

**HIGHER EDUCATION IN MAURITIUS: AN
ANALYSIS OF FUTURE FINANCIAL
SUSTAINABILITY**

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**A thesis submitted in partial fulfilment of the
requirements of Napier University for the degree
of Doctor of Philosophy**

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DECLARATION

This is to certify that the present study is based on my original work and my indebtedness to other works/publications has been duly acknowledged. I also certify that neither this thesis nor the original work therein has been previously submitted to Napier University or any other institution for a further degree.

PRAVEEN MOHADEB

May 2003

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ABSTRACT

This research analyses the financial sustainability of the higher education system in Mauritius against a background of ever-rising demand. The purpose of the research is to identify an efficient and sustainable funding system for higher education. It explores alternative ways to mobilise additional funds to supplement government funding and the possibility of cost sharing among stakeholders. The methodology used includes a review and analysis of existing funding mechanisms; a comparative study with selected countries and a survey and interviews to determine the willingness and capacity of Mauritians to pay for higher education. The current target is that the enrolment rate will increase from the present level of 12% to 30% by 2010. With the present policy of government funding almost the totality of higher education the amount of funds allocated to higher education as a percentage of the total expenditure on education would have to increase from 15% to 46 %. As a percentage of GNP it will have to increase from 0.53% to 1.47%. It would be very difficult for the government to sustain such an increase and hence the financial sustainability of the system itself is open to question. The funding model developed from the research proposes that higher education is increasingly being regarded as a 'private good' and full public funding can therefore no longer be the expected norm. The direct beneficiaries are gradually being called upon to pay in many countries for Higher Education. It is argued here that Mauritius will have no choice but to accept this new 'paradigm' of HE funding. The share of contribution of the students, in terms of tuition fees, proposed in the model is based on the fact that Mauritians are already spending a substantial amount of their income on education in terms of private tuition at the pre higher education level and on the findings of the survey and interviews. The share of government funding has been arrived at after considering the share of government expenditure in selected comparator countries. With the proposed model the amount of funds to be allocated to higher education as a percentage of the total expenditure on education would increase from the present level of 15% to 25 % in 2010. As a percentage of GNP it will increase from 0.53% to 0.82%. Proposals are also made for a student loan scheme and a transparent method of resource allocation to the higher education institutions.

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LIST OF ABBREVIATIONS

AVCC	Australian Vice Chancellors' Committee
CFO	Chief Finance Officer
COMESA	Common Market for Eastern and Southern Africa
CPE	Certificate of Primary Education
DBM	Development Bank of Mauritius
DE	Distance Education
DE/OL	Distance Education/Open Learning
EFW	Employees Welfare Fund
GATT	General Agreement on Tariff and Trade
HECS	Higher Education Contribution Scheme (Australia)
HEIs	Higher Education Institutions
HESA	Higher Education Statistics Agency
HSC	Higher School Certificate
ICT	Information and Communication Technology
IFE	Institut Francophone de L'Entrepreneuriat
IIEP	International Institute for Educational Planning
IOC	Indian Ocean Commission
IST	Institut Supérieur de Technologie
IT	Information Technology
IVTB	Industrial and Vocational Training Board
MoESR	Ministry of Education and Scientific Research
MGI	Mahatma Gandhi Institute
MIH	Mauritius Institute of Health
MIS	Management Information System
MCA	Mauritius College of the Air
MIE	Mauritius Institute of Education
MRC	Mauritius Research Council
N/A	Not Available
OAU	Organisation of African Unity
OECD	Organisation for Economic Co-operation and Development
PFI	Publicly - Funded Institutions

S&T	Science and Technology
SADC	Southern African Development Community
SC	School Certificate
SDIM	Swami Dayanand Institute of Management
SSR	Sir Seewoosagur Ramgoolam
SSRMC	Sir Seewoosagur Ramgoolam Medical School
TEC	Tertiary Education Commission
TEIs	Tertiary Education Institutions
UGC	University Grants Committee
UN	United Nations
UNESCO PROAP	UNESCO Principal Regional Office for Asia Pacific
UIO	University of the Indian Ocean
UoM	University of Mauritius
UTM	University of Technology

Mauritius – The Country

Mauritius is a very small island nation. It is one of the three islands, collectively called the Mascarene Islands, situated in the southwest part of the Indian Ocean (the other two being Reunion and Rodrigues islands). It lies on longitude 57° east of the Greenwich Meridian and its latitude ranges from 19°58" to 20°32" in the southern hemisphere, just north of the Tropic of Capricorn. It is a volcanic island of 2040 sq km situated at a distance of 2000 km from the east coast of Africa and 900 km from Madagascar. Although the total land area is small, yet its exclusive zone is quite vast, covering some 1,700,000 sq km. of seas.

The French occupied the Island from 1715 to 1810. The British conquered the Island in 1810 and it remained a British colony until its independence in 1968. It became a Republic in March 1992. The Republic of Mauritius comprises three main islands, Mauritius, Rodrigues and Agalega and several smaller islands around those three main islands.

As at end December 2002, the population of the Republic of Mauritius stood at 1.2 million growing at a little less than 1% per annum. The population of the country aged 5 to 24 years was 0.4 million.

The Challenges Ahead

Mauritius has experienced a major structural transformation from an agricultural mono-crop economy with high levels of unemployment and low per capita income to a middle-income country with almost full employment.

In spite of this, Mauritius remains vulnerable to external influences given the openness of its economy. On the external front, Mauritius is being confronted to new challenges arising from post GATT, the creation of new economic

blocks and competition from former socialist and other newly developing and reformed economies.

With globalisation the domestic and international environment confronting Mauritius in the coming years will be much more competitive and demanding, requiring emphasis on quality, value added, flexibility and innovativeness.

Major constraints have also cropped up internally. Growing shortage of skilled labour, coupled with increased pressures for higher wages and salaries, thus eroding the competitiveness of the country's exports on the international market, and the resurgence of unemployment threaten to slacken the growth momentum of the economy.

The government policy is therefore to encourage the manufacturing sector to further modernise its operations and diversify its activities to ensure that Mauritian products become more competitive quality-wise and price-wise in order to maintain, and if possible, increase its share in the international markets and further develop the services sector. This strategy requires a more rational and optimal use of available resources, that is a steady and continuing growth in total factor productivity, including labour productivity, a new industrial culture, improved work ethics and rapid response capacity. The education system, especially higher education, needs to be re-oriented to respond more effectively to these challenges and to modernise the economy.

With the changes that are occurring in the economic environment, the higher education sector will play a key role in securing Mauritius' economic development in future. It will improve its competitive edge, economic growth, employment opportunities, productivity and social cohesion. As the country moves into the 21st Century, the higher education sector will have to continually adapt to meet on-going changes in student needs.

The present level of participation in higher education is low for a country like Mauritius, which intends to be the "tiger" of the Indian Ocean. In fact, other countries like Taiwan and Korea have a participation of 31% and 48%

respectively in higher education (*Ministry of Finance, 1998/1999 Budget Speech*). If Mauritius wants to position itself as a knowledge-based society, it will have to increase the participation rate in higher education. In view of its rising labour costs and competitive pressures from emerging economies like China, Malaysia and Indonesia, Mauritius will need to improve its skill-mix, not only to increase output per unit of labour, but also to produce high value added goods and services. To this end, Mauritius will need more skilled technicians and professionals and hence more and better quality higher education is necessary for the country's continued development.

Mauritius will have pressures on its higher education sector from:

- (a) The continued growth in student numbers as the population bulge currently in the secondary school sector moves through to the higher education sector.
- (b) The on-going pressure to improve quality.
- (c) A greater need for employees to return to higher education periodically during their working lives to update their skills.
- (d) The internationalisation of higher education.
- (e) The need to adapt to and exploit advances in information technology.

Rationale for this Research

Education is an important contributor to economic growth.

“By investing in themselves people can enlarge the range of choice available to them. It is the one way free men can enhance their welfare” (Schultz, 1961, Investment in Education, in American Economic Review, No 51, pp. 1-17, March 1961).

In his work on Investment in Education, *Shultz* provided convincing evidence that education was an important contributor to economic growth. His conclusion was supported by a number of studies. *Bowman and Anderson (1963)*, *Harbison and Myers (1964)* and *Inkeles and Smith (1974)* argue that a literacy rate of about 40 % is necessary but not sufficient for a sustained economic growth. They contend that industrialisation and more rapid economic expansion cannot occur until 70 to 80 % of the population is literate. This implies that education enhances productivity and brings about economic growth.

Simon Kuznets (1963) has provided evidence of labour's dramatically increased share in the production of the GNP with progression from poverty to affluence. *T.W. Shultz (1974)* has explained how education may affect productivity in a context of change. *Hebert Simon (1978)* has stated that the greatest resource available to mankind is in men's heads. All three of these Nobel laureates, different as their views may be in other respects, have turned a spotlight on the human factor as a generator and implementer of new knowledge that can be the foundation of growth and the explanation of high marginal productivities of both physical and human capital. The development of human capital especially through higher education is therefore a necessary condition for the development of any country.

The Prime Minister of Mauritius, Sir Aneerood Jugnauth, in his foreword in "*Citizens of Tomorrow – Education in Progress 83-93*" (*Parsuramen, p .V, 1993*), has stated that:

"The expansion of education and the improvement of its quality and relevance are central to our progress as a nation. Economic growth depends on a well-educated workforce. If we are to survive in a competitive world, we need people with knowledge and skills, with imagination, with the ability to think and with the power to translate thought into action. All these can be stimulated by the educational system."

In another foreword for *“Our Children our Future Our Hope”* (Parsuramen , p. III, 1994), he has further stated that:

“No Government and no society can claim to survive in today’s world without the essential contribution of education. Mauritius has the privilege to belong to a people, which have always been eager for knowledge, which has been constantly motivated by the desire to learn, to move forward and to progress.

If we cast a glance at the history of our island, we would find that without the urge for knowledge, without the transmission of fundamental values, the people of our country would, certainly have known a different destiny today. Our socio-economic progress, our peaceful co-existence, our respect of human rights and our cherished democratic tradition would never have been translated into reality without education.

A man who does not recognise the value of education can never succeed in life. A government which is not convinced of the necessity to invest in its people cannot advance ahead, cannot build a sound and stable society and cannot aspire for peace and prosperity.”

Several studies have emphasised the importance of education. Barro (1991), Chu et al (1995), and Tanzi and Chu (1998) argue that public expenditure allocations for education can improve economic growth while promoting equity. Gupta and Verhoeven (2001) and Gupta, Verhoeven and Tiongson (1999) suggest that both the size and the efficiency of public education expenditure are important in improving socio-economic performance.

Malcolm Gillis, President of Rice university has stated in 1999 that:

“Today, more than ever before in human history, the wealth or poverty of nations depends on the quality of higher education”. (Higher Education in Developing Countries – Peril or Promise, p. 15, World Bank, 2000).

Jonnstone (1998) argues that, higher education has always been an important priority in the public agenda. It is a repository and defender of culture, an agent of change in this culture, an engine for national economic growth, and an instrument for the realisation of collective aspirations.

Like many other countries, Mauritius is also facing an increasing demand for more and better quality higher education. For the academic year 1999/00 only about 39.5% (Table 3.2), of the qualified applicants were admitted to the University of Mauritius. Improving access to higher education and improving the quality of higher education require that more financial resources be made available to higher education institutions and that resources already available to these institutions be managed and utilised in the most efficient manner

In Mauritius, higher education is free. Almost the totality of the funding required for higher education comes from the government. One of the priorities of the government is to provide quality higher education to increasing numbers of people. But already the present level of government spending is straining the budget. With expansion in enrolment and improvement in the quality of higher education and with the government's determination to maintain free education, there is a need to raise a substantial amount of funds to sustain the higher education system in Mauritius and also to improve the efficiency of the utilisation of available resources. Alternative sources of funding for the higher education sector will also have to be found to supplement government funding.

Research questions and Research Propositions

The research is focused on the following key research questions and propositions:

Research Questions

1. Is the policy of the Government of Mauritius of having free education at all levels, especially at the higher education level financially sustainable?
2. With pressures on demand for quality higher education on the one hand and the determination of the government to maintain free education on the other, the financial sustainability of the system as it exists now will present major challenges for Mauritius in the future. Will the government find it more and more difficult to continue to sustain free higher education against a background of ever-rising demand?
3. Do alternative ways exist (besides government grant) to mobilise additional funds for the higher education Sector in Mauritius? If so are these being tapped? The research will identify alternative efficient and effective funding scenarios.
4. Is the application of market forces in the provision of higher education and hence the sharing of cost of higher education among all stakeholders possible in Mauritius?

Propositions

1. The policy of the Government of Mauritius to continue to have free higher education is a potential threat to the expansion of higher education in Mauritius.

2. Planning, control and monitoring of the use of financial resources in the higher education sector in Mauritius are not as effective as they could be.
3. Unit cost in the higher education sector in Mauritius is amenable to significant reduction and thereby increased efficiency.

Objective of the Research

The objective of this research is to identify an efficient alternative funding system for higher education that meets the expansion needs of Mauritius. In order to do so it is necessary to critically analyse alternative systems of allocation, utilisation, control and monitoring of financial resources, cost effectiveness and cost efficiency and mobilisation of resources in the higher education sector in Mauritius.

An evaluation of educational planning in the context of the higher education sector has been undertaken so as to assess its impact on increasing access, improving quality and promoting efficient use of resources.

Comparison with selected countries of similar size, stage of economic development and population has been undertaken to locate the position of Mauritius vis a vis those selected countries.

An estimate of the demand for higher education and the supply of higher education for the next ten years is developed. This will be used to estimate the cost associated with satisfying the rising demand for higher education over the next 10 years. An analysis of the extent to which the government can sustain the financial burden of free higher education is also undertaken. Alternative ways of funding the higher education cost are identified and explored with a view to identifying a solution for the higher education sector in Mauritius.

The process of allocation of government grant to higher education institutions is also examined and a formula funding model is proposed for the allocation of such grant. This is considered in view of the fact that allocation of government grant to higher education institution is based on incremental budgeting and not on specific criteria or parameters. For instance unit cost in higher education in Mauritius has been calculated only recently with the setting up of the Tertiary Education Commission. Previously each higher education institution had its own budget, which was allocated by the Ministry of Education on the basis of incremental budgeting and there was no central place where data on actual expenditure and costs was collected and analysed. Unit costs are still no used in the allocation of government grants to higher education institutions in Mauritius.

Research Methods

The research methods used in this study includes literature search, desk research for collection of secondary data (data already available from annual reports, statistical records, and publications among others) and a survey and an interview (for collection of primary data). It is expected that the methods used will provide a systematic and scientific approach help to find solutions to the key research questions and problems and to test the hypotheses identified above.

A review and analysis of existing practices in the financial management of higher education is undertaken to identify weaknesses and to propose remedial measures in the areas listed below. This is done by making direct references to relevant theories of educational management, such as *Psacharopoulos & Woodhall (1985)*, *Psacharopoulos et al (1986)*, *Williams (1990)*, *Albrecht & Ziderman (1992)*, *Blair (1992)*, *Chinapah (1992)*, *Williams (1992)*, and *Johnstone(1998)*.

- (a) Identification of future demand for higher education
- (b) Planning & budgeting
- (c) Resource allocation and utilisation
- (d) Control and monitoring of financial resources

- (e) Physical and human resource management**
- (f) Project formulation and implementation**
- (g) Identification of ways and means to raise extra budgetary resources to meet those demands.**

An analysis of the different funding mechanisms is made with a view to propose a model for the funding of higher education in Mauritius in the future.

The research covers all the higher education institutions in Mauritius and also institutions, which have relations with higher and continuing education. These include institutions/ organisations where decisions concerning the higher education sector are made also - (Ministry of Education and Scientific Research, Ministry of Economic Planning and Development, Ministry of Finance, Ministry of Employment, Manpower Resources and Training, the Industrial and Vocational Training Board, and the Technical School Management Trust Fund).

Survey

A survey has been carried out to determine the willingness of Mauritians to pay for higher education. The stratified random sampling technique has been used to gather information for the purpose of the survey. In addition to references to documents published by the different Ministries and educational organisations mentioned above, a questionnaire was designed to obtain both qualitative and quantitative data. Interviews were also carried out to collect data. The Excel and SPSS packages have been used for analysis of data for the survey. Chapter 7 provides further details on the survey.

Interviews

Interviews were also conducted with selected senior officials of the higher education sector. These included officers from the different higher educational institutions, the Ministry of Education and Scientific Research, the Ministry of Economic Planning and Development, the Ministry of Finance, the Ministry of

Employment, Manpower Resources and Training, the Industrial and Vocational Training Board and the Technical School Management Trust Fund. The purpose of the interviews was to have their views on the financial sustainability of the higher education system and also on cost sharing with students in Mauritius. A list of questions asked during the interviews is found in appendix III.

Analysis of Findings and Development of Relevant Models

The findings of the research are evaluated and tested against existing theories and models as indicated earlier and an attempt is made to develop a funding model, which could be applicable for Mauritius, and also other countries with similar problems.

Expected Outcomes of the Research

It is hoped that this research can produce a range of outcomes, which will contribute to a better analysis, understanding and improvement of the funding of higher education in Mauritius.

The empirical findings are used to develop an analytical model of sustainable higher educational expansion; an educational funding model and a formula funding model for Mauritius. It is hoped that these models will be of relevance to other small economies facing similar problems as Mauritius.

Structure of the Thesis

The structure of the thesis is as follows:

- (a) Chapter 1 - Introduction: The importance of education and higher education is highlighted specially in the context of helping Mauritius to overcome the different challenges facing it. The difficulty of financially sustaining an ever expanding higher education system is discussed and hence the need for the study.

The key research questions and the hypotheses are enumerated. The research methods used in the study are also discussed.

- (b) **Chapter 2 - Higher Education in Mauritius:** In this chapter a very brief account of the history of education in Mauritius is given (a more detailed account is given in Appendix 1). An analysis of the present system of education in Mauritius is made followed by an overview of the higher education system in Mauritius. The participation rate in higher education is then explained followed by a brief on the system of financial management in higher education in Mauritius.
- (c) **Chapter 3 - Literature Review:** This chapter provides an overview of the literature in connection with funding of higher education. A brief history of the funding of higher education is provided. A discussion on the need to make those who benefit from higher education share the cost of higher education is made. The different alternative sources of funding of higher education are also discussed. The funding of higher education in Mauritius is also discussed.
- (d) **Chapter 4 - Comparative analysis with selected countries:** In this chapter a comparative analysis of Mauritius with twelve selected countries is made on the basis of selected educational and economic indicators. An account of the different competing funding models prevailing in other countries is also discussed.
- (e) **Chapter 5 - Private participation in the financing of education in Mauritius:** In this chapter the debate on private participation in the financing of education is evoked. The development in private participation in the financing of education is also discussed. Discussion is also made on who should participate in the financing of education and at what level.
- (f) **Chapter 6 - Projected demand, supply and cost of higher education in Mauritius:** In this chapter, a projection of the demand for and of the supply of higher education in Mauritius over the next ten years is made. Based on that projection an estimate of the cost of higher

education up to the year 2010 is then made with a view to see how far the government would be able to financially sustain the sector.

- (g) Chapter 7 - Willingness to contribute to higher education in Mauritius: This chapter presents the results of the survey carried out among students to determine the willingness to pay for higher education in Mauritius.
- (h) Chapter 8 - A funding model for higher education in Mauritius: In this chapter a model for the funding of the higher education system in Mauritius involving all the stakeholders has been worked out. There exists a wide spectrum of funding models that are applied to the higher education sector. These models provide for all the main actors and beneficiaries of higher education in addition to the government, to contribute and share the cost of higher education.
- (i) Chapter 9 - A funding formula for higher education in Mauritius: In this chapter a proposal is made for the use of a grant formula system for allocating government grant to the different higher education institutions in Mauritius. The grant formula system can be used even in situations where the cost of higher education is shared by the government with other stakeholders.
- (j) Chapter 10 - Conclusions: This chapter presents the findings and conclusions of the study.

Summary

Mauritius is a small island state that has made considerable economic progress during the last few decades. It however remains vulnerable to external influences due to the openness of its economy and is being confronted to new challenges arising from changing economic environment, globalisation and international competition. The higher education sector will play a key role in responding more effectively to these challenges in securing Mauritius in future. It will improve its competitive edge, economic growth, employment opportunities, productivity and social cohesion. Demand for higher education will increase. With the present policy of the government to fund almost the

totality of higher education the financial sustainability of the system is threatened.

This research questions the financial sustainability of the policy of the Government of Mauritius of having free higher education. It looks into the financial sustainability of free higher education against a background of ever-rising demand and explores the alternative ways that exist to mobilise additional funds for the higher education sector. It also considers whether the sharing of cost of higher education among all stakeholders is possible in Mauritius.

The study is based on the hypotheses that the policy of the Government of Mauritius to continue to have free higher education is a potential threat to the expansion of higher education in Mauritius; planning, control and monitoring of the use of financial resources in the higher education sector in Mauritius are not as effective as they could be; and that unit cost in the higher education sector in Mauritius is amenable to significant reduction and thereby increased efficiency. The methodology of the research includes a review and analysis of existing practices in the financial management in higher education; an analysis of the different funding mechanisms; a survey and interviews to determine the willingness of Mauritian to pay for higher education. Proposals are made for a new funding system and for a formula for the allocation of government grant to higher education institutions in Mauritius. It is hoped that this research will produce a range of outcomes, which will contribute to a better analysis, understanding and improvement of the funding of higher education in Mauritius.

CHAPTER 2 : HIGHER EDUCATION IN MAURITIUS

The History of Education in Mauritius

The history of education in Mauritius can be traced back to 1767 with the opening of the first school in Port Louis, under French colonial rule. During the period Mauritius was a French colony, 1715 to 1810, education was the exclusive right of a few children. Although some missionaries and private individuals attempted to provide educational opportunities for the less privileged groups, these efforts were very restricted and on many occasions had to be abandoned on financial grounds.

It was not until the 1930s and 1940s under British rule, that one can trace the beginning of a historic movement for mass education in Mauritius. Primary schools were set up for children of free coloured and slaves with the assistance of missionaries and religious bodies like the Roman Catholic Church. But, the provision of education for the masses progressed slowly, strongly influenced by conservative forces aimed at perpetuating an unjust colonial system based on the maintenance of a cheap, ignorant and poor labour force (*S. Bunwaree, 1994*).

With the constitutional reforms of 1948, elections were held on an extended franchise based on a simple literacy test in languages spoken in Mauritius. Government then embarked on a programme of "Education for All", conceived as a sine qua non to bring about greater social, cultural, economic and political equity in the society. The result was a more than double increase in primary school enrolment from 42,340 in 1946 to 85,500 in 1957.

Progress at the secondary level was relatively slower. Although enrolment had increased fivefold during the period 1946 to 1957, in absolute terms the numbers were small, rising from 2,973 to 12,600. About 65 % of the 12,600 secondary school children attended fee-paying private secondary schools in 1957.

Development in higher education was slower. A Teachers' Training School (*Ecole Normale*), was established in 1862. However, this school was abolished in 1876 and no provision for teacher training existed until 1902, when a Training College for Men was established followed by a Women's College a year later. In 1914 a School of Agriculture was established in the Department of Agriculture. This School was renamed College of Agriculture in 1924 and absorbed by the University of Mauritius in 1965. Higher education witnessed major strides after independence with the establishment of three schools at the University of Mauritius in 1968, the Mahatma Gandhi Institute (1970), the Mauritius College of the Air (1971) and the Mauritius Institute of Education (1973). A University of Technology was established in 2000. In addition to the five higher education institutions there are three polytechnics and private institutions operating in Mauritius.

