources for higher education, which has increasingly come to be considered a non-merit good. Compelled with dwindling resources this has led to a financial crisis and an urgent need for additional resource mobilization. Even prestigious universities like Delhi University, the Delhi School of Economics, Calcutta University and in Uttar Pradesh universities of Allahabad and Lucknow are confronted with grave problems. Consequently, development of the universities is being adversely affected as training programmes have been scrapped as in Delhi university, subscription to journals is reported to have been slashed down at the Delhi School of Economics in 1993 from 600 to 200. Calcutta University decided to sell off the gold and silver medals which remained unclaimed since 1901. Allahabad University had to resort to heavy overdrafts and was indebted to the banks to the tune of almost Rs.2 crores. In Karnataka, Bangalore University resorted to fee hike, which met with serious protests from the students. The problem in these and other universities is deep rooted and cannot be solved by such temporary measures.

The government cannot overnight withdraw financial assistance and, as is felt by a large number of people, will have to shoulder this responsibility for some time to come. Meanwhile efforts have to be made to raise finances from other sources as well.

From the viewpoint of additional resource mobilization, the system based on market mechanism is gradually gaining ground. Traditionally higher education has been left out of price theory (being considered a social good) but now that it is competing for an increasing share in government budget, it is being examined in a different light. It is, however, different from other goods in that (a) consumers are not the buyers (b) producers are not the sellers and (c) financiers are not the controllers. Hence price is not determined by market forces. Nor are prices allowed to rise despite increased demand.
This factor is responsible both for the financial crisis that has come to set in and for the inefficiency of the system as well. Further it has led to the mushroom growth and efficient functioning of private higher (professional) institutions.

An attempt has been made to project the requirements of finance for higher education in U.P. over the next ten years, based on expected increase in enrolments and costs over the period.

Two alternatives of expected enrolment are (a) \( P_1E \) based on trend rate of growth in enrolments. According to this estimated enrolment is expected to rise to 21.03 lakhs by 2010, (b) \( P_2E \) based on the assumption that 15 percent of the higher education age-cohort population will join higher education institutions. On this estimate, enrolment will rise to 33.4 lakhs by 2010.

Similarly two projections of costs have been done (a) \( P_1C \) based on trend rate of growth of costs during 1979-80 to 1993-94. Costs work out to Rs.500 crores in 1999-2000 increasing to Rs.1156 crores in 2009-10 (b) \( P_2C \) based on the assumption of 10 percent price rise per year. Estimates of costs work out to Rs.843 crores in 1999-2000 and Rs.4723 crores in 2009-10. Projected costs divided by projected enrolments give us projected per pupil cost. Thus we have four alternatives of per pupil cost projections:

1. \( P_1C/ P_1E \) in which per pupil cost rises from Rs.4048 to Rs.5497 over the ten-year period.
2. \( P_1C/ P_2E \) in which per pupil cost falls from Rs.3681 to Rs.3461.
3. \( P_2C/ P_1E \) in which per pupil cost rises from Rs.6854 to Rs.22458.
4. \( P_2C/ P_2E \) in which per pupil cost rises from Rs.6231 to Rs.14141.

Part of the cost will be borne by the student in the form of fee and the rest by the government in the form of public expenditure.

In each of the above projections per pupil fee has been calculated based on (a) 35 percent of the cost being borne by students (b) 50 percent of burden on students, (c) 60 percent of the burden on students. Thus:

(1) With per pupil cost projection \( P_1C/ P_1E \), per pupil fee rise will be:
   a) with 35 percent burden on students, from Rs.1417 to Rs.1924.
   b) with 50 percent burden on students, from 2024 to 2748.
c) with 60 percent burden on students, from Rs.2429 to Rs.3298.

(2) With per pupil cost projection $P_1C/P_2E$, per pupil fee will actually decline:
   a) with 35 percent burden on students – from Rs.1288 to Rs.1211
   b) with 50 percent burden on students – from Rs.1840 to 1731
   c) With 60 percent burden on students – from Rs.2208 to Rs.2077.
In all the three cases, projected per pupil fee declines because they are all based on $P_1C/P_2E$, which shows a decline in per pupil projected cost.

(3) With per pupil cost projection $P_2C/P_1E$ per pupil fee rise will be:
   a) with 35 percent burden on students, from Rs.2,399 to Rs.7,860
   b) with 50 percent burden on students, from Rs.3427 to Rs.11,229
   c) with 60 percent burden on students, from Rs.4112 to Rs.13,457

(4) With per pupil cost projection $P_2C/P_2E$ per pupil fee rise will be:
   a) with 35 percent burden on students, from Rs.2181 to Rs.4949
   b) with 50 percent burden on students, from Rs.3115 to Rs.7070
   c) with 60 percent burden on students, from Rs.3738 to Rs.8484

Which of these alternatives will actually be adopted by the government remains to be seen. It will depend on how much of the burden government wants to bear and how much it can shift to students by raising fee without much hue and cry.

Alternatives of Additional Resource Mobilization

Self-financed programmes in the private sector have been quite successful. The same can be adopted by the government colleges and universities. Resources generated by such programmes can be used for improving quality and for modernization. At the same time dependence on government for funds will be reduced. Another measure for generating more funds can be by exporting education to other developing countries.
There is general consensus that foreign students may be asked to pay higher fees. A number of institutions including IITs and many universities, including universities of Pune, Lucknow and Aligarh have in fact resorted to this measure.

Among the non-government sources, industry can be used to collaborate with research activities in the universities. Kurukshetra University has made some initiative in this area, but the experience of the universities in Uttar Pradesh is not very encouraging.

Another source whose potential has not been fully explored is endowments. Well-settled alumni, industrialists and businessmen, have in the past contributed generously for specific programmes / causes. Although it cannot be a very reliable source, its importance should not be ignored.

Additional resources may also be mobilized through sponsored research and consultancy. Institutions of higher education can themselves undertake production of materials and services in various departments in the Engineering and Medical Faculties, department of Business Management, Computer Science, Fine Arts, Journalism, etc. Universities may also set up publishing houses for publication of books and journals.

At the same time government cannot take its hands off from financing higher education, especially in view of its commitment towards achievement of social justice.

The strategy for solving the financial crisis must therefore aim at:

I. A more rational government funding,

II. Innovative measures of raising resources.

At the same time, it is important that there must be a better utilization and management of the resources raised. This is because governments are facing (both at the Centre and at the State level) increasing fiscal constraints as demand for public expenditure is rising from all departments / sectors and resources are limited. The chances of allocating substantially additional resources for education are poor and bleak. At the same time, due to changes in economic policy, controls and restrictions are relaxed and competition is increasing. It is believed that the sure way of meeting competition is to raise educational level and specialized achievement of the people who constitute the labour force. Knowledge, skill and efficiency need to be productivity oriented and it is more so required in backward and large State like Uttar Pradesh. From this point of view, as elaborated in this thesis, importance of higher education becomes self-evident. More
resources will have to be generated and several measures have been suggested to generate funds for higher education in U.P. Some of these intend to bring more money from public sources while others largely bank upon private contribution. We are also aware that there is a need to use the existing resources efficiently, so that available resources yield best results.