When the country gained independence in March 1968, unemployment was high and school facilities were inadequate. During the 1970s and early 1980s emphasis was on improving physical infrastructure and heavy investments were made by government to improve school facilities. More than 50 % of the current school buildings were constructed during that period. The demand for more education led to strong pressures for more secondary education, and there was a mushrooming of private secondary schools. A significant development in the annals of education in Mauritius was the introduction of free education at the secondary level in 1977 thus extending free education from the primary (which has always been free) to the secondary level. In 1988 fees were abolished at the University of Mauritius thereby extending free education to the higher education sector. (Appendix 1 provides more details on the history of education in Mauritius).

An Analysis of the Present Education System in Mauritius

The government has played a major role in promoting education as part of its socio-economic development strategy. The provision of education in Mauritius is under the responsibility of the Ministry of Education and Scientific Research. The government provides the bulk of primary and

secondary education, and all of higher education and at present education is free from the pre-primary to the higher education levels. The Education Act of 1957 allows private operators to provide education services from pre-primary to vocational and higher levels.

The present education system comprises pre-primary schooling up to the age of five years old, followed by six years of primary schooling, five years of secondary schooling leading to the School Certificate ('O' level) and two years for Higher School Certificate ('A' level). The six years of primary education culminates in the Certificate of Primary Education (CPE) examination, which serves as a selection device for entrance to secondary school.

Pre-primary education: Pre-primary education is provided mainly by private fee paying schools, although government is gradually increasing its presence in this sector by providing pre-primary education in primary schools. There are 1,145 pre-primary schools in the Republic of Mauritius, catering for some 80 to 90 % of children aged 3 to 5 years old. Some 12.2 % of these schools are administered by Parent Teachers' Associations on primary schools' premises and the other 87.8 % are privately-run institutions. Government recently introduced a scheme, which provides a subsidy of Rs 200 per month per student to pre-primary schools that are registered with the Ministry of Education. Government financial inputs towards free Pre-Primary Education for the financial year 1999 were Rs 40.0 million representing 1.5% of the total expenditure on education in that year.

Primary Education: The primary cycle lasts six years, from Standard I to Standard VI, at the end of which the CPE examination is held as a selection device to secondary education. There were 287 primary schools in 1999, comprising 223 government schools, 64 aided schools of which 15 were administered by the Roman Catholic Education Authority and 2 by the Hindu Education Authority. In addition, there were 9 private fee-paying schools. Government schools enrolled 76 % of the pupils, while the aided schools

absorbed the remaining 24 %. Compulsory primary education was introduced in 1992.

Enrolment at the primary level has been universal since the 1960s for both boys and girls, and amounted to 139,489 in 1999 – a gross enrolment rate of 108 % (of the relevant age group 5 to 12 years). Government recurrent expenditure on primary education was about 35.4 % of the total budget for education for the financial year 1999. The average unit cost per student at the primary school level was Rs 800.

Secondary Education: The secondary education cycle lasts seven years. The School Certificate examination takes place at the end of Form V (after 5 years) and the Higher School Certificate examination is at the end of the cycle (2 years after the School Certificate). Secondary education is provided mainly in grammar-type schools, in State schools, in schools run by religious bodies, and other fee paying and non-fee paying private secondary schools. The latter type of schools are fully subsidised by the government. In 1999, there were 34 State secondary schools, and 101 private secondary schools (out of which 18 were run by religious bodies). In addition, there were 4 fee-paying private schools. Secondary school enrolment in 1999 was 99,676. State Schools enrolled 22 % of the overall student population, while the private schools enrolled the remaining 78 %. However, the gross secondary enrolment rate (60 %) is significantly lower compared to newly industrialised countries like Singapore (80 %) and Hong Kong (73 %).

Government recurrent expenditure on secondary education was about 38.4% of the total budget for education in 1999. The cost per student at the secondary level varies between Rs 8000 and Rs 22,000 depending on the school. Government schools tend to have higher costs mainly because of better infrastructure, better qualified teachers and a larger range of subjects offered.

Technical Education: Technical and vocational education and training is provided in Mauritius by the Industrial and Vocational Training Board (IVTB) and the Polytechnics. Technical and vocational education accounted for 1.9%

of government recurrent expenditure on education in 1999. However this figure does not reflect the total expenditure on technical and vocational education. The IVTB collects 1 % of the wage bill of the private sector as a levy, which is used to finance its budget. In addition to the 1 % levy the private sector also spend funds on training of their staff locally and overseas.

Higher Education: Higher education in Mauritius is provided by a range of institutions both from the public and the private sector. Within the public sector, higher education is provided essentially by the University of Mauritius (UOM). Other publicly funded higher educational institutions are the Mauritius Institute of Education (MIE), the Mauritius College of the Air (MCA), the Mahatma Gandhi Institute (MGI), the Mauritius Institute of Health (MIH) and the three Polytechnics. The Tertiary Education Commission (TEC), established in 1988, is a key instrument in planning and coordinating higher education in Mauritius. The IVTB also runs some post secondary courses.

Education at the University of Mauritius became free in December 1976. However, fees were re-introduced in June 1980 to be abolished again in 1988. The decision to abolish fees at the University of Mauritius in 1976 was made in the wake of a political decision of the then government, taken on the eve of the December 1976 general elections, to introduce free secondary education in Mauritius. Fees were reintroduced in 1980 when it was realised that the decision of government was meant only for secondary schooling and that the University was facing financial problems. However in 1988, following students' unrest at the University, fees was abolished again as it was one of the demands of the students. Tuition fees are also non-existent at the other higher educational institutions.

The enrolment in higher education in Mauritius is estimated at 15,317 students out of which some 2,424 attend post-secondary institutions abroad (*Participation in Tertiary Education, Tertiary Education Commission, 2000*). This is mainly because they cannot find places in local institutions. The total expenditure for higher education abroad for Mauritian students is estimated to

be US \$ 7.5 million per annum (*Biennial Report on Tertiary Education, Tertiary Education Commission, 1997-1998*). The economic return on the use of public funds (in the form of scholarships and tax rebates which are public revenue foregone) for students studying overseas is low, since many of them do not come back and thus are losses to the Mauritian economy. As a result there is a low social rate of return, but a high private rate of return to public investments in higher education.

The Flow of Students in the Mauritian Education System

The education system in Mauritius can be divided into three main distinct parts, namely, primary, secondary and higher. On the basis of the educational statistics available at the MoESR, it is observed that out of the 24,424 students enrolled in the first year of the primary cycle in 1986, only 1955 (8.0%) went on to higher education in 1999.

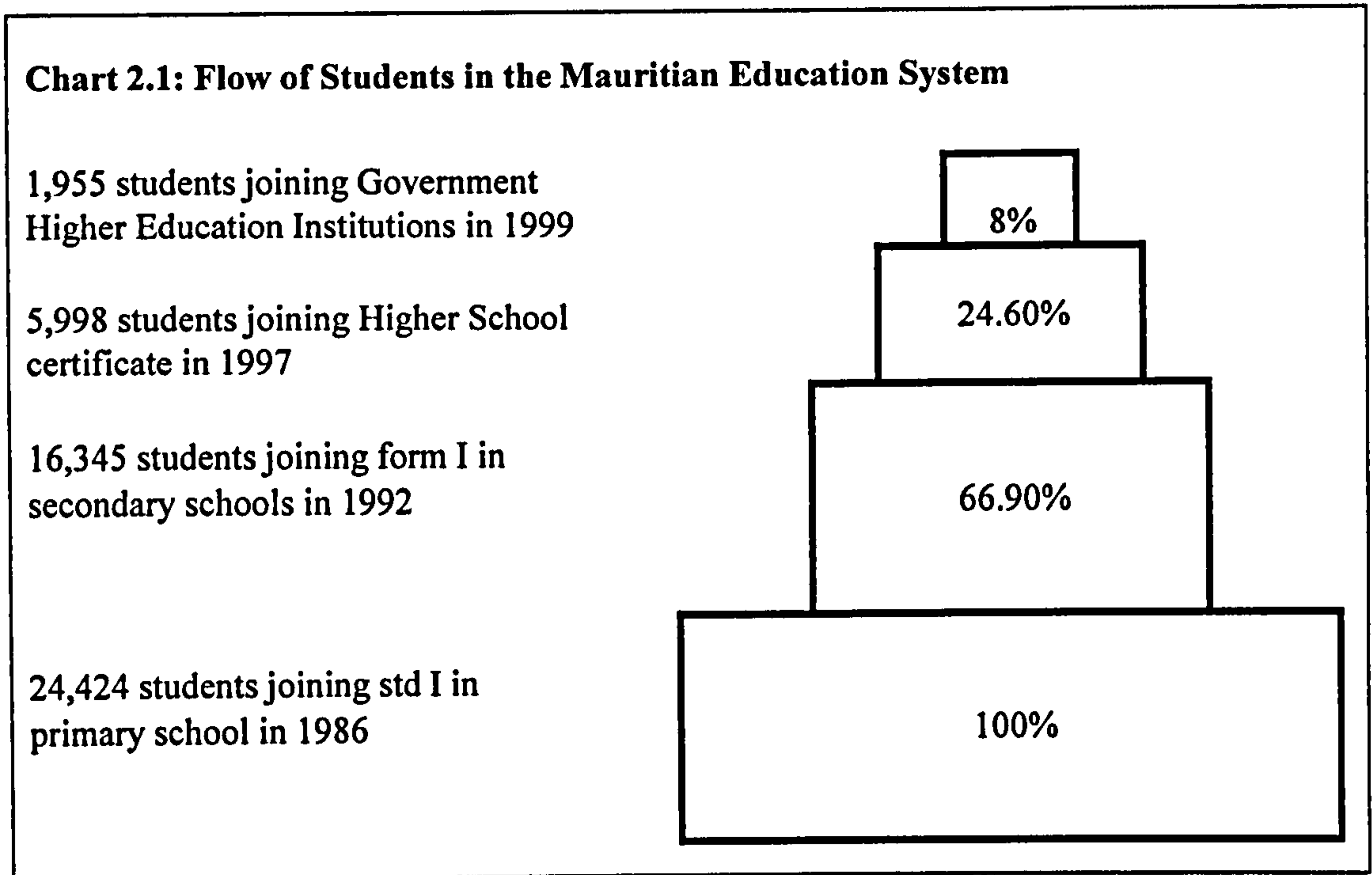
The following Table shows the flow of the 1986 primary cohort in the Mauritian system:

Table 2.1: Flow of Students in the Mauritian Education System			
YEAR	LEVEL	ENROLMENT	PERCENTAGE
1986	Joined Standard I primary School ⁽¹⁾	24424	100%
1992	Joined Form I Secondary School ⁽¹⁾	16345	66.9%
1997	Joined Form VI, Higher School Certificate ⁽¹⁾	5998	24.6%
1999	Enrolled in Government Higher Educational Institutions ⁽²⁾	1955	8.0%

(1) *Educational statistics, MoESR*

(2) *Participation in Tertiary Education, Tertiary Education Commission, 1999 – adjusted to include only new admission from secondary schools*

The above is shown in the following Chart:



The Higher Education System in Mauritius – An Overview

In Mauritius, higher education basically means post secondary education and is offered by both private and public institutions.

The publicly funded institutions comprise four Higher Education Institutions that operate under the purview of the Tertiary Education Commission (TEC), three polytechnics, which are managed by the Technical School Management Trust Fund (TSMTF), the Industrial and Vocational Training Board (IVTB) and the Mauritius Institute of Health (MIH).

In addition to the above publicly funded institutions, there are a number of private institutions that run higher education level courses. Almost all these private institutions run courses in collaboration with overseas institutions. There is also a significant number of Mauritians who go overseas or resort exclusively to the distance mode for pursuing higher education level studies.

In addition to the above, new developments taking place in the higher education sector are:

- (a) The recent setting up of two higher education institutions with a regional vocation namely, the University of the Indian Ocean (UIO) and the 'Institut Francophone d'Entrepreneuriat' (IFE);
- (b) The setting up of the SSR Medical School; and
- (c) The creation of the University of Technology, Mauritius.

Participation in Higher Education

Some 15,317 Mauritians were undertaking higher education level studies as at December 1999 (*Participation in Tertiary Education – Tertiary Education Commission, 2000*).

Table 2.2 below shows the enrolment of students by publicly and privately funded institutions. The higher education enrolment rate, calculated as a percentage of the population aged 19 to 24 years, was 12% in 1999. More than 84% of students were undertaking their studies locally out of which 64% were in publicly funded institutions.

The percentage of students following higher education courses in publicly funded institutions was 54% of the overall participation in higher education. Presently, all the four higher education institutions taken together, account for 47% of the higher education student population of 7,138 students.

Table 2.2: The Enrolment in Higher Education in 1998 and 1999		
	Total Enrolment	
	1998	1999
Publicly-Funded Institution		
Tertiary Education Institutions		
University of Mauritius	3,739	4,266
Mauritius Institute of Education	2,610	2,309
Mahatma Gandhi Institute **	1,056	436
Mauritius College of the Air	-	127
Polytechnics		
Sir Guy Forget	394	366
Swami Dayanand	286	415
Institut Supérieur de Technologie	59	119
Other		
Industrial Vocational & Training Board	108	166
Mauritius Institute of Health	5	39
Sub-Total	8,257	8,243
Private Institutions and Distance Education	3500	4650
Overseas	1916	2424
Sub-Total	5,416	7,074
Grand-Total	13,673	15,317

(Source: Participation in Tertiary Education - TEC 2000).

*** The decrease from 1,056 to 436 in the enrolment of the MGI is due to the fact that the programme for training of teachers in oriental languages through Distance Education at the MGI was completed in 1998).*

The three polytechnics, the Lycée Polytechnique Sir Guy Forget, the Swami Dayanand Institute of Management and the Institut Supérieur de Technologie,

account for 6% of the student population. The other publicly funded institutions namely the IVTB and the MIH account for only 1% of the student population.

It may be useful to note that there are no major barriers to access to higher education in Mauritius on grounds of religious and/or racial discrimination. However because admissions to the publicly funded higher education institutions are made on the basis of performance at the Higher School Certificate there are reasons to believe that higher education is more accessible to the rich. This has been revealed by the survey results discussed in Chapter 7. Students from the low-income brackets, which constitute a majority of the Mauritians of African descendants, may not have as good results at the Higher School Certificate and hence may have difficulty accessing higher education. There is no doubt that these potential candidates for higher education, suffer to varying degrees of many aspects of social exclusion. This is something that clearly needs further attention.

The University of Mauritius

Established in 1965, the University of Mauritius, formerly known as the College of Agriculture, dominates the higher education sector locally. Originally it started with only three schools, namely Agriculture, Administration and Industrial Technology. Today, the University of Mauritius has expanded, comprising of five faculties, namely Agriculture, Engineering, Law and Management, Science and Social Studies & Humanities. It also comprises of a Centre for Medical Research and Studies, a Centre for Distance Learning, a Centre for Information Technology and Systems, and a Consultancy Centre. In 1999, the University has a student population of 4,748 (4266 enrolled at the UoM and 482 enrolled at the MIE and the MGI on joint courses).

The Mauritius Institute of Education

Founded in 1973, the Mauritius Institute of Education (MIE) was initially responsible for teacher education, curriculum research and development and reform of the national examinations system. Over time, the National Curriculum Centre for Research and Development along with the Mauritius Examinations Syndicate (MES) has taken over the role of curriculum development and the examinations respectively from the MIE.

The MIE is predominantly involved in teacher education and comprises four schools, namely Applied Science, Education, Science & Maths, and Arts & Humanities. The main objective of the MIE is to improve the quality, competence and qualifications of the teaching force spanning the education system from pre-primary and primary to the secondary level. The total enrolment at the MIE amounted to 2,309 in 1999. Some 176 students were following the B.Ed course run jointly with the University of Mauritius.

The Mahatma Gandhi Institute

The Mahatma Gandhi Institute (MGI) was established in 1970 as a joint Government of Mauritius - Government of India venture for the promotion of education and culture in general with emphasis on Indian culture and traditions. Today, it has responsibilities, within the higher education set-up, for running courses in such areas as Indian Studies, Performing Arts, Fine Arts, Chinese and Mauritian Studies. The MGI comprises four main schools, namely Indian Music and Dance, Fine Arts, Indian Studies and Mauritian, African & Asian Studies. The MGI had a student population of 436 at the higher education level in 1999.

The Mauritius College of the Air

The Mauritius College of the Air (MCA) was established in 1971 to promote education, arts and science and culture generally through mass media. In 1985, the Statute of MCA was re-enacted to maintain distance education as the major strategy to meet its objectives. In 1986, the MCA merged with the

Audio-Visual Centre of the Ministry of Education and Science and until recently it has been catering mainly for the primary and secondary education sector through the production of education programmes for broadcast on radio and television.

The MCA has also been producing educational materials for non-formal or continuing education, for non-broadcast use. The MCA had a student population of 127 in 1999 undertaking higher education courses run jointly with overseas institutions.

The Tertiary Education Commission

Overseeing the four above named higher education institutions is the Tertiary Education Commission (TEC), which was set up in 1988. The responsibilities of the Commission are, inter alia:

- (a) To foster the development of post-secondary education and training facilities;
- (b) To provide guidelines to the higher education institutions for preparing annual and long term plans for the operation and development of post-secondary education and training;
- (c) To make recommendations to the Minister of Education and Scientific Research on the development of higher education in Mauritius;
- (d) To advise the Minister on policy matters relating to the award of scholarships;
- (e) To promote co-ordination among the higher education institutions in respect of (i) the use of physical infrastructure and other material resources, (ii) the optimum use of manpower, (iii) the organisation of higher education programmes, and (iv) the planning and implementation of research; and
- (f) To receive funds from government and allocate to the higher education institutions in the light of their annual and long term programmes.

The Polytechnics

Initially, there existed only one polytechnic in the country and the programmes offered were primarily vocational in nature. However, with the creation of two additional polytechnics the emphasis has changed.

Presently, the Sir Guy Forget Polytechnic is offering courses at Technician level (Brévet de Technicien) and the Swami Dayanand Institute of Management is running diploma courses in Information Technology, Business Administration and Informatics. The Institut Supérieur de Technologie offers diploma level programmes in Electro-Technics, Machatronics and Civil Engineering. The total enrolment of the three polytechnics was 900 in 1999.

The Technical School Management Trust Fund (TSMTF)

The TSMTF was created in 1990 to manage the above three polytechnics. It is administered by a Board. Industry Advisory Committees are appointed in respect of each course that is being run. Each Committee comprises representatives of both the public and private sectors. These committees have responsibilities for: establishing course objectives, curriculum content and delivery modes; establishing terminal standards and certification; prescribing training equipment, hardware and software; prescribing training facilities and environment; advising on industrial training attachments; reviewing course results and diploma holders' employment performance; monitoring and reviewing market demand; and for reviewing and upgrading courses.

The Industrial and Vocational Training Board (IVTB)

Most of the courses that are being run at the Industrial and Vocational Training Board (IVTB) are of a vocational nature leading to the National Trade Certificates (levels 3 and 2). The government sponsors these courses under the aegis of the IVTB which organises its own training and also supervises those provided by the private sector. As from 1998, the IVTB has started running selected higher education level courses at the Higher National Diploma level.

The Private Institutions and Distance Education

There are more than 30 private institutions operating in the higher education sector in Mauritius (*Survey on Private Provision of Post- Secondary Education in Mauritius, Tertiary Education Commission, 2000*). These institutions offer principally 'niche' courses in such disciplines as Management, Accountancy and Information Technology and are mostly affiliated with overseas institutions. They encompass both distance learning and face-to-face tutorials.

A majority of the examinations are conducted by the MES although a few of these are organised and invigilated by the overseas institutions themselves in collaboration with the local partner organisation. In 1999, there were 4,650 students embarked in higher education, either through distance education or face-to-face tutorials.

The University of the Indian Ocean (UIO)

The University of the Indian Ocean was established in 1998 under the aegis of the Indian Ocean Commission. It is essentially a network of higher education and research institutions of the five member states of the Indian Ocean Commission: Comores, Madagascar, Mauritius, Reunion Island and Seychelles. Its main secretariat is based in Reunion Island and offers higher education level programmes to students of five member countries. Till now, the UIO has run two courses in Mauritius namely, Waste Water Management and Master of Business Administration (Bilingual).

The University of Technology, Mauritius

A new institution, The University of Technology, Mauritius, was created in June 2000.

The objects and functions of the University are:

- (a) Provide multi-level tertiary education including continuing professional education.
- (b) Foster and encourage the advancement and development of knowledge and skills.
- (c) Provide research, development, consultancy and other services for industrial or commercial organisations, public bodies or individuals.
- (d) Exploit commercially for its benefit the services and resources of the University of Technology.
- (e) Serve as a centre for fostering co-operation, partnership and exchange of ideas between the academic community on the one hand and the public and private sectors on the other.
- (f) Promote entrepreneurship among its students.
- (g) Give a regional and international dimension to its teaching, research, consultancy, development, service and other activities and
- (h) Develop into an institution of excellence in teaching, training, scholarship, research, consultancy, service and other services and products, with emphasis in its areas of operation.

The mission of this new institution is to train leaders, professionals, technologists and entrepreneurs for the Republic of Mauritius in order to meet the manpower needs for the social, economic and technological development that will sustain growth and competitiveness of the country. As the name suggests, it is technology based and hence programmes offered are in the fields of information technology, engineering and sustainable development sciences. In fact the University of Technology, Mauritius is complementary to the University on Mauritius except that it does not offer programmes in the fields of humanities and the arts.

The Funding of Higher Education in Mauritius

In Mauritius, almost the totality of the funding required for higher education comes from the government. Funding of the higher education institutions are managed by the TEC while that of the Polytechnics by TSMTF. Although

IVTB and MIH are called publicly funded institutions, their funds do not come directly from the Ministry of Education. In fact, IVTB receives most of its funding from the private sector in the form of a levy. Whereas, all expenses of the MIH are borne by the Ministry of Health and are treated as training and upgrading of staff.

The budgetary allocation, for the higher education institutions, is provided by the Ministry of Finance in the form of a one-line-item to TEC and TSMTF. The funds received are allocated to the institutions on the basis of their budgetary submissions.

Consultations are carried out with the institutions and where necessary they are asked to modify their budgetary proposals. The separate budgets are then consolidated with that of TEC and TSMTF to form the budget for the higher education sector.

The current system is based on incremental budgeting, each year's outcome being the result of negotiations about the size of the increment on the previous years' budget. This has several disadvantages that include the lack of direct connections with overall levels of activities and the presumption that historic patterns of allocation would be maintained.

The sources of funding of the higher education institutions are shown in Table 2.2 below. Nearly 90% of the funds of the higher education institutions come from the government as grant. Out of the remaining 10% income, about 6% relates to non-tuition fees charged to students. The other 4% represents income generated internally by the higher education institutions.

Table 2.3: Sources of Income of the Higher Education Institutions

YEAR	TEC		UOM		MIE		MGI		MCA		TOTAL	
	*Rec. Grant from Govt. Rs'M	% of Total Rec. Income	Rec. Grant from Govt. Rs'M	% of Total Rec. Income	Rec. Grant from Govt. Rs'M	% of Total Rec. Income	Rec. Grant from Govt. Rs'M	% of Total Rec. Income	Rec. Grant from Govt. Rs'M	% of Total Rec. Income	Rec. Grant from Govt. Rs'M	% of Total Rec. Income
1994/95	15.3	97.0	106.9	84.4	57.6	95.3	76.7	96.8	24.3	90.1	280.8	90.8
1995/96	25.4	96.8	112.0	79.6	56.2	94.8	80.3	96.6	29.5	91.4	303.4	88.8
1996/97	25.9	95.3	130.5	84.3	61.1	94.4	80.4	91.9	32.5	91.6	330.4	89.3
1997/98	24.1	95.7	153.7	83.8	67.0	93.2	90.0	91.9	35.0	91.2	369.8	88.8
1998/99	26.9	91.2	187.0	83.7	77.1	93.6	98.5	89.8	44.8	92.6	434.3	89.7
1999/00	14.1	79.6	190.4	79.4	73.6	89.3	101.7	89.4	43.5	91.9	423.3	84.4
2000/01	22.5	84.9	212.6	76.1	82.3	91.4	114.2	92.1	55.7	88.8	487.3	83.6

Source: Financial Statements of Higher Education Institutions.

Note: * Rec: Recurrent

Financial Management in Higher Education Institutions in Mauritius

It is over a decade now that the Report of the Visitor to the University of Mauritius (*Manraj, 1987*) stressed the need for planning and monitoring the development of post secondary education in conformity with the country's social and economic needs and to promote the most effective use of resources in the sector.

Before the Visitor's Report of 1987, the report of the Study Panel on Tertiary Education (*Glover, 1985*) had also recommended that:

- (a) The allocation of funds to tertiary education be made on the basis of an assessment of objectives and priorities rather than on an ad-hoc basis;
- (b) Duplication be reduced and waste be eliminated through proper financial management within the tertiary sector;
- (c) The purchase and management of physical assets be better controlled; and
- (d) Administrative and other functions should be carried out with economies of scale in view.

As public funds are mostly used to finance higher education there is need for accountability and transparency. Government policies and regulations, which are quite rigid, influence financial management and tend to limit the autonomy of higher educational institutions. Demands of higher education institutions are inflated with a view to obtaining more funds from the government so as to overcome the limitations imposed by these policies/rules and regulations. Very often such demands are made without proper analysis of costs and benefits. The line item budget prevails and there is no system of formula funding for higher education. There is a system of negotiated funding, which is not always based on specific criteria but rather on last year's budget. The result is that higher education tends to be expensive and inefficient. This can be explained by the principal-

agent theory (*Douma and Schreuder, 1991 and Breton, 1995*). In its most general form an agent is contracted by a principal to undertake certain tasks. A common assumption in the literature is that principals are risk-neutral, while agents are risk-averse. Risk neutrality does not seem too unreasonable an assumption, if the principal is in fact a senior decision-maker in a large organisation - particularly if it is a government organisation, representing the interests of taxpayers as a whole. Top management in government would not like to take risks of running out of funds during the financial year and hence would resort to padding in their budgetary proposals.

It is important therefore, that the system of funding of higher education and the mechanism of allocation of government grant to higher education institutions be reviewed. The next chapter provides an overview of funding scenarios which are in place in different countries and which can be used in devising an appropriate funding system for higher education in Mauritius.

Summary

During the period Mauritius was a French colony, 1715 to 1810, education was the exclusive right of a few children. It was not until the 1930s and 1940s under the British rule, that one can trace the beginning of historic movement for mass education in Mauritius. With the constitutional reforms of 1948, government embarked on a programme of "Education for All", conceived as a sine qua non to bring about greater social, cultural, economic and political equity in the society. When the country gained independence in March 1968, unemployment was high and school facilities were inadequate. Education became increasingly an affair of the state and heavy investment was made to improve school facilities.

Higher education in Mauritius was limited to provision of training of teachers at the *Ecole Normale*, (Teachers' Training School), established in Port Louis in 1862. However, this school was abolished in 1876 and no provision for teacher

training existed until 1902, when a Training College for Men was established followed by a Women's College a year later. In 1914 a School of Agriculture was established in the Department of Agriculture. This School was renamed College of Agriculture in 1924 and absorbed by the University of Mauritius in 1965. In fact, it was not until the 1960s and 1970s that the higher education sector started to develop in Mauritius, with the founding of the University of Mauritius, the Mauritius Institute of Education, which took over the training of teachers, and the Mahatma Gandhi Institute.

The present education system comprises pre-primary schooling up to the age of five, followed by six years of primary schooling, five years of secondary schooling leading to the School Certificate ('O' level) and two more years leading to the Higher School Certificate ('A' level), and technical and vocational and higher education. Following a cohort of 24,424 students enrolled in the first year of the primary cycle in 1986, it was observed that only 1955 (8.0%) went for higher education in 1999.

Some 15,317 Mauritian were undertaking higher education level studies in December 1999. This represented 12% of the population aged 19 to 24 years. More than 84% of the students were undertaking their studies locally out of which 64% were in publicly funded institutions with the remaining 36% enrolled in some 30 private institutions.

In Mauritius, almost the totality (90%) of the funding required for higher education comes from the government. Out of the remaining 10%, about 6% relates to non-tuition charges to students (such as application fees, registration fees, examination and library fees) and 4% represents income generated internally by the institutions.

As public funds are mostly used to finance higher education there is need for a more effective and efficient financial management and for accountability and

transparency. Government policies and regulations influence financial management and tend to limit the autonomy of higher educational institutions. Demands of higher education institutions are inflated with a view to obtaining more funds from the government so as to overcome the limitations imposed by those policies/rules and regulations. The result is that higher education tends to be expensive and inefficient.

CHAPTER 3: LITERATURE REVIEW: AN OVERVIEW OF FUNDING SCENARIOS.

Introduction

The world economy is changing as knowledge supplants physical capital as the source of present (and future) wealth. Technology is driving much of this process, with information technology, biotechnology, and other innovations leading to remarkable changes in the way we live and work. As knowledge becomes more important, so does higher education. Countries need to educate more of their young people to a higher standard. A degree is now a basic qualification for many skilled jobs. The quality of knowledge generated within higher education institutions, and its availability to the wider economy, is becoming increasingly critical to national competitiveness. (*World Bank, 2000*)

The relative balance of power of the last fifty years has given way to a world political context, which is more complex and less certain. Globalisation is revolutionising existing edifices of wealth, skills, technology and production. Within these global transformations, nations and association of nations are arming themselves with the knowledge, skills, and intellectual capacity to meet the challenges of accelerated change and uncertainty (*The Australian Vice Chancellors' Committee Submission to the Review of Higher education Financing and Policy, 1997*). So as to sustain their competitive edge against the backdrop of growing challenges, countries will require highly qualified manpower, and imperatively, easier and increased access to life-long learning in terms of advanced knowledge and better skills. Nations are actually positioning themselves to take on the threats posed by the new millennium and are investing huge sums to secure their future. National plans such as the *Singapore Unlimited*, *Malaysia Vision 2020*, *Mauritius Vision 2020: The Long Term National Perspective Strategy*, and the national strategy documents of Korea, Hong Kong,

and Thailand highlight the urgency of increasing investment in higher education as the backbone of economic growth (*The Australian Vice Chancellors' Committee Submission to the Review of Higher education Financing and Policy, op. cit*). It is thus obvious that higher education institutions worldwide will see their roles enhanced in shaping economic, social, and cultural structures.

Investment in higher education will need to be increased to fulfil the requirements of a knowledge-based society. In the absence of adequate financing, students may be “fenced off” by restricted choices or may even encounter unmet demand. Wavering government support could edge higher education institutions towards a critical quality threshold. A vicious circle of poor quality and declining enrolment rates giving rise to low skill levels that would jeopardise the economy’s capacity to generate wealth could be eventually formed. There is therefore an urgent need to revisit the actual financing system in view of emerging mass higher education. There is need also to look into the extent to which each stakeholder might contribute to the cost of higher education so that a balance is struck between the various sources of funding.

Who Benefits from Higher Education?

There is need to improve the quality of and access to higher education. This is not an easy task as resources available are limited. Hence the fundamental issue about “who must pay” is at the heart of the debate on the future of higher education across the world. The four principal beneficiaries of higher education are:

- (a) The students
- (b) The state (society)
- (c) The employers
- (d) The institutions

Students (graduates) derive a return from higher studies. They are the direct beneficiaries of any type of education. A degree is a passport to more rewarding

jobs and a higher standard of living and hence there is a strong case for all students to make greater personal investments towards post secondary education. Moreover, graduates do not consume more of public services other than education than non-graduates; there is a very large fiscal surplus arising from higher education. That surplus which is out of proportion to the number of graduates in the tax paying population is available for financing government expenditure in general (*Curtin, 1996*). More and more developing nations have been shifting costs from the tax payer to parents and students in the form of fees - a tradition that has been in place for decades in several industrialised and OECD countries (*Wagner, 1998*).

The state also benefits tremendously from a good system of higher education as it leads to social and economic development. One of the major obligations of the state throughout the world is to provide quality education to their populations. The benefits, which accrue to the government and hence all stakeholders are multiple and include:

- (a) A more productive workforce
- (b) A higher income earning workforce
- (c) A better educated population
- (d) A more informed voting base
- (e) Better social skills
- (f) Political stability
- (g) Social stability
- (h) Reduced crime

Employers are directly concerned with the quality of output (graduates) delivered by higher education institutions which will be their long-term lucrative assets. Their contributions to higher education via different means are fully justified especially since their profits are closely linked to the expertise of their manpower.

Higher education institutions can work towards increasing their private income and hence generate funds to finance their activities. Beyond their core business of teaching and research, higher education institutions should seek to adopt an entrepreneurial approach. They can increase their productive gains by making optimum use of facilities, restructuring, changed methods of delivery and greater collaboration. The entrepreneurial response offers a formula for institutional development that puts autonomy on a self defined basis; diversified income to increase financial resources, provide discretionary money, and reduce governmental dependency; develop new units outside traditional departments to introduce new environmental relationships and new modes of thought and training; convince heartland departments that they too can look out for themselves, raise money, actively choose among sustainable specialities and otherwise take on an entrepreneurial outlook; evolve a set of overarching beliefs that guide and rationalise the structural changes that provide a stronger response capability; and build a central steering capacity to make large choices that help focus the institutions (*Clark, 1998*)

Funding Higher Education: An Overview

Before the existence of the modern university, which appeared in Europe in the eleventh century, higher-level instruction invariably took the form of students hiring teachers. In India, for example, students would attend the homes of Brahmin scholars who were hired and paid on the basis of their academic and moral reputation (*Albrecht and Zideman, 1992*).

In most countries, higher education trained elite administrators and religious figures. In China, private schools developed to train people to become scholar administrators. In Ancient Greece, students paid itinerant scholars for moral and scientific training that was intended to prepare them to participate in public political life of the polis, as well as to help them to enlarge their private fortunes. In the Islamic World, students could hire teachers inside mosques for religious

instruction: to this day, the Al-Azhar University has preserved the tradition of students hiring scholars in the central mosque.

A significant innovation in higher education came about during the Roman Empire. While the emperors showed no interest in supporting primary or secondary education, they did begin to provide financial aid to higher education and to provide endowments for particular chairs. A principal motivation for this support was to provide a well-trained elite that could assist in managing the Empire. The Renaissance period in Europe witnessed a flourishing of higher education institutions, financed mostly by students and the Catholic Church.

The first instances of largely state supported universities were in Germany and France at the beginning of the nineteenth century. State intervention had a clear rationale; to provide necessary technical manpower for the state to foster industrial development.

The universities essentially became employer-based training facilities, with the government as the primary employer meeting the educational costs. In the twentieth century, these systems expanded rapidly throughout the world, particularly as more countries sought to industrialise. The pattern of publicly supported institutions to provide administrative and technical manpower was exported to many developing countries that were colonies of European powers. The universities initially trained the "colonials" living in the country for the civil service (a less expensive option than educating them at home) as well as a selected few from the indigenous populations who could assist in staffing local governments. When these countries achieved independence, the structure for the university systems was already in place and most governments chose to expand these institutions rapidly, to replace the manpower void created by colonial withdrawal.

Higher education history reveals three important points in relation to its funding. First it shows to the extent, until the early nineteenth century, to which higher education funding has been dependent on student and not government funding; higher education institutions were consumer demand-driven institutions. Second, as a consequence of this funding relationship, as well as the small size of higher education in general, institutions were much more responsive to student demands. Third, the rationale for massive state intervention in the provision and funding of higher education was the training of individuals for administrative and technical careers in the civil service, a form of employer-based training. Subsequent industrialisation and on going technical advance defined new and broader roles for higher education in both basic research and in the preparation of professional and technical personnel for the growing private sectors of the economy (*Albrecht and Zideman, 1992*). State funding, therefore is becoming increasingly less relevant to larger higher education systems and economies that are developing private sectors.

Almost universally, government financial support of HEI's is effected by the direct transfer of funds from government to those institutions, or through an intermediary grant institution (buffer organisations).

Today in most countries, governments are the dominant source of higher education finance. The mechanisms through which governments transfer funds to higher education institutions have an effect on the way in which these funds are utilised. Too often government's concern is with the political acceptability of allocation or with the horizontal equity amongst higher education institutions and the regions and populations they serve. But such funding allocations often fail to provide incentives for institutions to operate efficiently and indeed, may create a general climate that is not conducive to efficiency (*Albrecht and Zideman, 1992*). It is therefore appropriate to examine the mechanisms through which governments allocate resources to higher education, particularly in developing countries, in

order to establish more effective means to transfer these subsidies to higher education institutions.

Gareth Williams (1990) has pointed to two very different approaches to the role of higher education institutions: universities may be regarded as "service " institutions that can be relied upon to serve the wider interests of society and the economy, or they can be seen as "commercial enterprises" that provide services for the benefit of individuals. The former view underlies much of the higher education expansion in Europe and in many developing countries in recent decades, and justifies the heavy subsidisation of a largely autonomous higher education sector. But the universities' responses and the wider needs of society, as perceived by governments, have not always coincided. In most countries this dissonance, buttressed by increasing pressures on public sector budgets, has led the government, as paymaster, to seek ways of exerting greater control over the higher education sector.

The second view of *Williams*, which sees HEIs operating in the context of a producer-consumer relationship with students, receives support from the new human capital view of education and provides much of the rationale for moves towards increased cost recovery and tuition fee payment in higher education systems. There are three main benefits from such an approach: HEIs respond to student demand (reflecting relative earnings and shortages in the labour market); resources are generated for the system as students pay for their higher education (and therefore put more value on their education); and HEIs are forced to compete for students (in terms of price, quality of education and subsequent marketability of skills provided). This view of higher education bears a strong resemblance to the traditional institution context, prior to the nineteenth century. It is argued that this will achieve internal efficiency and societal relevance of the higher education system more successfully than does direct government support.

However, a market oriented, student demand driven system (with extensive cost-recovery) may not be practicable in many country settings, especially where

labour markets are highly distorted. Nevertheless, in principle, it might be possible to achieve many of the benefits of such a student-responsive system, without moving strongly towards fee payment and cost recovery. Subsidies may be maintained at given (or other suitable) levels, but channelled through the students, in terms of vouchers or subsidized loans, thus facilitating student choices, stimulating competition amongst higher education institutions and making them more responsive to the needs of the labour market.

Although much is made of the virtues of university autonomy and academic freedom, it is generally the case that higher education institutions must function within an environment that is very much subject to government regulation and control. These restrictions not only influence the incentive structure and institutional behaviour of higher education institutions but also influence the efficacy of the mechanisms of funding allocation.

The most far reaching of these is the extent of government control over student enrolment. Not only are heavy burdens placed on the higher education system by government-instituted automatic admissions policies (to meet surging demand for higher education), but also restrictions may be placed on the types of courses (by level and field) that institutions may offer. Governments can raise the overall expenditure needs of institutions by forcing them to adopt relatively open admissions policies or to take students into high cost fields.

Moreover, governments may impose high financial dependency on HEIs (by forbidding revenue diversification). The higher the dependency, the greater the likelihood of fluctuations in funding and the more magnified is other forms of control. That is, government policy may require open admissions while at the same time failing to allow institutions to seek outside funding.

Furthermore, governments may impose restrictions on the extent that institutions are able to allocate their funding as they see fit. Such government restrictions on expenditures vary widely amongst different systems, though most governments impose controls on academic salaries and staffing patterns.

Buffer Organisations

Traditionally, government subsidies have been channelled to higher education institutions directly from Ministries of Education or Finance, or from Ministries of Higher Education (as is common in some African countries). However, some governments have tried to secure the independence of these institutions from direct political interventions by establishing intermediate funding agencies. These "buffer" bodies lie between a government and the higher education institutions, with the aim of insulating higher education institutions from direct government intervention (*Salmi, 1991*).

The classic model for a buffer organisation for higher education is the United Kingdom's recently defunct, University Grants Committee (UGC). The UGC was established in 1919 as a non-statutory body to advise the government on the financial needs of the universities, and to allocate public grants to them. Similar institutions exist in many British Commonwealth countries, including Nigeria, Kenya, Pakistan, India, Hong Kong, New Zealand and Zimbabwe as well as various other countries such as Israel and Sudan (*Sharma and Sanyal*). The Tertiary Education Commission in Mauritius also acts as a buffer organisation for the higher education institutions in Mauritius.

Funding Mechanisms

Since the early 1990s higher education funding and management, all across the world has witnessed radical transformation. Improving access to higher education would require funding scenarios to operate along the principles of equity, development, democracy, efficiency, effectiveness, and financial sustainability and shared costs.

Higher education funding mechanisms shows a wide spectrum of systems. In Europe, where most HEIs are public, the institutional cost of instruction is mainly incurred by the state. Students' contributions to tuition are negligible however they are responsible for their living expenses. In Asian countries such as Japan, Korea, Taiwan, and the Philippines, a major share of the student population attends private institutions. As a result, they pay for the full cost of higher education. Countries like the United States, where there is a mix of public and private institutions, are situated at the middle of the spectrum. Most African countries portray a different picture altogether. They do not only provide free institutions but also free boarding on campus (e.g. Swaziland).

Higher education is increasingly regarded as a 'private good', and hence full public funding is no longer the norm. Higher education exhibits conditions of limited supply, excludability and rivalry, which bring it closer to a private good. The buyer (student) is gradually being called upon to pay for higher education.

The different higher education funding mechanisms are discussed under the following headings:

1. GOVERNMENT:

(I) Input funding

- A. Line item budgeting**
- B. Programme budgeting**
- C. Formula budgeting**

(II).Output funding

- A. Performance funding**
- B. Performance budgeting**
- C. Contractual funding**
- D. Strategic plan funding**

(III) Negotiated funding

- A. Incremental budgeting**

B. Adhoc negotiations

C. Fixed revenue agreements

(IV) Earmarked funding

(V) Market based funding

(VI) Base plus mechanism

(VII) Strategic funding

A. Block grants with guide lines

B. Initiative funding

C. Incentive funding

(VIII) Public subsidies to households

A. Voucher system

B. Maintenance grants to students

C. Loan schemes

2. STUDENTS

(I) Tuition fees

(II) Graduate tax system

3. EMPLOYERS

4. INSTITUTIONS

5. NON-TRADITIONAL SOURCES OF REVENUE

(I) Alumni support

(II) Philanthropy

Government Funding Mechanisms

The allocation of core funding from government to HEIs tends, in practice, to be based mainly on one of three general criteria (or a combination of these). These are:

(a) Input funding

(b) Output funding

(c) Negotiated funding

Input funding

Funds can be allocated by the government to higher education institutions according to the cost of higher education - the input method. The most popular method employs formulas, usually based on multiplying enrolments by parameters of unit cost (the "unit resource"). Such a system may fail to offer correct incentives to HEIs to act efficiently (to avoid lowering entry standards and repeats, for example), unless it is carefully designed. In an input-based system funds provided are directly proportional to the cost of educational inputs for instance, staff salaries, equipment, consumable items, and buildings, amongst others. This cost-based mechanism is found in most industrialised economies and a few developing nations: Asia and Africa (*Albrecht and Ziderman, 1992*). The institutions are required to spend the funds on the inputs for which they have been provided. Input funding comes in various forms. The main types are:

- (a) Line item budgeting—breaking of costs in terms of expenditures;
- (b) Programme budgeting—disaggregating budgets for cost centres; and
- (c) Formula budgeting—disaggregating cost by activities.

Line Item Budgeting

Under this system higher education institutions submit budget estimates for the forthcoming year to the parent ministry where the expenditures are categorised on a line item basis. Each expenditure category is shown on a separate line. After approval the state disburses funds that are sub-divided into expenditure categories to the institutions. These funds are specific sums attached to each category of expenditure. The institutions are confined to spend the received funds within those line items only. The underlined categories can be broadly referred to as the

input factors of higher education, the organisational sub-units of an institution and the personnel expenditure, which relate to the number of posts to be filled.

The line item funding system is still predominating in some Continental European countries and in most Eastern European countries. In the Arab countries this system of budgeting for HEIs, with reimbursement of actual costs, remains the standard procedure between the State and higher education institutions. This bureaucratic approach to budgeting is however becoming less popular with institutional autonomy being more widely recognised.

Programme Budgeting

Programme budgeting attempts to link budgets to plans and to quantify expected outcomes. Under this system sums of money are assigned to activities/programmes rather than to categories of expenditure (such as salaries, transport and other expenses) of the activities/programmes. As opposed to the line item budgeting, the programme budgeting grants institutions with greater autonomy, which is translated into more flexibility in apportioning their own budgets.

Formula Budgeting

Formula funding was developed in the United States (concurrently in California, Indiana, Oklahoma and Texas) after World War II, and flourished in the 1960's as a result of booming enrolment. Formula funding was instituted to determine more accurately an adequate level of funding for post-secondary institutions. It is an objective procedure for estimating the future budgetary requirements of an institution through the manipulation of objective data about future programmes and relationships between programmes and costs, in such a way as to derive an estimate of future costs.

Formula funding serves the intent of ensuring that similar institutions engaged in similar activities or achieving similar outcomes should enjoy equal access to public funding. Alongside this principle, its proponents see in it as a tool that:

- (a) Depoliticises funding decisions;
- (b) Provides an open fiscal environment;
- (c) Focuses on the underlying rationale for funding;
- (d) Reduces uncertainty;
- (e) Facilitates budget preparation;
- (f) Minimises conflict between institutions and the state and among institutions themselves; and
- (g) Provides equity through the use of objective criteria.

Formula funding is widespread among Asian, European and North American colleges and universities. There are two broad categories of formula; one based the enrolment (the enrolment formula) and the second one based on staff (the staff formula). Formulas assign weightings to the field, type of programme or type of institutions. Enrolment formula often give institutions clear signals to expand enrolment whereas staff formulas as in Mexico, may encourage rapid increase in staff numbers. The weightings used in formulae optimise distribution of resources within institutions and also reflect differential costs. (*Albrecht and Ziderman, 1992*).

Formulae are being increasingly used in higher education financing to meet the following ends:

- (a) To estimate the higher education system's financial need;
- (b) To justify budgetary requests;
- (c) To clarify the presentation of budgetary information to legislators;
- (d) To allocate, optimally, resources; and
- (e) To standardise budgetary data for comparative analysis.

The formulaic approach to funding is not deprived of shortcomings. Among its various limitations, the main ones are:

- (a) It tends to overshadow issues of institutional quality;
- (b) It can remain essentially unchanged or unexamined for long periods;
- (c) Its response time to changing circumstances is too slow;
- (d) It is likely to replicate past costs and behaviour;
- (e) It restricts innovation mainly with regards to the needs of non-traditional students;
- (f) It ignores economies of scale, fixed versus variable costs;
- (g) It is too enrolment sensitive; and
- (h) It overlooks varying capacities among institutions for generating their own revenue.

Input Funding: An appraisal

Input funding relates funding to input costs. When compared to negotiated budgeting the input approach to funding is more successful at providing stable funding. Unfortunately, in the process it does not address efficiency incentives. While the government purchases inputs from HEIs there is no guarantee that they would be deployed optimally and used to their full capacity. Three basic problems that emerge from input-based funding are:

1. Due to government control over determining supply, the labour market demands are often constrained
2. It promotes excessive homogeneity among institutions, which presupposes a “norm” for institutions to which they should converge.
3. In many instances input criteria determine instructional as well as research funds. This may prove to be ineffective in large systems where this may lead to resources being spread too thinly.

Output funding

On the basis of "payment by results" reasoning, a funding allocation system would focus on the output of the higher education system, rewarding institutions according to their performance in producing graduates and post graduates (and research). Such an approach is particularly relevant to inefficient higher education systems; it would help counter high student dropout and repetition that in turn may be fuelled by poor selection criteria and over generous programs of student maintenance support. There are only a very few instances of funding mechanisms that have adopted such an approach, and these are restricted to developed countries. At a practical level lies the problem of ensuring that quantity output objectives are not being achieved at the expense of quality of student achievement.

Output funding therefore is the inverse of input funding. While input funding is related to factor inputs in the educational system, output funding looks at the end products (graduates) of the process. Funding based on inputs usually leads to high cost per student. This is explained by students' dropouts or repetitions. Policy makers have eventually been compelled to devise a different scenario where such inefficiencies are minimised. Governments have, through the output funding techniques, diverted their attention towards increasing output per unit of resource. Output funding mechanisms place emphasis on both quality and quantity.

Output funding does not rely exclusively on academic performance while budgeting the annual funds of HEIs. It exists in different forms in a number of countries, the common ones being performance funding and performance budgeting.

Performance Funding and Performance Budgeting

Increasing demand for higher education has eventually compelled governments to depart from the traditional methods of financing higher education. Traditionally, governments would base their allocations to higher education institutions in the first place on current costs, student enrolment and inflationary pressures. These input variables reflect mostly the requirements of institutions rather than what the country would require from them. The performance-funding envelope should contain a variety of perspectives on performance, including more than just academic programme outcomes. Budget reform has brought distinct aspects of funding for results, viz., “performance funding” and “performance budgeting”; the former being usually more rigid than the latter.

Performance Funding

Performance funding can be broadly expressed as the allocation, to higher education institutions, of special sums, which are linked directly to the results of specific indicators. The relation established between resources and outcomes is transparent but inflexible. This rigidity compels higher education institutions to review their performances more frequently.

Performance-based funding is a common practice in many countries, such as Argentina, Australia and Germany. In Australia the Research Quantum, one of the few explicit performance funding mechanisms, is used to allocate a small portion of institutional funding (6% of university operating grants). In Denmark performance-based funding has a broader based application and is used to earmark core university operating grants. These are then distributed to each institution based on the number of students having successfully completed their course requirements.

Performance funding ties special sums directly to results on specific indicators. In performance budgeting governors and legislators consider reports of results on

performance indicators as a factor in the total funding of higher education institutions (*Burke and Serban, 1997*)

Performance Budgeting

Performance budgeting can be described as the allocation of resources based on performance levels where performance is measured in specific, meaningful terms. It is a fairly loose and subjective exercise linking measured results to policy decisions. This method differs from traditional funding scenarios in that it focuses on outputs rather than inputs or processes when deciding how to allocate funds. Under the line item budgeting, no attention is paid to how successful the programme is in achieving desired targets. Performance budgeting is based on performance levels and as such policy makers to make rational choices.

The benefits of a successful performance-based budget are many-fold and impact on both policy makers and the public. Healthy policy decisions are achieved through established performance trends. This yardstick of performance increases accountability among the government, policy makers and the public.

Contractual funding

Under the contractual funding system higher education institutions are regarded as 'contractors'. It involves the designation of specific government objectives and the implementation of funding programmes expressly designed for their achievement. In this respect it is not unrelated to strategic initiative and performance funding. The higher education institutions are required to deliver programmes that are specific. The state will be buying the academic services and paying for its purchase in the form of a grant.

The programme deliverables should be clearly defined in terms of both quantity and quality. Appropriate knowledge about the services provided may be a suitable gauge of the soundness of the contract. Clear descriptions would

eventually enable measurement of contract after its completion. Consequently, penalties to be applied for non-performance by contractors must be set out in advance. Since the agents as contractors make long term investment decisions on behalf of the principal (the country or the society), the latter must have a means to occasionally examine whether the decisions by the former are true to their stated objectives. They must be accountable to the principal.

Strategic Plan Funding

Strategic plans are considered vital while devising funding mechanisms. The rules of strategic plan funding require the institutions to submit to the Ministries of Education or buffer organisations, complete institutional plans, setting out their proposals for evolution, the student numbers they wish to enrol, and the resources required. Thus funding would be closely linked to the spectrum or profile of development.

Higher Education Institutions are increasingly being called upon to set up their respective institutional plans. As a result strategic plan funding is gaining greater momentum as an alternative funding strategy. The institution's strategic plan includes its mission, its contribution to national policies, and the type of activities it intends to launch as well as an evaluation of the performance of its previous activities. There is a high reciprocity between the investment to be effected by the government and the plan. The investment will be made in relation to the feasibility degree of the plan and will be directed mainly towards those activities, which are deemed strategic. Hence, the level of investment is based on how good the return on the investment will be. Therefore the trade off is if the institution fails in keeping up with its objectives, its funding may be seriously reduced, even threatening its continuance.

This system of funding improves competitiveness and efficiency amongst institutions. Moreover, it allows for the institutions' selected range of valued

activities to receive prioritised funding. Strategic plan funding further maintains and enhances good practice and high quality, forming an integral part of budget negotiations. Also, attaching a financial aspect to the missions of institutions gives a certain reality to their plans, which may otherwise be regarded as abstract. Another merit of strategic plan funding is that qualitative factors can be addressed.

Consequences of Output Funding

Critical concerns in the output based funding systems are anchored on the fact that they may penalise and reward institutions unfairly. Furthermore, the imposition of blanket penalties may refrain institutions from offering important programmes. As such financing based on output tends to pay more attention to quantity (number of graduates) rather than to quality, as performance indicators.

Negotiated funding

Most governments, however, do not transfer funds using mechanisms that use criteria related to the internal workings of higher education institutions. Those transfer mechanisms, which do not utilise internally objective criteria, have been grouped together as "negotiated funding". Individual allocations are usually based on those of the previous year, perhaps augmented by across-the-board incremental increases or, more frequently, according to the power position or negotiating skills of the institutional actors. Negotiation enables the government to maintain a high degree of political control over the university system as a whole as well as over individual institutions. Within this system of funding, decision-making does not depend on specific institutional characteristics (such as student numbers enrolled), but more so on the political relationships between the actors.

A review of experience in some 35 countries shows that in most cases, allocation is made on a negotiated basis. In contrast, a smaller number of countries allocate funding according to inputs; these are mainly, but not exclusively, industrial

countries, though the approach is used also in some developing countries in Asia and Africa. Relatively few countries employ performance-based criteria (*Albrecht and Ziderman, 1992*).

The negotiated funding system is also practised in some richer nations, like Greece and Italy. It allows for greater political relationships where decisions regarding the funding level obviate specific institutional characteristics, for instance student enrolment. It is further observed that negotiated funding has its roots in former colonial countries having inherited colonial administrative procedures.

Under the negotiated funding system institutions have no autonomous power to regulate enrolment, allocate fund optimally and to attract private funding. Negotiated funding can be further split into three sub-groups, namely incremental budgeting, ad-hoc negotiations and fixed revenue agreements. The common element among these three components of negotiated funding resides in the fact that the government still enjoys a considerable degree of power over the higher education institutions. In many instances, even if countries were to circumvent this tradition, weak institutional capacity and the lack of sufficient information with regard to institutional activity would limit the ability to move towards a different funding system (*Kells, 1991*).

Incremental Budgeting

Under this system funds are allocated to the higher educational institutions by the government on the basis of the preceding year's allocation. The institutions receive a flat increment over their previous budget. Incremental budgeting is common in Latin America (*Winkler 1990*), in South Asia (*Mridula 1985, Bellew and DeStephano 1991*) and in Africa (*Eisemon, 1991*).

The assumption behind incremental funding is that HEIs activities generally form a continuum. This implies that past decisions remain appropriate and would not be subjected to major revision. Thus providing little policy context for strategic planning. On the other hand this practice is simple and ensures that stability and equality are maintained among institutions as they receive the same proportional increment.

Incremental budgeting however disregards variables such as student enrolment or other activities conducted by the HEIs. It does not index current budget for inflation or increases in factor prices.

Ad-hoc Negotiations

In a number of countries negotiation is central to the acquisition of finance by the higher education institutions on a yearly basis. Ad-hoc negotiation leads to establishing a sound agreement between the two concerned parties—the responsible ministry or funding body and the institution—through their respective representatives. Striking a good compromise is highly relative to the bargaining power of the negotiators from the HEIs. Many African countries, previously either French or British, colonial States, have recourse to negotiation while determining the higher education budget. In Kenya and Nigeria, in spite of formal allocation guidelines, higher education institutions have to solicit the head of State for their monetary affairs.

Fixed Revenue Agreement

The fixed revenue agreement is an understanding between government and institutions whereby the former allocate a fixed percentage of their total revenue to higher education. Honduras, Brazil and Jordan are countries where this system is applied. In the case of Jordan a fixed ratio of revenue generated from stamp tax is diverted towards higher education, thus the concept of earmarked tax.

Limitations of Negotiated Funding

Negotiated funding has its stock of limitations, which cannot be overlooked. The fact that correlation between funding and activities of higher education institutions is practically non-existent tends to impair future scope for improvement of the institution. Funding by negotiations does not provide institutions any incentive to revise their productivity, to regulate enrolment level and to look for private funds to supplement declining government financial support.

Earmarked Funding

Under this system institutions are provided with additional public funds through a funding formula that will be used for targeted purposes that support specific policy objectives through earmarking. Such funds should be used exclusively for the specified purpose. Governments normally use earmarking to increase the impact of public investment in higher education under circumstances of resource constraints. This system helps to curb inequalities in further education through targeting funds for developmental initiatives in areas such as academic enhancement, staff development, research promotion, and information technology advancement.

Market-based Funding

The input funding techniques tend to neglect objective criteria while establishing costing norms. The alternative approach proposed is to let the market determine its own costs, giving way to a market-based funding system. In order to enable a more efficient allocation of resources, the elements of price signals and competition are considered. Institutions are engaged in a competitive bidding operation where they have to submit bids for each programme area. They would propose a certain price per student attached to a particular programme. The price being the cost at which they are willing to accept the student. The government

accepts the lowest bid, adjusted for quality evaluations by programme. This method eventually forces institutions to revise their unit cost for teaching to a minimum by enrolling students at marginal costs. Such a strategy has been tried in the UK in the late 1980s, but later abandoned as institutions were forming cartels and rigging prices.

Base-plus Mechanism

This mechanism includes formula and non-formula components. The formula component takes into account fixed and variable instructional costs as well as non-instructional costs. The funding mechanism also provides for items that may be requested by the system in areas of new initiatives and performance. The State could protect a base through adjustments for inflation. It should recognise the importance the base budget plays in ensuring and supporting academic quality. In the event of a budget shortfall the State could fund as great a percentage of its obligation as possible and provide the system with the necessary flexibility to manage their budgets. The system, in turn sets funding priorities in line to the recommended State's objectives.

In Australia the allocation of operating grant mechanism (under the base operating grant mechanism) adheres to the rolling triennial principle. This system provides certainty for HEIs and underpins their strategic planning processes and management.

Strategic Funding

A number of funding strategies have emerged during the 1980s against the backdrop of incapacity of traditional budgeting approaches to address quality improvement and other key aspects. The basic aim of these governmental strategies is to combine the need for national co-ordination and the setting of guidelines with the aim of stimulating initiative and innovative behaviour within

institutions of higher learning. The size of the strategic funding envelope is highly correlated to the range of public policy objectives the government wishes to pursue.

Block Grants with Guidelines

This system of funding is also termed “categorical grants”. The guidelines indicate the rules and regulations to which the institutions should abide while spending the funds transferred to them by the State. In fact categorical grants normally flow to institutions that meet certain funding criteria. The first phase consists of the higher education institution submitting an application for the grant, which is then released depending on the eligibility of their demands. Block grants are normally not based on achievements or competition.

Incentive Funding

Incentive funds are viewed as a reward given for reaching a desired outcome. Additional government money is deployed to achieve certain impacts on or to stimulate innovative projects in government priority areas. The element of accountability is inherent in this system (which distinguishes it from initiative funding). Budgeting in this manner has both general and well-defined aims. Examples are quality enhancement or shortening of duration of studies. More specific objectives would be like influencing the subject group balance in favour of certain subjects. Incentive funding can be found in the USA and Canada.

It is observed that the application of strategic funding has not proven to be highly effective in several cases. From the government’s point of view it is but a substitute of what institutions should be doing. As for institutions, they consider the time taken to formulate proposals and report outcomes not proportionate to the amount of funding available, when compared with block funding.

Public Subsidies to Households

In general subsidies to higher education take two routes. One is the subsidy payment made directly to higher education institutions by the state and which is the most current practice discussed above, the other being through subsidies to students and their families. The rationale remains to increase access to education. Subsidies are essential in systems where the students are expected to contribute to the cost of higher education and living expenses.

There exist different categories of public subsidies implemented in various countries. The mechanisms for providing public subsidies to households come in different forms.

The main forms of public subsidies are:

- (a) Vouchers
- (b) Loan-related subsidies (basically student loans)
- (c) Scholarships/grants
- (d) Family or child allowances contingent on student status
- (e) Tax reductions, and
- (f) Public subsidies (directed to housing, meals, transport, medical expenses, books and supplies, social recreational and other purposes).

Voucher System

The voucher system was originally proposed for primary education (*Friedman, 1962*). More recently, however, it has been seen as an appropriate policy tool for higher education and *Barnes and Barr (1988)* have proposed its application in the UK.

The voucher system focuses funding on the individual student, and renders institutional funding dependent upon students' choices. The government subsidy

would in effect be paid into the pocket of the individual student and spent by him/her when deciding on which higher education institution to attend. The transaction is between students and institutions.

Experience suggests that this method of funding has led to vast disparities in quality. In the long run access and equity are affected. It has often been proposed that the voucher method should be coupled with a tuition-fee regime. In this process higher education institutions must be endowed with the freedom to set a fee on top of the voucher presented by the student. The New Zealand government has recently adopted the voucher system. Certain modifications have been brought about in order to avoid the loopholes ingrained in the voucher system. Similarly, stakeholders in Australia have considered this scheme.

Maintenance Grant

The maintenance grant is payable to the student and is generally dependent upon parental income, spouse's income or the student's income as appropriate. In most cases it is a means-tested grant involving special awards to students that are only valid for a specific set of institutions or disciplines. It may also include additional supplementary annuities to support specific categories of students (e.g. disabled or those with dependants) or programmes judged to be of high priority. The means-tested maintenance grant is applied in countries such as Australia, Scotland and the UK. In Australia, for instance, the amount of grant is dependent on parental income, which is under consideration until the student reaches the age of 25. Unfortunately, the means-testing procedure tends to bind students to their parents or spouse as a result stifling their choice for an institution or course.

Scholarships in the form of grants are awarded to students on the basis of "merit" as a means to support students. How equitable the system is depends on the nature of the scholarship programme. However, it is flawed in the sense that it

disadvantages those who have lacked appropriate opportunities and facilities during their earlier stages of learning.

Loan Schemes

Loans are being increasingly used as a means of overcoming problems related to equality of access in the face of increasing costs, borne by students and families, usually in the form of tuition and fees. The loans can be provided by government, educational institutions, banks, or private institutions. Student loans can be no-interest, low-interest or a combination of both.

Student loans are found in a large number of countries. In recent years the World Bank has supported student loans projects in several countries. Student loan schemes can be found in countries like China, Columbia, Dominican Republic, Germany, Ghana, Hungary, Jamaica, Japan, Mexico, Venezuela, Vietnam, and UK amongst others (*Albrecht and Ziderman , 1991*)

With cost sharing with students, the money released from student maintenance grants and raised by means of graduate contribution to tuition generates new resources to fund higher quality and expansion of higher education. If the loan scheme is administered by the government, the first phase of initiation will require an initial government outlay, but since the money will eventually be “recycled” once students commence employment and start paying back the loans, the cost to the government in terms of loan disbursement will stop increasing. If the loan scheme is administered by banks or other finance houses there might be no cost to the government or it could be only be in terms of topping up of the interest payable on the loans taken by students.

Student loans have the following advantages:

- (a) Achieve the required increases in the tertiary enrolment rate;
- (b) Enhance access;
- (c) Make higher education more equitable; and
- (d) Assure revenue diversification and autonomy.

The advantage of loans over maintenance grants is that the former departs (although not totally) from parental contributions and hence allowing students to make their own education choices.

In spite of the popularity of the student loans scheme it is not devoid of problems. In many cases it is not equitable as it is applied to only certain types of courses and a restricted category of students. Very often it is regarded as a burden when repayments start and may even create a poverty trap as a major part of the income of the student may be used to pay back the loan and the interest.

There are two sets of concerns in the loans scheme. Advocates of student loans assert that the burden of loans on public budgets is lighter than grants and scholarships. They also contend that loans have the hidden possibility to devolve some of the cost of education to those who benefit most from the educational investment. On the contrary, some argue that such a loan will fail to encourage low-income students to pursue their education.

Pros and Cons of the Student-Based Funding System

Funding via students, increases equity as it stimulates access to higher education and provides impetus to efficiency and quality by increasing competition, for students, among higher education institutions.

However the instrument may lead to a drop in education standards. Students expressing their choices on their own can be both costly and inefficient to

institutions and hence the whole higher educational system. Moreover, students are tempted to opt for low cost courses to reduce expenditure.

Private Funding

As demand for higher education increases, the burden on public expenditure of higher education increases. Government cannot continue to sustain funding of higher education. It has been therefore recognised that private funding should be resorted to so as to close the funding gap. Private funding refers mainly to funds derived from students and the employers. With a free or heavily subsidised higher educational system, overwhelmingly the middle and higher-income groups gain high government subsidy and the subsequent benefits. Moreover, “no tuition fees” policies do not necessarily facilitate entrance to higher education by the lower income groups. Methods and incentives have therefore been devised to seek contributions from students towards the cost of their higher education.

Students as Contributors

Students are the major direct beneficiaries of higher education. They are fully aware of the fact that a degree has real cash value in the job market. Taken as an investment, the expenditure on higher education yields a high return to the students. Calculations have shown that the private rate of return is always higher than the social rate of return at the higher education level and hence there is merit therefore in asking the students to contribute to the cost of their higher education (*Psacharopoulos and Woodhall, 1985*).

Tuition Fees

The fact that higher education increases the earning capacity of the students after their graduation has encouraged the charging of user fees from the ultimate beneficiaries of higher education—students themselves. More and more developing nations have been shifting the cost burden from the taxpayer to

parents and students in the form of tuition and fees. This tradition has been in place for a longer period in several industrialised and OECD countries. The World Bank has advocated this major departure mainly due to demographic and fiscal pressure. Economists acknowledge this movement for it reflects greater equity and a more reasonable alignment of those who pay with those who benefit.

As from 1989 Australian students have been contributing to their education through the Higher Education Contribution Scheme by choosing between a discounted up-front payment and an additional charge to their annual tax bill once their earnings reach a minimum threshold (*The Australian Vice Chancellors' Committee Submission to the Review of Higher education Financing and Policy, op. cit.*). In Australia a differentiated fee is charged and in New Zealand institutions set a fixed average tuition fee to be paid by the students. Since 1998, Australian universities may offer places to undergraduate students for a fee payable directly to the institution. The advantage here is that universities are able to raise additional revenue without reducing opportunities for financially disadvantaged students. Although tuition and fees have been part of the agenda in the USA they have been generally absent from European higher education. Students in California (USA) contribute to higher education via the Education Fee and the University Registration Fee, which are mandatory. The income thus generated is used to support student financial aid, student services programmes, and a share of the University's operating costs, including teaching. Many industrialised nations have just begun experimenting with the introduction of a means-tested fee. In the U.K a means tested fee of 1,000 Pounds Sterling has been introduced (*Wagner, 1998*). In Africa introduction of tuition fees and the shift towards nearly full cost recovery on accommodation and catering seems to be widely recognised as both obligatory and reasonable. Implementation has been generally slow, sporadic and disproportionate in Kenya and Zambia, in the early 90s (*Blair, 1992*)

Chile is the only country in Latin America, which recovers a large portion of its student costs through student fees. In 1981 fees were introduced in public institutions and the number of private colleges charging fees also increased sharply. In Argentina where the universities are left the choice to charge fees, a great majority of the students enrolled do not pay fees but some universities charge fees at the post graduate level. In Northern Mexico a joint student/faculty committee administers the fees collected from students to upgrade computer labs and purchase scientific textbooks and journals (*Salmi, 1998*).

Economies in transition are also opening up to market forces and are faced with increasing costs in higher education. In Russia previously only students from enterprises or organisations were asked to pay fees. A governmental decree in April 1994 made tuition charges legal. However, the State Committee for Higher Education recommended that fee-paying students should not exceed 10% of total admissions. In other institutions like the University of Warsaw students classified as “evening” or “extramural”, were charged tuition fees. After recognising its heavy subsidisation of higher education (86% of per capita GDP as compared to 45% on average of OECD countries), in 1993, the Hungarian government opted for tuition fees in the public institutions at a fixed monthly rate. Tuition fees generally apply to all full-time students in undergraduate and doctoral training. Part-timers are charged a supplementary fee. Revenue generated from tuition fees for the referred period has covered approximated 7.5% of higher education outlay (*Bollag, 1997*).

The transition from heavily subsidised university students to cost-sharing students is more pronounced in Europe. Income from tuition fees in public universities represents 22% of recurrent expenditure in Viet Nam, 36% in Chile and 46% in Korea (*World Bank, 1994*).

Graduate Tax System

The graduate tax is an additional charge to the students' annual tax bill once they start earning a salary or once their earnings reach a minimum threshold. A graduate tax, in broad terms is a surtax incurred by the student on his or her income without regard to any amount individually owed. In a graduate tax there is no immediate relief to the government's current cash obligation for the support of the universities or the students, although the government secures a stream of future income surtax payments. The students continue to get their usual subsidies in the form of low or no tuition fees and perhaps cost of living grants. However, they incur obligations for greater income tax payments (*Johnstone et al,1998*).

Thus far, no country has successfully adopted a pure graduate tax system. The Higher Education Contribution Scheme (HECS) of Australia has adopted a system close to the graduate tax (*Johnstone et al,1998*). In fact students are given the choice to either meet about a fifth of the cost of their degrees through the HECS under which they can pay the charge as an up front fee on enrolment (earning 25% discount for paying the fee before the beginning of each term) or hold off the annual fee until they graduate and repay the full sum as a tax surcharge. A large majority elect to pay the charge through the taxation scheme rather than up front. Students are not charged interest on the debt but the amount is indexed to inflation.

The graduate tax is often viewed as a tool to enhance contributions by students to the cost of their education. It can be used in the case where the student grant (not means-tested) is offered in exchange for an obligation of a graduate tax. The system offers the prospect of an adequate level of maintenance for students opting to pay a graduate tax and has the potential to protect the quality of education. Thus those confident about their future earnings will cease to receive unnecessary subsidy from taxpayers. The graduate tax is however ill viewed in developing countries; currently in South Africa it is believed to overburden taxpayers holding university degrees who will be constrained to pay an additional sum for their

academic achievement. It is feared that the repercussion may eventually be a brain drain from the country.

The application of a graduate tax in developing countries would depend largely on the degree of viability of their respective income tax system. A stable income tax regime might ease the acceptance of the graduate tax. In spite of its strengths as a revenue-raising device it has been criticised on the basis that it is unfair towards those who earn higher revenue since they are forced to pay a disproportionate amount in relation to the cost of their education. It is also considered to be a life-long obligation as against a loan, which involves a limited time commitment.

Employers' Contribution

Employers form part of those indirect beneficiaries of higher education. They have a vested interest in the supply of knowledgeable and skilled graduates and in lifelong learning to update the workforce. Employers of highly skilled and trained graduates clearly have a competitive edge, through the benefits reaped from their present or past relationship with universities and/or their ability to access a pool of people with know-how and expertise. As a consequence there is growing assent of increased contribution from employers, for instance through cadetships and scholarships, alumni, the professions and industry. In the UK employers are already contributing to post secondary education through sponsorship of research, students and courses, which is relatively high compared to other countries. To ensure that funding from employers forms a continuous flow, government may impose a compulsory levy, related, for example to their individual levels of investment in their training of graduates.

On the other hand it has been argued that governments should boost funding for university-industry linkages by means of strategic partnerships with industry and research and training schemes. It is also contended that appropriate incentives should be devised to attract funding from the industrial sector. By offering a tax

deduction for industry investment in university research, teaching and training may help to achieve such an objective. Investment of this order may include scholarships, cadetships, sponsoring programs or chairs, and providing equipment for teaching. Industry-funded scholarships provide a constructive mechanism to promote linkages in a cost effective manner and help train the nation's future researchers. Many of the world's renowned multi-national companies—Mac Donald's, Microsoft, Motorola—have established their own “in-house” teaching and training programmes to ensure that their employees are equipped with the necessary skills and up to date knowledge to add-value to the industry (*The Australian Vice Chancellors' Committee Submission to the Review of Higher education Financing and Policy, op. cit*). With increasing demand from the industrial sector for specialised “just in time courses” tax deductibility may be beneficial to both higher education institutions and industries.

Institutions as Fund Generators

Higher education institutions can contribute to the increase of their own private revenues by indulging in entrepreneurial activities. The prime aim is to achieve specific new objectives beyond the core business of teaching and research.

It is largely accepted that higher education is becoming increasingly diverse and unequivocally tied up with the industrial sector (*Johnstone, 1998*). The faculties and their respective departments can raise financial resources through the sale of consultancy services and specialised courses, commercialisation of research and development activities, and selling and renting portions of their assets. Moreover, to assure guaranteed participation from all departments, the notion of cross subsidisation is applied. In so doing, those departments with low entrepreneurial potential are not left behind. In Mexico around 80% of the income locally generated is kept by the departments. In Argentina the resources generated by universities saw an increase to 14% of the total budget in 1996 from 7% in 1991 (*Marquis, 1998*). African universities (e.g. University of Zambia and Eduardo

Mondlane University in Mozambique) are targeting non-university business organisations and individuals through the Internet. The Ghanaian universities have been fairly successful in the marketing of their consultancy services, indicated by a profit of 9% on a total income of US \$22,700 in 1991. These universities are acclaimed for the way they run their consulting centres (*Blair, 1992*).

Academic entrepreneurial initiatives in China have endowed universities with greater autonomy to generate their own revenues. As at 1992 half the number of higher education institutions in Shanghai operated 700 enterprises. A more precise method of generating income would be through the provision of short-term training courses directly to enterprises. A typical example is the Department of Law of Beijing University, which ran courses on a large number of newly adopted laws to employees in state-owned and joint-venture enterprises (*Mukherjee, 1997*). HEIs can also derive financial resources by charging an overhead in proportion to the nature of the research and the source of funding. By means of intellectual property rights universities have the capacity to reap extra revenues. Intellectual property acts as a crowbar to get in return for the use of facilities, resources and services provided by the institution outside the mainstream activities of teaching and research. Among richer countries, like the OECD nations, entrepreneurship is viewed as a university service and as a laboratory for teaching and applied research (*Clark, 1998*). With HEIs emerging as entrepreneurs new units outside the traditional departments are developed, thereby introducing new environmental relationships and new modes of thought and training. Privatisation of research centres can help to foster entrepreneurialism and increase revenue generation.

The benefits accruing from entrepreneurial activities are multi-faceted. Such activities render the HEIs more sensitive to fluctuations in market demands. They help in the provision of more relevant training experience. Linkages between HEIs and the corporate world contribute towards curriculum development,

facilitation of work placements and part-time teaching arrangements. Moreover, they have the capacity to allow the HEIs to make wider choices. The limitation however is that this system may result in the institutions' over reliance on private income. In fact the extent to which discretionary money is complementary to declining government support is somewhat misleading. Often surpluses can hardly be deployed to sustain core activities. The rules and guidelines should be well delineated for the smooth operation of entrepreneurial activities. Resources obtained should be utilised properly to assert quality in education. Money inflow must be dispensed in a manner that leaves no faculty or department lagging behind. It is also pointed out that not all HEIs will be successful at raising their own income. This system may turn out to be rather divisive where only a relatively small number of HEIs gain any real benefits.

Non-traditional Sources of Revenue

The "non-traditional" sources of revenue can prove to be beneficial vis-à-vis decreasing levels of higher education funding from traditional sources (i.e. state appropriations, federal grants, tuition). The basket of non-traditional sources of revenue consists of alumni, grants from foundations, royalties, sales and/or services of educational activities, and income from sales and rental of real estate.

Investment and voluntary support can add to the financial resources of the institutions. Funds whether endowment or non-endowment, when invested strategically can be an ongoing source of financial support that provides resources for future generations and revenue for current operations. Voluntary support can be closely defined as all restricted or unrestricted transfers of money given to an institution by an individual, group, business or non-governmental agency. The donor obeys a *quid-pro-quo* status, as it is not expected to derive any economic benefit from the use of the funds. Voluntary support includes private gifts, non-contractual research grants and bequests. It excludes income from invested funds, government support, and contract research.

Alumni Support

Alumni financial support is another important resource and also a tangible reflection of the commitment of alumni to the institution. In this regard, it is important to note that the extent of alumni support reflects alumni feelings about the education they received from the institution. It expresses the willingness to give back financially to the institution. Alumni support takes the form of donations of time also, for example, assistance in recruiting new students, in mentoring students, or in providing internships.

The drawback with alumni resides in the frequency with which alumni move after graduation and the resulting difficulty of maintaining current address information. This calls for greater efforts to increase the number of “addressable” alumni to appeal for their support.

Philanthropy

Philanthropic giving to higher education is yet another supplement to government expenditure. The tradition of philanthropy is prevalent in countries like USA, Argentina, India and China. There are exceptions though: Beijing University had received US\$ 10 million by the Hong Kong tycoons to build the largest library in Asia. But the high level of philanthropic giving of higher education which is in the United States - an estimated of US\$14.25 billion in 1995/96, with eight of the top twenty recipients being public universities - is unlikely to be achieved in most countries (*The Chronicle of Higher Education, Almanac Issue, 44:1, August 29, 1997, p.30.*)

Philanthropic activities are successful in the presence of a tradition of philanthropy along with a favourable tax treatment of charitable contributions. The latter will incur a haul in charges onto the government in the form of lost tax revenue. Prior to the 1970s it was thought in the USA that philanthropy or the

support to the truly needy was to be channelled towards private institutions solely, public institutions being the “responsibility” of the government. But as State public revenue support began to wane, philanthropic activities were highly welcomed by public institutions too.

Philanthropy is therefore gradually becoming a further source of non-governmental revenue. However, it is unlikely that this form of financial support will gather momentum and play a major role in the near future in most countries. And this is even more likely for developing countries, with their limited wealth. Nonetheless, this source can be tapped by means of tax incentives and can be a good alternative for additional revenues (*Johnstone et al, 1998*).

Summary of funding mechanisms

On the basis of the different funding mechanisms elaborated above, it is observed that mutations in higher education funding systems are being almost universally adopted irrespective of different levels of economic and higher educational institutional development.

The massification and diversification of higher education are driving governments to implement a finance and management reform agenda in the sector. There is more support for supplementing governmental revenues, encouraging private sector collaboration, and loosening governmental regulations.

This reformation at the global level can be traced to the following trends:

- (a) Sharing of higher education costs with students and families via tuition and full cost recovery fees;
- (b) Means-tested grants and student loans are at the disposal of students in many countries;

- (c) Sharing of higher education costs and Means-tested grants and student loans are on the public higher education policy agenda of a number of countries;
- (d) Cost-effective, market-responsive learning is taking place in private institutions;
- (e) Financing of higher education institutions is considering measurable output indicators;
- (f) Budgeting is increasingly devolving expenditure authority to HEIs; and
- (g) Entrepreneurship on behalf of institutions, departments, and individual faculty is being strongly encouraged.

However, the path of the reform agenda is not as clear as it appears. Many countries are facing resistance. Public higher education sectors in most countries like Russia and the newly independent states continue to have great difficulties in restructuring inefficient institutions. Means testing has turned out to be quite tough in countries where tax compliance is uneven. Loans, in many instances, have not shifted the cost burden from the taxpayer or government to the student due to insufficient rates of interest and ineffective means of collection. Performance budgeting and other new forms of financing have often been accompanied by unwanted consequences such as attempts to exaggerate performance so as to secure more resources. Finally in the devolution of authority between government and institutions there is a need for clarification of what authority and what operating decisions belong to the institutions and what belong to the government (*Johnstone et al, 1998*).

The debate between the centralised and decentralised framework is still being deliberated in many countries. The relative importance of the public and the private sectors, about the role of the government and the autonomy of the institutions are still open issues. However, the aims of such reforms are to maintain standards of quality and consumer protection, ensure enough coverage to

satisfy the requirements of the society and to affirm access to those of high ability from families otherwise unable to pay.

The Mauritian Case

The Government of Mauritius regards investment in education as a priority. The introduction of free pre-primary education in 1996 bringing education free at all levels, from pre-primary education to the higher education level in the country is the most striking evidence of the commitment of the government to education. Virtually all children (6-11 years old) are enrolled in primary schools. At the secondary level an average of about 60% of the school age children are enrolled. Participation at the post-secondary school level is however still very low and the challenge for the government therefore is to increase access and improve quality at secondary and post secondary levels. In order to achieve all this, more financial resources will be required in the education sector.

Higher Education

Throughout the world, the education sector is experiencing a massification of demand for higher education. The phenomenon relates a transformation from a system initially serving an elite group to one catering for a wider spectrum of students. In Mauritius the picture has not been different. As the economy was embarking on its next phase of industrialisation, one underlined by capital-intensive technologies, it became imperative to widen the pool of sophisticated manpower and technical skills. The higher education sector was regarded as the major supplier of quality labour, necessary to spiral the economy towards higher-value products. The *Mauritius Economic Review 1992-95* observed that “tertiary enrolment was only 3% (excluding those abroad), as compared with 12% in Korea and 6% in Singapore”. More recently, the *1998-1999 Budget Speech, (Ministry of Finance, 1998)* highlighted the fact that the tertiary enrolment in

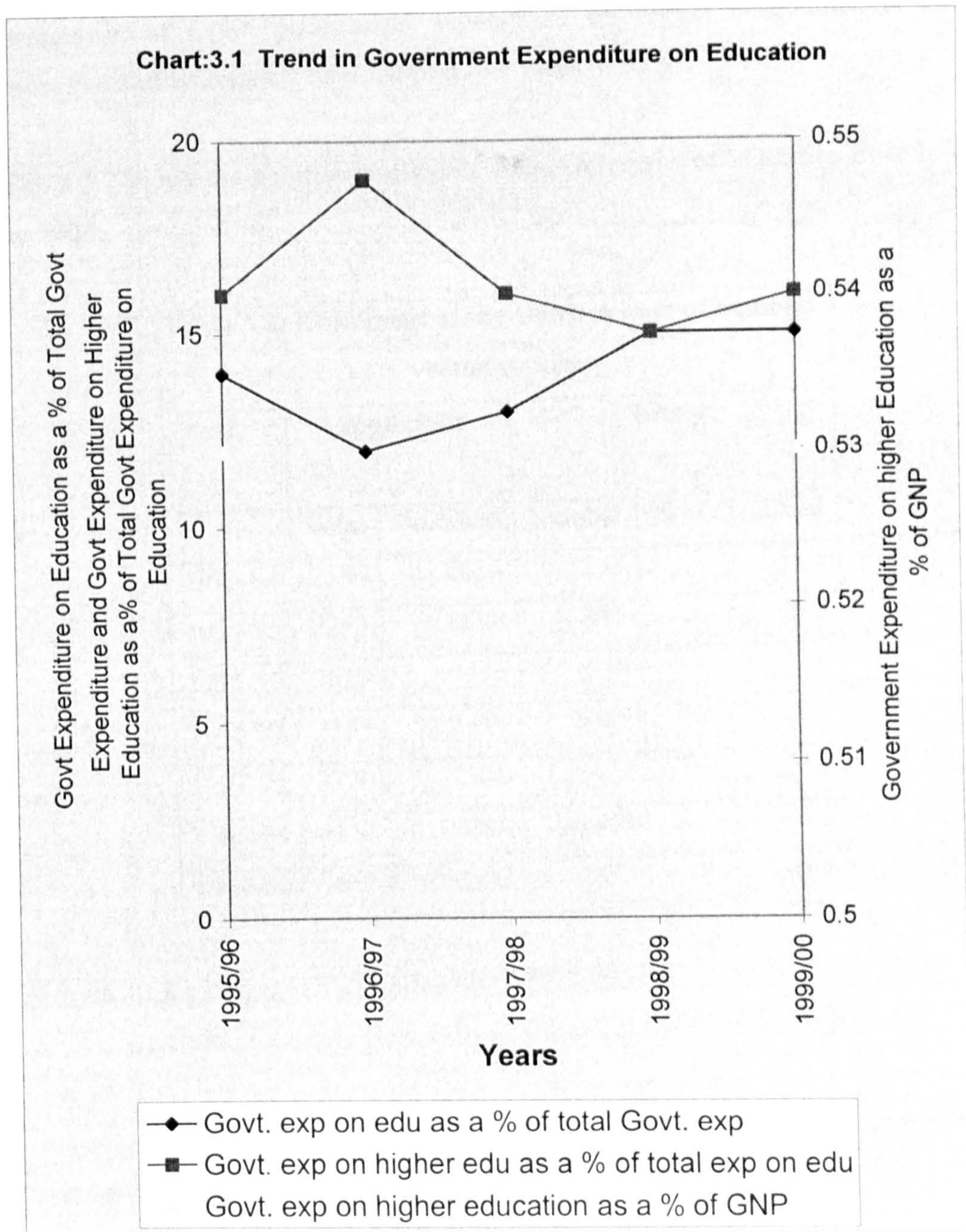
Taiwan and Korea was 31% and 48% respectively as opposed to the 3% in Mauritius.

Expanding demand for higher education is likely to fuel the consumption of public funds. In Mauritius, the trend in government's funding of education and higher education is shown in Table 3.1.

Table 3.1: Trend in Government Expenditure on Education					
	1995/96	1996/97	1997/98	1998/99	1999/00
GNP at Factor Cost (Rs m)	68,643	76,436	85,100	99,253	106,904
Total Govt. rec exp (Rs m)	15,900	18,050	20,500	22,300	24,600
Rec expenditure on Education (Rs m)	2,262	2,080	2,767	3,432	3,669
Rec exp on higher education (Rs m)	363	393	441	521	569
Govt. exp on edu as a % of total Govt. exp	14	12	13	15	15
Govt. exp on higher edu as a % of total exp on edu	16	19	16	15	16
Govt. exp on higher education as a % of GNP	0.53	0.52	0.51	0.53	0.53

Sources: National accounts estimate - MEPD; "Education Cards" Statistics - MOESR and the Draft Recurrent Budget 1999/2000.

The data in table 3.1 is illustrated graphically in Chart 3.1 on the next page.



It is observed from Table3.1 and Chart 3.1 that government expenditure on education as a percentage of the total government expenditure has increased by only one percentage point over the past five years. It is also observed that government expenditure on higher education as a percentage of total expenditure

on education has remained almost constant over the past five years at 16%. As a percentage of GNP, government expenditure on higher education has also remained almost constant over the past five years (0.53%).

Table 3.2 shows the trend in enrolments at the University of Mauritius from 1993 to 2000.

Year	Applicants		Intake	
	Total	Qualified	Number	% of Qualified
1993-94	2386	2036	1253	61.5
1994-95	2253	1896	935	49.3
1995-96	2819	2433	956	39.3
1996-97	3154	2417	1029	42.6
1997-98	3320	2769	1427	51.5
1998-99	4157	3398	1540	45.3
1999-00	5657	4792	1893	39.5

Source: (i) Report on Tertiary Education, 1997/98, TEC.

(ii) Annual Reports University of Mauritius 1998/99 and 1999/2000

It is observed that the annual average increase in the total number of applicants is 16% over the period 1993 to 2000. The proportion of qualified applicants, out of the total, hovers around 85% (with $\pm 5\%$ deviation) for the period under consideration. The rate of intake, however, has been uneven with a low of 39.3% for 1995-96 and a high approximating 61.5% for 1993-94. On average, less than 50% of the qualified applicants are admitted at the UoM. In short, The data shows that there are large unmet demands for higher education in Mauritius.

Need for Options for the Funding of Higher Education Institutions

Most frequently, the lower levels of education funding are largely provided by the State. However, more variations are present in the funding of higher levels of education. Participants falling under the umbrella of higher education are being increasingly considered the primary beneficiaries. As demand for higher education outstrips countries' abilities for funding, governments are looking for alternative ways of securing funds for higher education. The various options underlined may be broadly classified in the following manner:

(a) Establishing level of tuition fees.

Under this system the government normally defines a level of tuition fees, which it deems appropriate to charge the students. Under the Higher Education Contribution Scheme every student in Australia is compelled to repay a sum (about one-fourth) of the costs of instruction for each year of study leading to the first degree. Its neighbour, New Zealand, applies the formula for core funding. The formula allows about 80% of the 'fully budgeted' level of support per student, leaving to each institution the decision to establish a schedule of tuition fees. Students can finance tuition fees through student loans, to be repaid in instalments in periods when incomes exceed a threshold.

(b) Transfer of Burden

Under this system the responsibility for financing students is shifted from the public education budget to either the student or the family or to other government departments, for instance unemployment or training funds. In Germany and Sweden, student financial support is provided partly in the form of a grant and partly in the form of a subsidised loan.

(c) Strengthening the earning capacities of the institutions

Higher education institutions are adopting various entrepreneurial activities to increase their private revenues. For example, contract teaching, international programmes and research can help to underwrite administrative overheads.

(d) Promotion of the development of new forms of teaching and learning

This option is narrowly linked to the preceding one. Institutions are encouraged to forge partnership with business and industry, as in the Enterprise in Higher Education Initiative in the UK. Besides building on the expertise and contexts for learning these initiatives have the inherent capability to draw on financial, human and material resources provided by both private and public partners. This method provides financial resources from business and industry to the institutions.

(e) Capitalising on full- and part-time student earnings.

This alternative revolves around building on changes in study programmes, which cater for alternate periods of work and study.

Summary

An overview of higher education funding mechanisms shows a wide spectrum of scenarios. In Europe, where most universities are public, the institutional cost of instruction is incurred by the state. In Asian countries a major share of the student population attends private institutions. As a result, they pay for the full cost of higher education. Countries like the United States, where there is a mix of public and private institutions, are situated at the middle of the spectrum. Most African countries not only provide free institutions but also free boarding on campus.

The massification and diversification of higher education are driving governments to implement a finance and management reform agenda in the sector. There is more support for supplementing governmental revenues, encouraging private sector collaboration, and loosening governmental regulations leading to inter-alia, sharing of higher education costs with students, establishing means-tested grants and student loans, encouraging cost-effective, market-responsive learning in private institutions and supporting entrepreneurship on behalf of institutions.

Investment in higher education will need to be increased in view of emerging mass higher education. There is need to review the system of funding higher education and to encourage beneficiaries from higher education to contribute to the cost of higher education so that a right balance is struck between the various sources of funding.

The four principal beneficiaries of higher education are:

- The students
- The state (society)
- The employers
- The institutions

Students (graduates) derive a return from higher studies. They are the direct beneficiaries of any type of education. A degree is a passport to more rewarding jobs and a higher standard of living and hence there is a strong case for all students to make greater personal investments towards higher education.

The State also benefits tremendously from a good system of higher education as it leads to social and economic development. The benefits, which accrue to the government are multiple and include, a more productive workforce, a higher income earning workforce, a better educated population, a more informed voting base, better social skills, political stability, social stability and reduced crime. The contributions of employers to higher education are fully justified since their

profits are closely linked to the expertise of their manpower. Higher education institutions should seek to adopt an entrepreneurial approach. They can increase their income by making optimum use of facilities, restructuring, changed methods of delivery and greater collaboration.

Today in most countries, governments are the dominant source of higher education finance. Traditionally, government subsidies have been channelled to higher education institutions directly from Ministries of Education or Finance, or from separate Ministries of Higher Education (as is common in some African countries). These "buffer" bodies lie between a government and the higher education institutions, with the aim of insulating higher education institutions from direct government intervention.

Improving access to higher education would require funding scenarios to operate along the principles of equity, development, democracy, efficiency, effectiveness, and financial sustainability and shared costs. Different funding mechanisms have been discussed in relation to government, students, employers, institutions and non traditional sources.

The Government of Mauritius regards investment in education as a priority. The introduction of free pre-primary education in 1996 bringing education free at all levels, from pre-primary education to the higher education level in the country is the most striking evidence of the commitment of the government to education. Participation at the higher education level is however low and the challenge for the government therefore is to increase access and improve quality at the higher education level. In order to achieve all this, more financial resources will be required in the education sector.

Government expenditure on education as a percentage of the total government expenditure has increased by only one percentage point over the past five years. Government expenditure on higher education as a percentage of total expenditure

on education has remained almost constant over the past five years. Government expenditure on higher education as a percentage of GNP has also remained almost constant over the past five years. There are large unmet demands for higher education in Mauritius. The rate of intake at the UoM has been uneven with a low of 39.3% for 1995-96 and a high approximating 61.5% for 1993-94. On average, less than 50% of the qualified applicants are admitted.

As demand for higher education outstrips countries' abilities to fund it, governments are looking for alternative ways of securing funds for higher education. The various options available may be broadly classified in the following manner:

- (a) Establishing level of tuition fees.
- (b) Transfer of Burden
- (c) Strengthening the earning capacities of the institutions
- (d) Promotion of the development of new forms of teaching and learning
- (e) Capitalising on full and part-time student earnings.

CHAPTER 4: COMPARATIVE ANALYSIS WITH SELECTED COUNTRIES

In the first part of this chapter a comparative analysis of Mauritius with twelve selected countries is made on the basis of selected educational and economic indicators. The second part of the chapter deals with competing funding models prevailing in other countries and which could be adopted by Mauritius. The purpose of the comparison is to provide a broader perspective of what is happening in higher education funding in other countries and in drawing attention to patterns of educational investments that are diverse.

Selecting countries for comparison purposes needs to be made with caution since many factors vary simultaneously between countries. No two countries are alike or have the same historical antecedents or will follow the same pattern of development. Nevertheless, comparison is helpful in drawing attention to patterns of educational investments that may be very different from those in other countries at similar stages of economic development.

For this purpose 12 countries have been selected. These are:

1. Australia
2. Barbados
3. Botswana
4. Costa Rica
5. Cyprus
6. Hong Kong
7. Korea
8. Malaysia

9. Singapore
10. Swaziland
11. Trinidad & Tobago
12. United Kingdom

Except for Australia and the United Kingdom all the other countries have been selected on the basis of some common features with Mauritius:

- (a) Small island economies
- (b) Small population
- (c) Similar GNP
- (d) Similar growth rate in GNP
- (e) Similar Human development index

Australia and the United Kingdom have been included in the list so as to provide an indication of what is happening in the field of higher education in industrialised and developed countries. Australia is considered as the country where higher education funding has undergone much change over the past two decades. The choice of the United Kingdom is also based on its historical relationship with Mauritius. In fact the higher education structure in Mauritius and its management are similar to those of the United Kingdom. The choice of the two African countries (Botswana and Swaziland) is mainly due to the major changes that have taken place in their higher education systems, because of their stage of economic development and also because Mauritius forms part of the African sub continent geographically and is part of the SADC, COMESA, OAU and the African Union (AU). This therefore will provide a comparison at the regional level. The sample also includes four newly industrialised and developing Asian countries, Singapore, Hong Kong, Korea and Malaysia and four small island economies, Trinidad & Tobago, Barbados, Costa Rica and Cyprus. The economic achievement of Singapore is often cited as an example and a model for Mauritius to follow and hence a country with which it would like to benchmark.

Details of the education systems of the selected countries have been obtained from <http://www.unesco.org/iau/whed.html>.

Brief Description of the Higher Education Systems and Funding

Australia

Australian universities are autonomous self-accredited institutions established by Federal, State or Territory legislation. The first universities were established in four of the original colonies - the University of Sydney in 1850; the University of Melbourne in 1853; the University of Adelaide in 1874 and the University of Tasmania in 1890. Australia's first private university was established in 1987. In 1988, the Federal Government introduced sweeping changes that restructured and reformed publicly funded higher education, harnessing it more closely to the needs of the economy. The so-called "binary divide" between universities and Colleges of Advanced Education (CAE) has been officially abolished and replaced by a single "Unified National System" (UNS) substantially funded by the Department of Employment, Education, Training and Youth Affairs. There are currently 38 universities, 7 federally funded colleges and 1 private university in Australia.

The Federal Government is responsible for funding public higher education institutions. Publicly funded universities obtain their income from a number of sources: government, course fees, industry investment, bequests and commercial activity. The reform of higher education led to the introduction of full cost-fees for overseas students and to a student contribution to course costs: the Federal Government introduced the Higher Education Contribution Scheme (HECS) in 1989 in order to recover from students some of the cost of higher education studies. HECS is administered by the Department of Education, Training and Youth Affairs and represents about 35% of average tuition costs. The HECS contribution applies to Australian citizens, Australian permanent residents and

New Zealand citizens enrolled in a higher education course that has been funded by the Federal Government. Higher education is administered at the Federal level through the Department of Education, Training and Youth Affairs which has responsibility for higher education policy development and programme administration. As from 1989, the Australian students have been contributing to their education through the Higher Education Contribution Scheme by choosing between a discounted up-Front Payment or an additional charge to their annual tax bill once their earnings reach a minimum threshold (<http://www.usc.edu/dept/education/globaled/wwcu/background/Australia.htm>).

Barbados

Barbados is affiliated with the University of the West Indies. The supreme authority of the University is the Council, which comprises representatives of member territories, professors and appointed members. The University is autonomous. More than 90 per cent of its resources come from contributing territories. Other higher Institutions include Barbados Community College, Erdiston Teacher's College, and the Samuel Jackman Prescod Polytechnic (<http://www.usc.edu/dept/education/globaled/wwcu/background/Barbados.htm>).

Botswana

Higher Education refers to all education that stipulates a minimum entry requirement of successful completion of senior secondary school. This refers to Diploma or Degree programmes and other advanced professional courses. Higher Education is mainly provided by the University of Botswana although there are private institutions also operating in the country. In order to help needy students a state supported student loan scheme is available in the country (<http://www.usc.edu/dept/education/globaled/wwcu/background/Botswana.htm>).

Costa Rica

Higher education is provided by public institutions, several private universities, university colleges and various private post-secondary institutions more

specifically devoted to commercial studies and regional institutions of higher education. State university higher education is coordinated by the Consejo Nacional de Rectores (CONARE) and its technical secretariat, the Oficina de Planificación de la Educación Superior (OPES). Private universities are supervised by the Consejo Nacional de Enseñanza Superior Universitaria Privada (CONESUP). A student loan scheme is available to needy students to help them with their higher studies (<http://www.usc.edu/dept/education/globaled/wwcu/background/Costa Rica.htm>).

Cyprus

The University of Cyprus, which opened in September 1992, comprises four schools (Humanities and Social Sciences, Pure and Applied Sciences, Economics and Management and Letters). As from September 1987, a Law to regulate the establishment control and operation of tertiary institutions was enacted by Parliament. According to this Law, all private tertiary institutions have to register with the Ministry of Education and Culture. However, registration does not imply recognition of their degrees. In the Turkish Cypriot the Higher Technological Institute, Famagusta, was upgraded in 1986 and renamed the University of the Eastern Mediterranean. Student loans are available to students for their higher studies (<http://www.usc.edu/dept/education/globaled/wwcu/background/Cyprus.htm>).

Hong Kong

Higher education is provided by universities, polytechnic universities, and institutions of professional education. The University Grants Committee is the advisory body, which makes recommendations about the development of the tertiary sector, the financing of institutions and the administration of government grants. In 1990 the Hong Kong Council for Academic Accreditation that validates degree courses was created. A state supported student loan scheme also exists in Hong Kong to assist poor students to pay fees for their higher studies (<http://www.usc.edu/dept/education/globaled/wwcu/background/Hong-kong.htm>).

Korea

There are five types of institutions: colleges and universities (national, public and private); teachers' colleges and colleges of education (national); junior colleges (national, public and private); open universities (national and private); and other types of institutions (private) such as seminaries. Under the Education Law, all institutions of higher education, whether public or private, come under the responsibility of the Ministry of Education. It exercises control over teaching staff, academic requirements, regulation for the founding of institutions, etc. With regard to other matters, universities comply with the decisions of the Korea Council for University Education (KCUE). A student loan scheme is available to help needy students with their higher studies

(<http://www.usc.edu/dept/education/global/wwcu/background/Korea.htm>).

Malaysia

Higher education is provided by universities, polytechnics and colleges. Private universities have recently been established. All institutions of higher education are under the supervision of the Minister of Education. The Higher Education Division of the Ministry of Education coordinates and monitors the activities of institutions of higher learning. The polytechnics fall under the jurisdiction of the Technical and Vocational Education Division of the Ministry. Universities are self-administered and government financed. Universities can only be established in accordance with an Incorporation Order signed by the King. The International Islamic University was founded under co-sponsorship between the Malaysian Government, Maldives, the Organization of Islamic Conference, Bangladesh, Pakistan, Turkey, Libya and Saudi Arabia. Under the University and University Colleges Act 1995, the highest university authorities are the Administrative Board (Council) and the Senate. Three foreign universities have recently established campuses in Malaysia: Monash University, Curtin University and Nottingham University-Malaysian campus. In Malaysia also students can have recourse to a student loan scheme for their higher studies (<http://www.usc.edu/dept/education/global/wwcu/background/Malaysia.htm>).

Singapore

Three kinds of institutions; universities, polytechnics, and other centres of public and private training provide higher education in Singapore. There are two institutions of university level, the National University of Singapore (established in 1980 through the merger of the University of Singapore and Nanyang University) and the Nanyang Technological University (founded in 1981 as Nanyang Technological Institute, and acquired present autonomous status and title in 1991). They are almost wholly financed by the Government, which has representatives on the governing councils of the institutions. All post-secondary programmes, offered by public and non-public institutions must be approved by the Higher Education Division of the Ministry of Education. In Singapore, in addition to a student loan scheme, students (including foreign students) are also given a grant to pursue their higher studies provided they work in Singapore for a specific period of time after the completion of their studies (<http://www.usc.edu/dept/education/global/wwcu/background/Singapore.htm>).

Swaziland

Higher education is provided by the University of Swaziland established as a National Institution in 1982. The University is governed by the Council that consists of members appointed by the Chancellor from among academic members. The Senate is responsible for academic matters and consists of deans from each faculty. The government contributes about 60% of the recurrent budget of the university and study loans to about 80% of the Swazi students enrolled. Other institutions of higher education include teacher training Colleges, which are affiliated to the University, and specialized institutes (<http://www.usc.edu/dept/education/global/wwcu/background/Swaziland.htm>).

Trinidad and Tobago

Higher education is provided by the University of the West Indies (UWI), St Augustine campus, the National Institute for Higher Education, Research, Science

and Technology (NIHERST), technical colleges, teachers' colleges and a host of private institutions. The University is financed through contributions from participating governments, grants from private corporations and individuals, and fees from students. Other tertiary-level institutions in the country include various colleges and institutions providing training in Teacher Education, Agriculture, Forestry and Fishery, Technical and Information Technology, Management and Banking, Languages, Nursing and Health Care, and Theological Education. There are a growing number of private tertiary institutions of overseas origins that have accredited status with North American universities, e.g. the Caribbean Union College. As from 1991, responsibility for university-level education and for the provisioning of the National Institute for Higher Education, Research, Science and Technology has been entrusted to the Ministry of Planning and Development and the Ministry of Finance

(<http://www.usc.edu/dept/education/globaled/wwcu/background/Trinidad-and-tobago.htm>).

The United Kingdom

Higher education is provided by three main types of institutions: universities, colleges and institutions of higher education and art and music colleges. All universities are autonomous institutions, particularly in matters relating to courses. They are empowered by a Royal Charter or an Act of Parliament. As a result of the Further and Higher Education Act of 1992, the binary line separating universities and polytechnics was abolished and polytechnics were given university status (i.e., the right to award their own degrees) and took university titles. Higher Education Funding Councils were created for England, Scotland and Wales, replacing the Universities Funding Council and the Polytechnics and Colleges Funding Council. Most universities are divided into faculties that may be subdivided into departments. The Committee of Vice-Chancellors and Principals examines matters of concern to all universities. Many colleges and institutions of higher education are the result of mergers of teacher training colleges and other colleges. The Department for Education and Employment is responsible for all

universities. Students have to pay a fee of £1,000 a year. Non-university higher education institutions also provide degree courses, various non-degree courses and postgraduate qualifications. Some may offer Higher Degrees and other qualifications offered by most non-university higher education institutions are validated by external bodies such as a local university or the Open University (<http://www.usc.edu/dept/education/global/wwcu/background/United-Kingdom.htm>).

Comparative Analysis

A comparative analysis of the selected countries is made hereunder on the basis of the Human Development Index, expenditure on education, expenditure on higher education, enrolment in higher education and sources of income for higher education.

The Human Development Index

The Human Development Index (HDI) is a simple composite index based on three indicators: longevity, as measured by life expectancy at birth; educational attainment, as measured by a combination of adult literacy (two thirds weight) and combined primary, secondary and higher education enrolment ratios (one third weight), and standards of living as measured by real GDP per capita.

It measures the average achievements in basic human development in one simple composite index and produces a ranking of countries. The value of the HDI varies from 0 to 1. Countries with an HDI value of 0.800 and above are classified as countries with a high HDI. Countries with an HDI value between 0.500 and 0.799 are classified as countries with a medium HDI. Countries with an HDI value of less than 0.500 are classified as countries with a low HDI. In 1998 there were 46 countries with a high HDI, 93 with a medium HDI and 35 with a low HDI (*Human Development Report, 2000, UNDP*).

Government Expenditure on Education

The table 4.1 below shows a comparative analysis of government expenditure on education.

Table 4.1: Comparison of Expenditure on Education							
	Countries	HDI index	HDI ranking	GNP Per Cap	GNP growth rate per capita	Educ. as a % of GNP	Educ. as a % of total Govt. exp
		1998	1998	1998	1990-98	1995-97	1995-97
1	Australia	.929	4	20,640	2.7	5.5	13.5
2	Barbados	.858	38	6,610	0.7	7.2	19.0
3	Botswana	.593	122	3,070	1.4	8.6	20.6
4	Costa Rica	.797	48	2,770	2.0	5.4	22.8
5	Cyprus	.886	22	11,920	2.6	4.5	13.2
6	Hong Kong	.872	26	23,660	1.8	2.9	17.0
7	Korea	.854	31	8,600	4.1	3.7	17.5
8	Malaysia	.725	61	3,670	3.8	4.9	15.4
9	<i>Mauritius</i>	<i>.761</i>	<i>71</i>	<i>3,730</i>	<i>4.0</i>	<i>4.6</i>	<i>17.4</i>
10	Singapore	.881	24	30,170	6.0	3.0	23.4
11	Swaziland	.655	112	1,400	-0.2	5.7	18.1
12	Trinidad & Tob	.793	50	4,520	2.1	4.4	N/A
13	UK	.918	10	21,410	1.6	5.3	11.6

Source: Human Development Report 2000 (UNDP)

It is observed that:

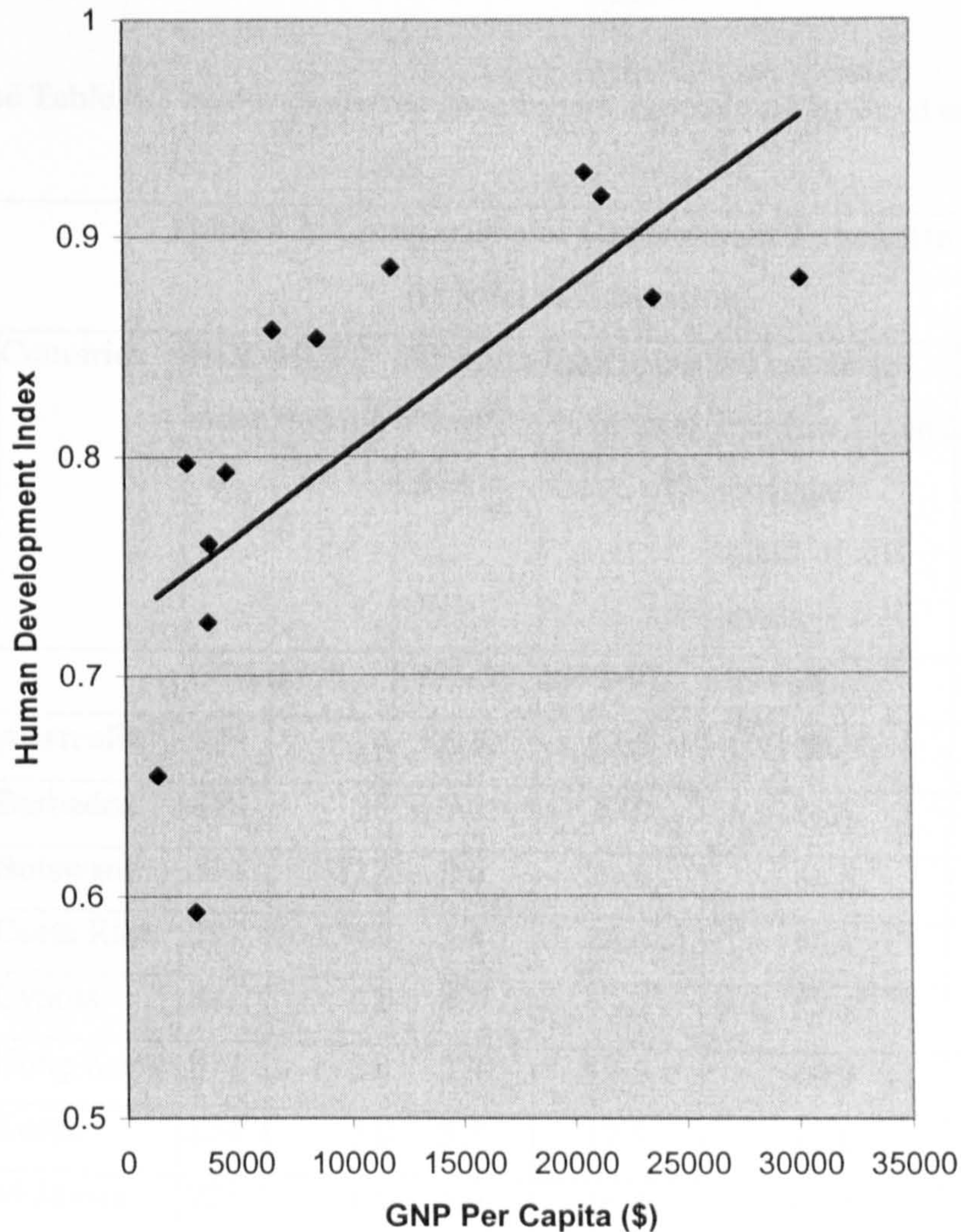
- (a) The total expenditure on education as a percentage of GNP is relatively low for Mauritius (4.6%) when compared to the other countries, except for Cyprus, Hong Kong, Korea, Singapore and Trinidad & Tobago that are lower.

- (b) The present level of government expenditure on education as a percentage of total Government expenditure is reasonable in Mauritius, when compared to the other countries, in particular to the two developed countries (Australia and the UK).
- (c) Singapore has the highest level of government expenditure on education as a percentage of total government expenditure and has the highest GNP growth rate. It has also the highest increase in GNP per capita.

Hence, this reinforces the view that there is a direct relationship between investment in education and economic development. *Denison (1967)* in his study of “Why growth rates differ” looked at differences in incomes across countries and at factors that might explain those differences. One important factor identified to account for such differences was education.

In order to further illustrate this point the correlation between GNP per Capita and the HDI of the selected countries has been worked out. The correlation coefficient is 0.72. This shows that there is a high positive correlation between GNP per capita and the HDI (further details about the interpretation of the correlation coefficient is given in Chapter 7). The following chart shows the correlation between GNP per Capita and the HDI of the selected countries.

Chart 4.1: Correlation between GNP per capita and HDI



The HDI measures average achievements in some basic dimensions of human development in a country. It does not provide a complete picture of human development and must be supplemented by other indicators. The link between economic development is neither automatic nor obvious. Two countries with the same income may have very different HDI rankings. Another two countries may have similar HDI rankings but have different incomes. However it does provide

some valuable information about human development in a country and helps to monitor progress in human development over time.

Government Expenditure by Level of Education

The Table 4.2 below shows the government expenditure by level of education.

Table 4.2: Comparison of Government Expenditure by level of Education							
	Countries	HDI index	HDI ranking	Educ. As a % of GNP	Educ. as a % of total Govt. exp	Pre primary, Primary Secondary as a % of all levels	Higher and education as a % of all levels
		1998	1998	1995-97	1995-97	1994-97	1994-97
1	Australia	.929	4	5.5	13.5	69.5	30.5
2	Barbados	.858	38	7.2	19.0	N/A	N/A
3	Botswana	.593	122	8.6	20.6	64.5	28.3
4	Costa Rica	.797	48	5.4	22.8	N/A	N/A
5	Cyprus	.886	22	4.5	13.2	87.5	6.5
6	Hong Kong	.872	26	2.9	17.0	69.9	37.1
7	Korea	.854	31	3.7	17.5	82.0	8.0
8	Malaysia	.725	61	4.9	15.4	63.3	25.5
9	<i>Mauritius</i>	<i>.761</i>	<i>71</i>	<i>4.6</i>	<i>17.4</i>	<i>67.3</i>	<i>15.0</i>
10	Singapore	.881	24	3.0	23.4	60.3	24.8
11	Swaziland	.655	112	5.7	18.1	62.9	26.6
12	Trinidad & Tobago	.793	50	4.4	N/A	73.5	13.3
13	UK	.918	10	5.3	11.6	76.3	23.7

Source: Human Development Report 2000 (UNDP)

From the above table, it is observed that:

- (a) Government expenditure on higher education is relatively low in Mauritius. There is a need to increase the proportion of the education budget allocated to this sector.
- (b) Singapore has the highest share of total government expenditure allocated to education. This reflects the high GNP per capita and its higher HDI also.

The case of Singapore, with which, as already pointed out Mauritius would like to benchmark, is very interesting as the relationship between investment in higher education, HDI and the GNP is very apparent. The amount of public funds spent on education and higher education in Mauritius also compares unfavourably with OECD countries. The OECD report *“Education at a Glance”* (OECD, 1996), comments that the level of resources provided to education has stagnated over the past 20 years and averaged 5.8% of the GNP to education. At the higher education level OECD countries devote 1.6% of their GNP to higher education, with Canada and the USA spending at least 2.4% and other countries like UK, Spain and Italy spending less than 1% of their GNP on Higher education.

Participation Rate at the Higher Education Level

Table 4.3 below shows the gross enrolment ratio in 1996 and the number of students per 100,000 inhabitants.

Table 4.3: Comparison of the participation rate at the higher education level						
	Countries	HDI index	HDI ranking	Number of higher education students per 100,000 inhabitants	Gross enrolment ratio	Years
1	Australia	.929	4	5,401	71.7	1995
2	Barbados	.858	38	2,501	28.1	1994
3	Botswana	.593	122	403	4.1	1994
4	Costa Rica	.797	48	2,119	31.9	1994
5	Cyprus	.886	22	1,069	20.0	1994
6	Hong Kong	.872	26	1,635	21.9	1993
7	Korea	.854	31	4,955	52.0	1995
8	Malaysia	.725	61	971	10.6	1994
9	<i>Mauritius</i>	<i>.761</i>	<i>71</i>	<i>564</i>	<i>6.3</i>	<i>1995</i>
10	Singapore	.881	24	2,522	33.7	1995
11	Swaziland	.655	112	630	N/A	1993
12	Trinidad & Tob	.793	50	705	7.7	1994
13	UK	.918	10	3,126	48.3	1994

Source: Human Development Report 2000 (UNDP)

Note: Gross Enrolment ratio: Total enrolment in higher education regardless of age, expressed as a percentage of the population of the five-year age-group following on from the secondary school leaving age.

From the above table, it is observed that the enrolment rate of the relevant age group is significantly low for Mauritius (6.3%) when compared to Singapore, U.K and Australia. Similarly, the number of students per 100,000 inhabitants enrolled is less than ¼ of that of Singapore and nearly 1/9 of that of Australia.

Sources of Income

Table 4.4 below shows the sources of income in publicly funded institutions.

Table 4.4: Comparison of Sources of Income					
	Countries	HDI index	HDI ranking	Government %	Others %
1	Australia	.929	4	57	43
2	Barbados	.858	38	N/A	N/A
3	Botswana	.593	122	N/A	N/A
4	Costa Rica	.797	48	N/A	N/A
5	Cyprus	.886	22	N/A	N/A
6	Hong Kong	.872	26	N/A	N/A
7	Korea	.854	31	N/A	N/A
8	Malaysia	.725	61	N/A	N/A
9	<i>Mauritius</i>	<i>.761</i>	<i>71</i>	<i>90</i>	<i>10</i>
10	Singapore	.881	24	75	25
11	Swaziland	.655	112	60	40
12	Trinidad & Tob	.793	50	N/A	N/A
13	UK	.918	10	55	45

Sources

- (a) *Government and Higher Education Relationships Across Three Continents - by A Van Vught (1994/95).*
- (b) *AVCC submission to the Review of Higher Education (1994/95).*
- (c) *HESA financial records 1996/97 English Higher Education Institutions.*

- (d) *Capacity Building and Institutional Development in Higher Education in Kenya - IIEP Research and Studies Programme (1994/95).*
- (e) *International Association of Universities (UNESCO - 1995/96).*

It is observed that:

- (a) Mauritius has the highest percentage of funding coming from the Government.
- (b) Government funding in the two African Countries is relatively low when compared to Mauritius.

Competing Funding Models

In this section an attempt will be made to analyse the different funding models that Mauritius can adopt in order to meet the challenges of an increasing access to higher education, confronted with limited resources,

With the growing demand for higher education in Mauritius, there is a need to revisit the actual funding system in the country. There are different sets of views in defining the structural adjustments in higher education funding mechanism and the extent to which each stakeholder should contribute to subsidising higher education. However, the common consensus remains that a balance must be struck between the various sources of funding. Basically, there are four principal beneficiaries of higher education, namely:

- (a) The state
- (b) The students
- (c) The employers
- (d) The institutions

Public Funding

Higher education institutions play a major role in the social, economic, scientific and cultural development of a nation. They are responsible for building an internationally competitive, knowledge-based economy, thus, laying strong grounds for State funding of university education.

In most developed countries, the State is responsible for a major share of higher education funding. In most developing countries however, governments are unable to keep pace with the expansion of higher education. Institutions must eventually have recourse to alternative sources and mechanisms of finance. According to World Bank estimates, spending in public universities throughout the developing world has declined by more than 50% over the past twenty years.

Broadly, there are five ways in which government can fund higher education institutions

- (a) The institution submits a periodic (usually annual) budget based on its estimate of the cost of its commitments to staff salaries and other essential inputs. It may bargain with the government over the percentage of this budget, which is to be met. The grants are 'earmarked' or 'hypothecated', which means that the institution must spend the funds on the items specified by the government.
- (b) The institution receives a single block grant on the grant received in the previous period plus an increment, and is free to spend this money as it wishes within very broad legal limits.
- (c) Funds are based on a formula reflecting past performance, but the higher education institution is able to spend the funds as it wishes once they are

received. The basis of most formulae is student numbers (weight by subject, level of study, etc) but, increasingly, governments are trying to include in the formula a weighting to reflect the academic performance of the students.

(d) The government buys academic services from the institution. This is similar to (c) above but funds are based on prospective future performance rather than performance in the past.

(e) The institution sells its teaching, research and consultancy services to a wide variety of different customers, students employers and public authorities.

In Mauritius, the incremental budgeting system is currently being used to allocate funds to the higher education institutions. Public funding represents about 90% of the recurrent income of the higher education institutions.

Students as Contributors

Students are the major direct beneficiaries of higher education. They are fully aware of the fact that a degree has real cash value in the market. The different ways as to how students could contribute to their education are analysed below.

Tuition Fees

The most direct way for students to contribute to their education is through tuition fees. More and more developing nations have been shifting the cost burden from the taxpayers to parents and students in the form of tuition fees. The trend towards the contribution of students to their education has led to a major increase in participation rates in higher education.

In Australia, as from 1989, the students have been contributing to their education through the Higher Education Contribution Scheme by choosing between a discounted up-front payment or an additional charge to their annual tax bill once their earnings reach a minimum threshold. In Australia, a differentiated fee is charged and in New Zealand, institutions set a fixed average tuition fee to be paid by the students (*Wagner, 1998*).

In the United Kingdom, many new undergraduate students on full time higher education courses have to make a contribution towards the cost of their tuition. The fee level has been set at £1,000 per student per year, which represents about a quarter of the average cost of tuition. Fees are means tested so that student from poorer families are exempted, or pay only a proportion.

In Africa, the introduction of tuition fees and the shift towards nearly full cost recovery on accommodation and catering seems to be widely recognised as both obligatory and reasonable. Implementation has been generally slow in Kenya and Swaziland.

In Singapore, nearly 20% of the recurrent income of the universities comes from tuition fees.

At the University of Mauritius, full time students do not pay any tuition fees, but they have to pay other charges - application, registration, library and examination fees. The total amount payable for such charges varies from Rs 3,000 to Rs 5,000 depending on the course for which the student is enrolled. The part-time students do pay tuition fees, but the actual rate paid is highly subsidised. Presently, tuition fees and other charges represent only 10% of the recurrent revenue of the University.

Graduate Tax System

Another way for students to contribute to their education is by means of a graduate tax system. The concept of a graduate tax can be described in broad terms as surtax incurred by the student on his or her income without regard to any amount individually owed. The graduate tax is but an additional charge to the students' annual tax bill once their earnings reach a minimum threshold. In a graduate tax there is no immediate relief to the Government's current cash obligation for the support of the higher education institutions or the students. The students continue to get their usual subsidies in the form of low or no tuition and perhaps living grants. However, they incur obligations for greater income tax payments. The effect is a shift in the ultimate cost burden but without an immediate change in the immediate reduction of the government's need for taxpayer or borrowed revenue.

Student Loan Schemes

Loans are being increasingly used as a means of overcoming problems related to equality of access in the face of increasing costs borne by students and families usually in the form of tuition and fees. A national student loan scheme does not exist in Mauritius. Some institutions however do provide limited educational loans facilities to students.

Employers' Contribution

Employers form part of the indirect beneficiaries of higher education. They have a vested interest in the supply of knowledgeable and skilled graduates and in lifelong learning to update the workforce.

So far in Mauritius, employers' contribution to higher education has been lagging behind. Although the employers contribute 3% of the total salary bill to the "Employers' Welfare Fund" (EWF), no visible progress has been seen to the higher education sector from this fund. Moreover, there does not seem to be any partnership between the higher education institutions and the private sector.

A lot has to be done to create a conducive environment where the higher education institutions and the private sector could work as business partners. In that respect the following could be envisaged:

- (i) Distributing part of the income from the EWF to the higher education institutions.
- (ii) Joint ventures with the University of Mauritius and private firms.
- (iii) Private enterprises could sponsor some courses/ programmes.

Institutions as Fund Generators

The common contention is that higher institutions can do a lot for themselves especially in the context of income generation. Universities can contribute to the increase of their private revenues by indulging in entrepreneurial activities. The prime aim is to achieve specific new objectives beyond the core business of teaching and research. Over the last two decades, some sophisticated income generation strategies have been developed and these are briefly described below.

Consultancy

Consultancy is a very profitable avenue for income generation. Colleges and universities are “gold mines” of knowledge and faculty members offer to share their know-how by signing consultancy contracts with companies that are looking to improve aspects of their business but do not have the internal human resources to do so. In Italy, at the Università di Trento, a corporate relations office was recently established to promote research opportunities and to provide scientific and technological consulting, and even equipment calibration and certification

services (all free of charge in the past). At the University of Mauritius, a consultancy centre has recently been set up with the following objectives:

- (a) To act as a sort of one stop shop for consultancy/ research services on the campus.
- (b) To set procedures for consultancy services and market the university facilities.
- (c) To arrive at fair distribution of income among staff involved in consultancy activities.
- (d) To enhance consultancies/research at the University.

Continuing Education Programs

The provision of training to the larger community in which they are located, rather than exclusively to the university student population, is an obvious way in which universities can combine community service with income generation. Continuing education is one field in which universities hold a genuine comparative advantage in most countries. They possess the scarce technical resources, experience in organising training programs, classroom space and related infrastructure necessary for such undertakings. In countries where universities have been slow to capitalise on their strengths in the teaching field, they now have to compete with private training firms that have appeared in the market place, which is the case in Mauritius.

Renting of Facilities / Conferences

One of the most obvious ways for universities to increase their income is by making their teaching, accommodation and restaurant facilities available for hire by the general public, particularly for conferences, exhibitions or conventions (*Blair, 1992*). Similar facilities, outside of prestigious and comparatively expensive national conference centres, are generally not available. The University of Warwick in the United Kingdom is known in Europe for its top-of-

the-line conference facilities and university accommodations, which generated in 1993/94, the equivalent of \$1.6M. In Mauritius, income from such services constitutes a negligible part of the university's total recurrent budget (approximately 0.4% of total recurrent budget).

Business Enterprise

A number of higher education institutions operate "businesses" which do not appear to develop naturally from the missions of the institutions. These include garages, hotels, grinding mills and bakeries. Quite often, these activities are initiated to meet a need within the higher education institution that has not been met by the private sector. With good expertise and advice, some higher education institutions have benefited substantially from investment in equities, estates and long term deposits, as well as business operations, unconnected to their profile. These activities already exist in developed countries and are growing in developing countries, for example in Nigeria, Ghana and Zambia (*Association of African Universities, 1991*). Eduardo Mondlane university, Mozambique, sells computers as one of such activities (*Kitaev, 1992*). Higher education institutions can therefore undertake such initiatives also to generate and supplement their funds.

Alumni Support

Alumni support is an invaluable resource for higher education institutions in many ways. Alumni financial support is another important resource and also a tangible reflection of the commitment of alumni to the institution (*Blair, 1992*). In this regard, it is important to note that the extent of alumni support reflects alumni feelings about the education they received from the institution. It expresses the willingness to give back financially to the institution. Alumni Financial support has proved to be quite successful in United States, United Kingdom and Australia. Financial contributions from alumni will depend on national economic improvements and associated growth in personal incomes. In

Mauritius, no alumni association seems to have been successful in fund generation up to now.

Summary

A comparative analysis of Mauritius with twelve selected countries has been made on the basis of selected educational and economic indicators - the Human Development Index, Expenditure on education, expenditure on higher education, enrolment in higher education and sources of income for higher education.

The total expenditure on education as a percentage of GNP is relatively low for Mauritius when compared to the other countries, except for Cyprus, Hong Kong, Korea, Singapore and Trinidad & Tobago that are lower. The present level of government expenditure on education as a percentage of total Government expenditure is reasonable in Mauritius, when compared to the other countries. Government expenditure on higher education is relatively low in Mauritius. The enrolment rate of the relevant age group is significantly low for Mauritius when compared to Singapore, U.K and Australia. Mauritius has the highest percentage of funding coming from the Government.

CHAPTER 5: PRIVATE PARTICIPATION IN THE FINANCING OF EDUCATION.

Private participation in the financing of education has attracted considerable attention recently (*Bray 1996, Mehrotra et al 1996, King 1997 and Lewin 1998*).

Private participation in the financing of education in this Chapter is taken to mean a contribution to the financing of education from stakeholders other than the government. Basically therefore, private participation in the financing of education means the financing of education by students, parents and the community.

Opinions on the desirability or otherwise of private participation in the financing of education are mixed.

It is argued that private participation exacerbates inequalities because the rich can afford payments more easily than the poor (*Bray 1999*). Since the quantity and the quality of education received by an individual is perceived as a determinant of that individual's subsequent standard of living, the rich can give their children substantial head starts in life, thus perpetuating inter-generational inequalities in society.

More so when education, or education at certain levels or of certain types is regarded as a commodity, an individual has as much right to spend his money on education as he does on any other commodity. An individual therefore has the right to decide and choose how much he would like to spend on education, at what level, what quantity and what quality of education he or she may want.

It has also been argued that investment in education benefits all stakeholders and the society as a whole by increasing the general level of human capital

contributing to economic growth and social development and hence investment by any stakeholder, be it the government, the household, the rich or the poor, will be beneficial to the economy and the society as a whole.

The stakeholders in education can be classified into four groups:

- (a) The government
- (b) The students and the parents (households) and the community
- (c) The employers
- (d) The institutions

Who Should Participate in the Financing of Education in Mauritius?

As explained above, all stakeholders derive some benefits from education, therefore all stakeholders should participate in its financing. However, the extent and the form of the participation may differ.

Government has the obligation to provide education to its people. Its financial participation therefore cannot be avoided. However, depending on its social and economic policies it may participate fully at certain levels, e.g. basic and lower levels of education and to a lesser extent at other levels, e.g. higher education.

Governments may also coerce private individuals on the ground of promoting greatest happiness of the greatest number of people. What kind of social contract would reasonable people agree to accept? The state has to be entitled to levy taxes on the better off to support those who are unable to meet even their basic needs
(Phelps, 1973, p.191)

Students, parents, households and employers also derive direct benefits from education. It is argued that the return to the students is the highest and that financial contribution on the part of the student or the family is fully justified.

A more educated and skilled workforce will increase productivity and hence raise profits of employers. It is reasonable therefore, that they should contribute to the financing of education. It could be argued that employers do contribute in the form of taxes, levies and other forms of social development in the community, however, there may be a case for a more direct contribution to the financing of education from them in view of the direct benefits they derive from a learned workforce.

Private Participation in Education in Mauritius

According to a study carried out by the University of Mauritius in 1988 (*Joynathsing et al, 1988*), the private costs of education (that is those costs falling on families as a result of their children's attendance at school) averaged Rs 309 per month per household and Rs 168 per month per student. At 1998, prices these were equivalent to Rs 633 and Rs 344 respectively. Using the 1996/97 Household Budget Survey which put the estimated number of households in Mauritius in 1996 at 250,000, the total private costs of education were Rs 158 m in 1998. This is a conservative estimate based on the findings of a study carried out more than a decade ago and it is known that since then the extent of private tuition in Mauritius has expanded significantly.

Private tuition is the main way in which households participate in the financing of education in Mauritius. Private tuition may be defined as the extra tuition or coaching which students may opt for outside the normal school hours and for which they have to pay a fee. In spite of growing criticisms levelled against private tuition, this practice has persisted and has grown rapidly in recent years. The prevalence of private tuition is deemed to be part of a self-reinforcing system attributable to a large extent to the extremely competitive environment in the education sector. It is widely believed (by parents, in particular) that classroom

teaching is insufficient for doing well in examinations and hence pupils have to take private tuition.

Given that private tuition is not free, families, on the whole, must fund it on the basis of their own resources. What then is the cost of private tuition to families? According to a study carried out on the subject by the MIE (*T R Morisson, 1997*) the average cost of extra tuition is estimated at Rs 200 per subject per month up to SC level and at Rs 250 per month per subject for HSC.

The costs of extra tuition, when viewed as a percentage of the income of families, represent a significant investment that increases as more tuition is taken. The 1997 study reveals that the percentage of income depending on the number of subjects taken as private tuition could range from 5% up to 83% (for up to five subjects at SC level and up to four subjects at HSC level). This is shown in the Tables 5.1 and 5.2 for different income groups.

Income Group	% of Income Distribution	No. of Subjects				
		1	2	3	4	5
(Rs)	(%)	(%)	(%)	(%)	(%)	(%)
<1200	1.9	>16.6	>33.3	>50	>66.6	>83.3
1200-2399	5.2	8.3-16.6	16.6-33.3	25-50	33.3-66.6	41.7-83.3
2400-5999	39.2	3.33-8.3	6.66-16.6	10-25	13.3-33.3	16.7-41.7
6000-9599	12	3.33-4.0	4.17-6.66	6.25-10	8.33-13.3	10.4-16.7
9600-14399	15.3	2.08-1.04	2.77-4.17	4.16-6.25	5.5-8.33	6.94-10.4
14400-19199	16	1.04-2.08	2.08-2.77	3.1-4.16	4.2-5.5	5.2-6.94
19200 or more	10.4	<1.04	<2.08	<3.1	<4.2	<5.2

(Source: *Morisson, pp. 159, 1997*)

Tables 5.1 and 5.2 should be read with caution as it would be very unreasonable to expect that a household to spend 83% of its income on private tuition only. In fact the income used in the study conducted by *Morisson* is 'declared' income. Many Mauritians have income from sources other than their salaries.

Income Group	% of Income Distribution	No. of Subjects			
		1	2	3	4
(Rs)	(%)	(%)	(%)	(%)	(%)
<1200	1.9	> 20.8	>41.7	>62.5	>83.3
1200-2399	5.2	10.4-20.8	20.8-41.7	31.3-62.5	41.6-83.3
2400-5999	39.2	4.2-10.4	8.3-20.8	12.5-31.3	16.7-41.6
6000-9599	12	2.6- 4.2	5.2-8.3	7.8-12.5	10.4-16.7
9600-14399	15.3	1.7-2.6	3.5-5.2	5.2-7.8	6.9-10.4
14400-19199	16	1.3-1.7	2.6-3.5	3.9-5.2	5.2-6.9
19200 or more	10.4	<1.3	<2.6	<3.9	<5.2

(Source: *Morisson, pp. 160, 1997*)

According to the studies carried out by *Morisson (1997)*, the majority of students in secondary schools take private tuition. 84% of the students take 2 to 4 hours of tuition per week and pay a minimum of Rs 1,000 per month. Most families have more than one child taking private tuition. The relative burden of the cost of extra tuition is higher on those families with least ability to pay.

Given the fact that almost all students participate in extra tuition, it can be argued that extra tuition is not, in practice, an addition to the basic education service. It forms an integral part of the provision of education in Mauritius. Seen in this perspective, it can be argued that extra tuition represents a form of regressive taxation and as such is inherently unfair and serves to reinforce basic inequalities in society.

The average unit cost at the primary school level in 1999 was Rs 800 per annum and that of the secondary school level varied between Rs 8,000 to Rs 22,000 per annum (Chapter 2). The cost of private tuition for only one subject at the SC level was Rs 2,400 per annum (Rs 200 per month). This shows that the parental willingness to pay for education for one subject at the SC level is 3 times what the government spends on one student at the primary school level. At the secondary school level the comparison of unit cost has been made with cost of private tuition on the basis of 5 subjects at the SC level (costing Rs 12,000 per annum – Rs 200 per subject for 5 subjects per month) and 4 subjects at the HSC level (costing Rs 12,000 per annum – Rs 250 per subject for 4 subjects per month). This shows that the parental willingness to pay for education varies from 0.55 to 1.5 times of what government spends on one student at the secondary school level.

According to another study conducted under the auspices of the Association for the Development of Education in Africa and the Council for the Development of Social Science Research in Africa, the private costs of education in Mauritius were estimated at more than 10% of the government's recurrent outlay on education (*Suddhoo et al, 2001, The Financing and cost of Education in Mauritius, ADEA & CODESRIA*).

From the above it is clear that households do contribute to the financing of education in Mauritius. The figures from the 1997 study on private tuition reveal that Mauritians value education and that some may be prepared to spend a substantial amount of their income on education in terms of private tuition.

At What Level of Education is Private Participation most Warranted?

The international shift in opinion on appropriate policies for educational financing provides an indication of the level of education at which private participation is most warranted.

During the first four decades after the end of the Second World War, the dominant feature of international pronouncements was that public education should be free of charge, especially at the level of basic education. Article 26 of the 1948 United Nations Declaration of Human Rights stated that:

“Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages”.

Likewise, Principle 7 of the 1959 Declaration of the Rights of the Child stated that:

“The child is entitled to receive education which shall be free and compulsory, at least in the early stages”.

And Article 13 of the 1966 International Covenant on Economic, Social and Cultural Rights declared that:

- “ (a) Primary education shall be compulsory and available free to all.*
- (b) Secondary education in its different forms shall be made generally available and accessible to all by every appropriate means, and in particular by the progressive introduction of free education.*
- (c) Higher education shall be made equally accessible to all, on the basis of capacity, by every appropriate means, and particularly by the progressive introduction of free education”.*

However, general perceptions are now much more tolerant of the notion of cost sharing, particularly in higher education. This is the case even though a considerable body of evidence shows that fee-free education, far from promoting equity, is likely to exacerbate inequities because the proportion of students from rich families attending higher education institutions (and thus receiving public

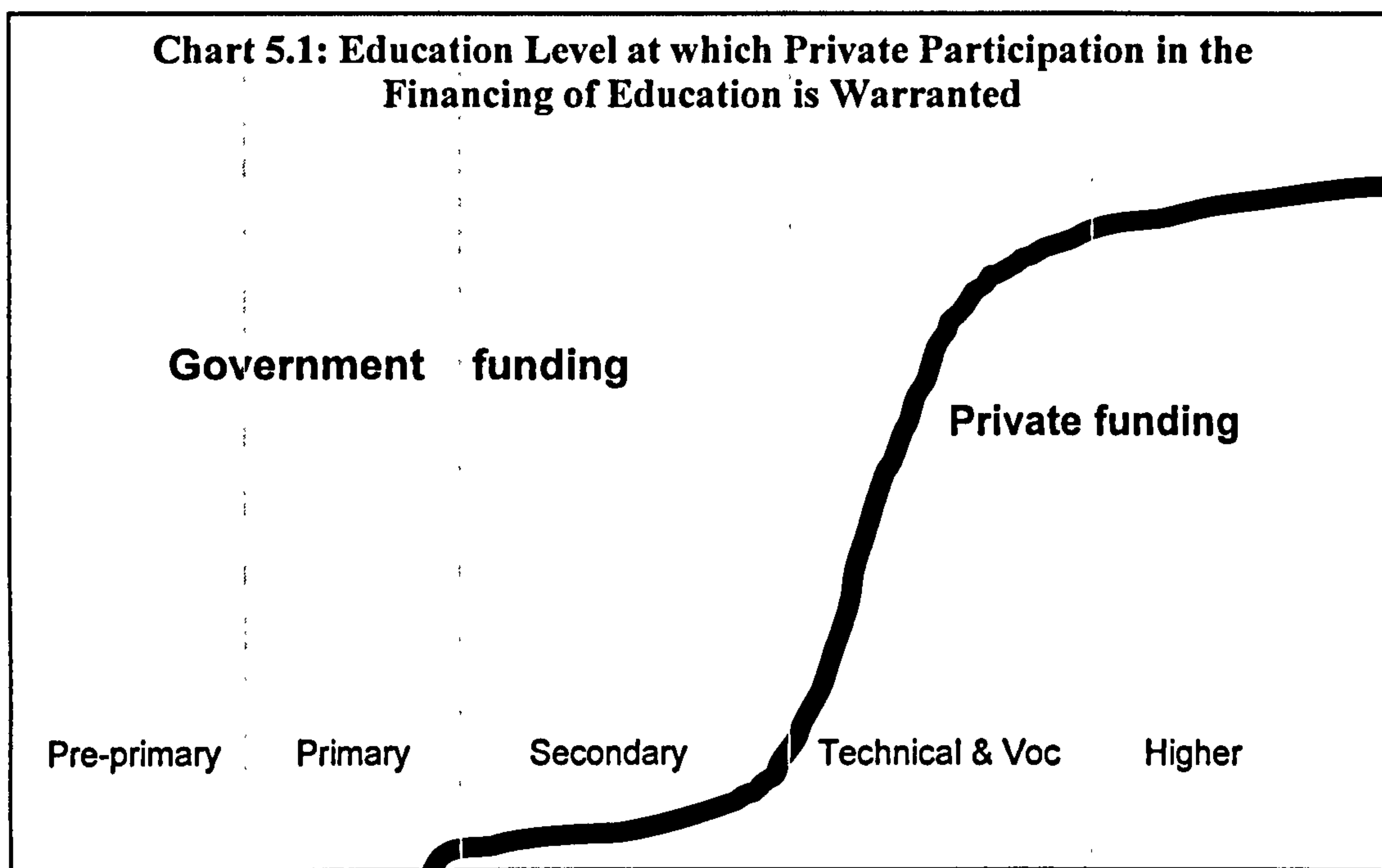
subsidies) is usually much greater than the proportion of students from poor families. The current dominant international view is that public institutions of higher education should charge at least some fees, but that the needs of the poor should be protected through grants and perhaps loans of various kinds (*Albrecht and Zideman, 1995; Tilak, 1997*).

At the primary level, fee charging in public education is more difficult to justify. Most governments are keen to achieve universal primary education, and are therefore anxious to avoid measures, which might obstruct enrolment and attendance. Although most governments would like to be able to provide fee-free primary education - and some even enshrine this in their constitutions - in many countries the practical realities of making ends meet require at least some contribution from households and communities.

Reflecting these changing perceptions the Declaration of the 1990 World Conference on Education for All (WCEFA) did not include a statement that schooling should be free of charge. Instead, the Final Report of the Conference (*WCEFA, 1990a, p. 31*) included open discussion of fees; and Article 7 of the Declaration (*WCEFA, 1990b, p.7*) stressed the importance of partnerships:

“National, regional, and local educational authorities have a unique obligation to provide basic education for all, but they cannot be expected to supply every human, financial or organisational requirement for this task. New and revitalised partnerships at all levels will be necessary including partnerships between government and non-government organisations, the private sector, local communities, religious groups and families”.

On the basis of the above, the level at which private participation in the financing of education is warranted may be summarized in the following figure:



With its obligation to provide basic literacy and numeracy skills, government should participate fully in the funding of pre-primary and primary education. At the secondary level, some contribution from the household and the community can be justified. At the technical and vocational and the higher education levels, however, in view of the substantial returns accruing to students after their graduation, a higher contribution is fully justified. The government is responsible for the whole education system. It provides the necessary framework and it is appropriate that it contributes partly at the higher education level also.

Summary

There has been a lot of debate on private participation in the financing of education recently. It is argued that private participation exacerbates inequalities because the rich can afford payments more easily than the poor. Although this is recognised, it cannot be avoided. More so when education is regarded as a

commodity, and an individual has as much right to spend his money on education as he does on any other commodity.

It has also been argued that investment in education benefits all stakeholders and the society as a whole by increasing the general level of human capital contributing to economic growth and social development and hence investment by any stakeholder, be it the government, the household, the rich or the poor, will be beneficial to the economy and the society as a whole. Government has been a major funder of education in many countries for years. With increasing demand for education on the one hand and competing demands from other sectors of the economy for public funds on the other, the capability of the government to continue financing education on the present scale is questionable. The costs of extra tuition, when viewed as a percentage of the income of families, represent a significant investment that increases as more tuition is taken. The 1997 study reveals that the percentage of income depending on the number of subjects taken as private tuition could range from 5% up to 83% (for up to five subjects at SC level and up to four subjects at HSC level).

The private costs of education in Mauritius were estimated at more than 10% of the government's recurrent outlay on education. Households do contribute to the financing of education in Mauritius. The figures from the 1997 study on private tuition reveal that Mauritians value education and that some may be prepared to spend a substantial amount of their income on education in terms of private tuition.

The international shift in opinion on appropriate policies for educational financing provides an indication of the level of education at which private participation is most warranted. With its obligation to provide basic literacy and numeracy skills, the government should participate fully in the funding of pre-primary and primary education. At the secondary level, some contribution from the household and the community can be justified. At the technical and vocational and the higher education levels, however, in view of the substantial returns accruing to students

after their graduation, a higher contribution is fully justified. However in view of the fact that government should still be responsible for education and should provide the framework for education, it is appropriate that they contribute partly at that level also.

CHAPTER 6: PROJECTED DEMAND, SUPPLY AND COST OF HIGHER EDUCATION IN MAURITIUS.

In this chapter, a projection of the demand for and the supply of higher education in Mauritius over the next ten years is made. Based on that projection an estimate of the cost of higher education up to the year 2010 is then made with a view to testing if the government will be able to financially sustain the sector.

Demand for Higher Education

One of the best dictums on the topic of human resource development is *H.G. Wells'* assertion that "*civilisation is a race between education and catastrophe*". The vicious circle of poverty and under development is, of course, not as simplistic as the famous quotation of Wells, but a number of compelling arguments exist which favour a development strategy emphasising investment in human capital through educational programmes. These include the following:

- (a) People everywhere believe that education is beneficial to themselves and their children (*Gilles et al, 1992*) and hence demand for education will always be on the increase;
- (b) Education and income are highly correlated at both the individual and the societal level. As a general rule, persons with more education obtain higher levels of income, especially over time (*Blaug, 1973*).
- (c) One of the most important factors in the process of economic growth is related to the improvement of the human capital through improved training and education amongst other things;
- (d) The rates of return on education are generally high, especially in developing countries (*Psacharopolous, 1995*).

- (e) Higher education is believed to confer other benefits such as civic, status, democratic, success, environment and identity.
- (f) The emergence of mass education, the changing nature of the labour force and changes in people's aspirations have driven policy makers to adopt enrolment targets which are very high by historical standards; and
- (g) The increasing emphasis to meet changing educational and manpower requirements related to the emergence of rapidly changing technologies, which is impacting on the nature of an increasing proportion of jobs.

On the basis of the above, it is clear that the demand for higher education will grow rapidly. This growing demand will come basically from four main areas namely,

- (a) Increase in population
- (b) School leavers,
- (c) Postgraduates and
- (d) Employers and mature-aged learners.

The demand for higher education will increase with an increase in population. Based on an estimated annual average growth rate of 0.85% (*Mauritius Vision 2020 Forecast*) over the period 1998-2010, the total population of Mauritius is expected to increase to 1,276,000 by the year 2010.

There are at present 128,000 people aged between 19 and 24 years. This represents 11% of the total population of the country. On the basis of population projection made by the Central Statistical Office, Mauritius, there will be 140,000 people aged between 19 to 24 years in Mauritius in the year 2010 – an increase of 12,000.

Table 6.1 below shows the forecast population of Mauritius, for the period 1999 to 2010, together with that of age group 19 to 24 years.

Table 6.1 Forecasted Population of Mauritius		
Year (mid)	Forecast Population (000's)	Relevant Age Group 19-24 (000's)
1999	1.162 (Actual)	128 (Actual)
2000	1.172	129
2001	1.182	130
2002	1.192	131
2003	1.202	132
2004	1.212	133
2005	1.222	134
2006	1.233	136
2007	1.243	137
2008	1.254	138
2009	1.265	139
2010	1.276	140

Source: Central Statistical Office, Mauritius

In 1999 there were 15,317 Mauritians undertaking higher education studies (*Participation in Tertiary Education, Tertiary Education Commission, 1999*). This represented 12% of the population aged 19 to 24 years.

This level of participation in higher education is considered to be low when compared with other countries in similar stages of development as Mauritius. If Mauritius wants to position itself as a knowledge-based society, it will have to increase its participation rate in higher education.

The *Tertiary Education White Paper (1999)*, makes proposal for a 30% enrolment rate in the higher education sector by the year 2010. With this targeted higher education enrolment rate (of 30%) there would be a student enrolment of 42000 in the year 2010 - an increase of 174% over the present student enrolment.

With the expected increase in secondary enrolment (which for 1999 was 60% only), there will be a higher demand for higher education in the years to come. In fact, government's intention is to increase enrolment at secondary level by having compulsory 11-year schooling, that is, schooling up to the school certificate level. This will automatically increase the demand for higher education subsequently (*Action Plan for a New Education System of Education in Mauritius, Ministry of Education, March 1998; Ending the Rat Race in Primary Education and Breaking the Admission Bottleneck at the Secondary Level – The Way Forward, Ministry of Education and Scientific Research, May 2001*). Although the target enrolment rate for higher education is 30% for the year 2010, the combined effect of the increase in the population age group 19-24 years and the increase in the number of students coming out of the secondary school system will increase pressure on demand for higher education.

The industrial sector will drive demand further up as a consequence of continuous upgrading of knowledge and skills to remain competitive.

The Supply of Higher Education

In Chapter 3, Table 3.2, the relationship between application (demand) and intake (supply) at the UoM was presented. It was observed that the annual average increase in the total number of qualified applicants to the University of Mauritius is 16% over the period 1993/94 to 1999/2000. The proportion of qualified applications, out of the total, hovers around 85% for the period. Out of the total number of applicants, less than 50%, on average, are admitted to the UoM.

The MIE enrolls in-service teachers only. There are also very limited places at the polytechnics, the MGI, the MCA and the IVTB. It is expected that with the setting up of the UTM the pressure on enrolment in higher education will ease up a little.

It is observed, therefore that there is a large proportion of unmet demands at the higher education level in Mauritius.

In Table 6.2 an attempt has been made to estimate the enrolment in the higher education sector in Mauritius.

Table 6.2: Projected enrolment at higher education level 1999-2010													
Institutions	% Inc. p.a	1999 ⁽¹⁾	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
UoM	15-5	4266	4906	5642	6488	6812	7153	7511	7886	8281	8695	9129	9586
UTM			300	600	1200	2400	3600	4800	6000	6300	6615	6946	7293
MIE	5	2309	2424	2546	2673	2807	2947	3094	3249	3411	3582	3761	3949
MGI	5	436	458	481	505	530	556	584	613	644	676	710	746
MCA	15	127	146	168	193	222	255	294	338	388	447	514	591
POLY	10	900	990	1089	1198	1318	1449	1594	1754	1929	2122	2334	2568
IVTB/MIH	5	205	215	226	237	249	262	275	288	303	318	334	351
DE	5	4650	4883	5127	5383	5652	5935	6231	6543	6870	7214	7574	7953
OV.SEAS	5	2424	2545	2672	2806	2946	3094	3248	3411	3581	3760	3948	4146
TOTAL ⁽²⁾		15317	16867	18550	20683	22937	25251	27632	30083	31708	33429	35251	37182
TOTAL TEI& POLY		8038	9224	10525	12257	14089	15961	17877	19840	20954	22137	23395	24732

(1): Participation in Tertiary Education, Tertiary Education Commission, 2000

(2): On the basis of the projections made the total enrolment will come to 37,182 in 2010. Some 5,000 additional seats will have to be created to reach the target of 30% enrolment rate in the higher education sector and it is envisaged that this would be done by the government through increasing capacity of existing institutions and the creation of new institutions (Tertiary Education White Paper (1999)).

NOTES TO TABLE 6.2

1. *The student enrolment at University of Mauritius is expected to have an annual growth rate of about 15% (as in previous years) for the next 3 years after which it will reach its maximum capacity (unless new space facilities are provided) then the growth rate might drop to about 5%.*
2. *The UTM will have its first intake in the year 2001. It is expected that after 5 years the enrolment will be 6000 after which there will be a growth rate of about 5% (UTM Development Plan, 2000).*
3. *The student population at the MIE is already considered to be on the high side. It is expected that the growth rate will be relatively low; i.e. approximately 5%.*
4. *The student population at MGI has not increased significantly over the past years. It is expected that the annual growth rate will be about 5% for the period 2000-2010.*
5. *The MCA has been so far mainly engaged in production of educational films/documentaries. It has, since recently started dispensing distance education courses in collaboration with overseas institutions (e.g. Napier University, Indira Gandhi National Open University, etc.). This is expected to increase substantially in the coming years. With distance education becoming increasingly popular and the need for lifelong and continuous learning, the annual growth rate in the enrolment at the MCA can be the same as at the UoM at present, i.e. 15%.*
6. *The polytechnics are relatively new. They are expected to continue having a growth rate of 10%.*

7. *An annual growth rate of 5% has been taken for IVTB; this is in line with the growth rate in past years.*
8. *With the increasing cost of overseas education and the depreciation of the Mauritian rupee, it is expected that the growth rate in the medium to long term will be at a rate of 5%. Similarly, with the setting up of the UTM, the demand for Distance Education will increase at a relatively low rate, i.e., approximately 5%.*

From Table 6.2, it is observed that with the existing higher education sector structure, enrolment in higher education will increase from 15,317 in 1999 to 37,182 in 2010. The 37,182 students enrolled will represent a participation rate of only 26.6% in the year 2010. This is still low compared to the present enrolment rate in other countries like Taiwan (31%), Singapore (39%) and Korea (48%). Even with the setting up of the UTM and growth in other institutions, the enrolment is expected to increase rapidly until the year 2005, when participation rate will be nearly 20%. After that, with limited space facilities, the growth rate will be very slow, reaching 26.6% in 2010.

In order to increase the participation rate to 30% (42,000 students) of the relevant age group, the supply side of higher education must increase by some 5,000 places. This could be achieved either by increasing capacity of the existing institutions and/ or by the establishment of new institutions. Both of these courses of actions would require a very significant sum of money to be injected in the education sector.

Unit Cost per student

In order to assess the magnitude of funds that will be required in the future, it is important to know the cost per student. An analysis of the cost per student at the University of Mauritius for the years 1995 to 2000 is shown in Table 6.3 below.

Table 6.3: Unit Cost per Student – University of Mauritius			
Years	Total Enrolment *	Total Expenditure Rs'000	Cost per Student
1995/1996	2,336	136,442	58,410
1996/1997	2,481	168,014	67,720
1997/1998	3,106	181,486	58,430
1998/1999	3,731	214,752	57,560
1999/2000	4,266	237,000	55,555

Source : UOM Annual Report ; UOM Budget

** Excluding student enrolled on courses run at MIE and MGI*

It can be noted that the average unit cost per student at the University has been decreasing over the past five years, except in 1996/97. This reduction in cost per student is the combined effect of a nearly stagnating government contribution and an expanding demand for higher education resulting in economies of scale in the system.

Projected Cost of Higher Education in Mauritius in 2010

Using the projected figures for the student population in 2010 (Table 6.2) and the unit cost per student (Table 6.3 for the UoM (rounded to Rs 56,000) and estimates for other higher education institutions as explained in the notes to the table below), an estimate of the cost of higher education in 2010 has been made in Table 6.4. The assumptions made in arriving at the estimates are stated after the Table.

In the projected cost figure only the higher education institutions and Polytechnics have been taken, as the other institutions are not directly funded under the budget of the Ministry of Education.

Table 6.4: Projected cost of higher education in 2010					
Institutions	Number of students		unit cost	Total Cost	
	1999	2010		1999	1999
UoM	4,266	9,586	56,000	237,000,000	917,937,056
UTM		7,293	60,000	0	748,265,648
MIE	2,309	3,949	37,000	85,000,000	249,864,212
MGI	436	746	137,000	102,000,000	174,697,004
MCA	127	591	87,000	49,000,000	87,901,306
Polytechnics	900	2,568	75,000	70,000,000	329,320,996
New institutions		5,000	60,000	0	513,000,000
Scholarships				68,500,000	117,135,000
TEC				22,000,000	37,620,000
Total	8,038	29,732		633,500,000	3,175,741,221
% Coming from Govt				90%	90%
Govt Exp on Higher Education				568,500,000	2,858,167,099
Total Exp on Education				3,669,200,000	6,274,332,000
Govt Exp on Higher Ed as % of Total Exp				15%	46%
GNP at Factor Cost				106,904,000,000	194,565,280,000
Govt Exp on Higher Ed as a % of GNP				0.53%	1.47%

Sources:

- (a) *Revised Estimates of Higher Education Institutions & Polytechnics for 1999/2000*
- (b) *Recurrent Budget 1999/2000*
- (c) *National Account Estimates, Ministry of Economic Development*
- (d) *Education statistics MoESR*

NOTES TO TABLE 6.4

1. *The revised estimate for 1999/2000 (Figures from TEC) has been used to calculate the cost per student, except for UTM, and new institutions (see notes 2 and 3 below).*
2. *The revised total recurrent expenditure for MCA and MGI are Rs 49 m and Rs102 m respectively. However, 80% of the cost at MCA is for development of programme and only 20% is for higher education. Similarly, only 60% of the recurrent expenditure at MGI is for the higher education sector and the remaining 40% is for the Secondary School and the Gandhian Basic School. The cost per student is based on the related cost for higher education only.*
3. *As mentioned earlier, to reach the forecast participation rate of 30%, either the infrastructure of the existing institutions could be increased or new institutions could be created. However, for simplicity of the analysis it is assumed that new institutions will be created and that the cost per student will be Rs60,000. A similar cost per student has been used for UTM.*
4. *Inflation has been estimated at 5% per annum over the period 1999-2010*
5. *Government grant in 2010 represents 90% of total cost for the sector, i.e. the same proportion as that in 1999.*
6. *Government Expenditure on education for the year 2009/10 is based on an estimated annual growth rate of 5%, which is more or less the same real growth rate for the past five years.*
7. *The GNP figure at Factor Cost is an estimated figure based on an annual growth rate of 5.6% (per Vision 2020 estimates).*

An analysis of Table 6.4 reveals that if the target rate of enrolment of 30% has to be achieved in 2010, the proportion of government expenditure allocated to the higher education sector as a percentage of the total expenditure on education would have to increase from 15% to 46% in 2010. Government expenditure on higher education as a percentage of GNP will have to increase from 0.53% to 1.47% in the year 2010 to meet the projected increase in access.

These increases in the expenditure on the higher education sector and in the share of the higher education sector expenditure out of the total government expenditure on higher education and out of the GNP are substantial. It would be very difficult for the government to sustain such increases.

Future government spending in the sector will reflect to some extent the trend in government expenditure over the past years. The trend in government spending in the sector for the past five years was shown in Table 3.1 and illustrated graphically in Chart 3.1. It was observed that government expenditure on education as a percentage of the total government expenditure has increased by only one percentage point over the past five years. The government expenditure on higher education as a percentage of total expenditure on education has remained almost constant over the past five years at 16%. Moreover government expenditure on higher education as a percentage of GNP has remained stagnant over the past five years (0.53%).

The government has announced many reforms recently in the primary and secondary education sectors. These reforms will require a significant amount of funds and hence it is less likely that the share allocated to the higher education sector would increase significantly in the next decade.

The government has on numerous occasions declared its intention to maintain the welfare state in Mauritius. This means that many basic necessities and other facilities will continue to be either free of charge or heavily subsidised. Pressures have already started to come from other sectors of the economy,

such as health, housing and social security that will compete with the education sector for public funds. It will therefore be difficult for the government to increase its expenditure on the higher education sector.

From the above analysis, it is less likely that all the additional funding required to increase access in the higher education sector would come from the government. Therefore, any increase in expenditure in the higher education sector must come from sources other than government.

The questions that arise are “How much government should contribute?” and “How much should other stake holders contribute?”

Summary

In this chapter, a projection of the demand for and of the supply of higher education in Mauritius up to the year 2010 has been made. Based on that projection an estimate of the cost of higher education up to the year 2010 is then made with a view to see how far the government would be able to financially sustain the sector.

In general people believe that education is beneficial to themselves and their children. Education and income are highly correlated at both the individual and the societal level. As a general rule, persons with more education obtain higher levels of income, especially over time. Moreover, the rates of return on education are generally high, especially in developing countries where higher education is believed to confer other benefits such as civic, status, democratic, success, environment and identity.

The demand for higher education will grow rapidly. This growing demand will come basically from four main areas namely,

- Increase in population
- School leavers,
- Postgraduates and
- Employers and mature-aged learners.

With a targeted higher education enrolment rate of 30% of the relevant aged group, there would be a student enrolment of 42000 in the year 2010. That is an increase of 174% over the present student enrolment.

It is observed, therefore that there are a large proportion of unmet demands at the higher education level in Mauritius.

To increase the participation rate to 30% (42,000 students) of the relevant age group, the supply side of higher education must increase by some 5000 places.

This would require substantial amounts of funds to be injected in the education sector. The proportion of government expenditure allocated to the higher education sector as a percentage of the total expenditure on education would have to increase from 15% to 46 % in 2010. Government expenditure on higher education as a % of GNP will have to increase from 0.53% to 1.47% in the year 2010 to meet the projected increase in access rate. It would be very difficult for the government to sustain such increases.

Furthermore being given that Mauritius is a welfare state, where many basic necessities are provided by the government either free of charge or are heavily subsidised, it might be difficult for the government to increase its expenditure to the education sector. Pressure has already started to come from other sectors, such as health, housing and social security that will compete with the education sector for public funds. It is less likely that all the additional funding, required to increase access in the higher education sector, would come from the government. Therefore, any increase in expenditure in the

higher education sector must come from sources other than government as well.

The questions that arise are “How much government should contribute?” and “How much should other stake holders contribute?”

CHAPTER 7: WILLINGNESS TO PAY FOR HIGHER EDUCATION IN MAURITIUS

The Survey

In order to determine the willingness to pay for Higher education in Mauritius a survey was carried out among students in the higher education institutions. Although some work has been done on willingness to pay for primary and secondary education (*Morisson, 1997*), no study has been carried out to determine the willingness to pay for higher education in Mauritius. A questionnaire (Appendix II) was designed to capture data, inter-alia, on the following:

1. Student profile.
2. Course followed.
3. Household income.
4. Constraints faced by students.
5. Expected income after graduation.
6. Actual expenditure on course followed.
7. Willingness to contribute to higher education.
8. Impact of payment on desire to pursue higher studies.
9. Preferred mode of payment.
10. Expected improvement as a result of payment of fees.

In addition to the survey, interviews were conducted with senior persons in the higher education sector to have their views mainly on funding and cost sharing with students in the higher education sector in Mauritius.

Objectives of the Survey

The willingness to pay for higher education in Mauritius survey has been carried out to evaluate the opinion of Mauritian students presently involved in higher education on their willingness to contribute to the cost of their higher

studies, the share they would be willing to contribute and the impact of cost sharing on their desire to pursue higher studies.

The major objectives of the survey were to:

- (a) Estimate the demand for higher education in Mauritius.
- (b) Assess the willingness to pay for higher studies among Mauritian students.
- (c) Determine the preferred mode of paying the proposed annual fees.
- (d) Examine whether the introduction of fees at the higher education level would discourage students from pursuing further studies.
- (e) Compare the preference of students on studying either locally or abroad in the event that tuition fees are introduced in Mauritius.
- (f) Evaluate the opinion of students on how the financial contribution would improve higher studies in the country.

Sampling

The desired and the defined population

The targeted population of the survey constituted all the students enrolled in higher studies in the publicly funded higher education institutions in Mauritius during the year 1999. This comprised 5282 students in all. Enrolment at postgraduate level, degree level and diploma level was 314, 4016 and 952 students respectively. Students already enrolled in the higher education institutions and their parents are in a better position to evaluate their

willingness to pay for higher education. The collection of data from the entire population or universe would be quite cumbersome and not necessary. A sample has been used as it is believed that the general behaviour of the mass population can be predicted from the sample. Stratified sampling was found to be the most appropriate for this study as it attempts to design a more efficient sample than one obtained from just random sampling. The stratified random sampling ensures that the sample will enable students from all the strata – institutions, levels of study and part time and full time students – to be included in the study.

The enrolment of students involved in higher education in the various higher education institutions was established, the sampling fraction was 9.5% (500 students), the sampling units were the students and the level at which they were enrolled represented the strata. Different cohorts of students were selected from the UoM and the polytechnics so as to cover students' various economic backgrounds. Proportional allocation of the sample strata ensured that the ratio of the size of each stratum to the sample size was approximately equal to the sampling fraction. In other words, the sample strata was accordingly worked out to reflect the specific number of students enrolled at different levels of the higher education system. This is shown in the following table:

Table 7.1: The desired and the defined population for the survey				
Level of Study (Strata)	Population <i>(No. of students involved in higher studies)*</i>		Sample Size <i>(No. of questionnaires)</i>	
	Count	%	Count	%
H. Degree (Masters, MPhil and PhD)	314	6	25	5
Degree	4,016	76	400	80
Diploma	952	18	75	15
Total	5,282	100	500	100

* *Participation in Tertiary Education (1999), Tertiary Education Commission.*

Data Collection

The designed questionnaire (Annex II) was piloted with 25 students. The feedback from the piloting of the questionnaires was very useful and was used to fine-tune the instrument for the study. The questionnaires were given to different cohorts of students and they were requested to respond to the questions therein and to return them to the investigator in sealed envelopes all of which were self addressed to the investigator with prepaid postage stamps affixed on them. The assistance of the academic staff was sought for the distribution of the questionnaires and also for following up with the students.

Data Coding and Entry

Out of the 500 questionnaires issued, 398 duly filled-in were returned. This represented a 79.6 % response rate. After an initial consistency check, the questionnaires were coded and data entered using the Excel Software. A database on the Excel software was produced for analysis.

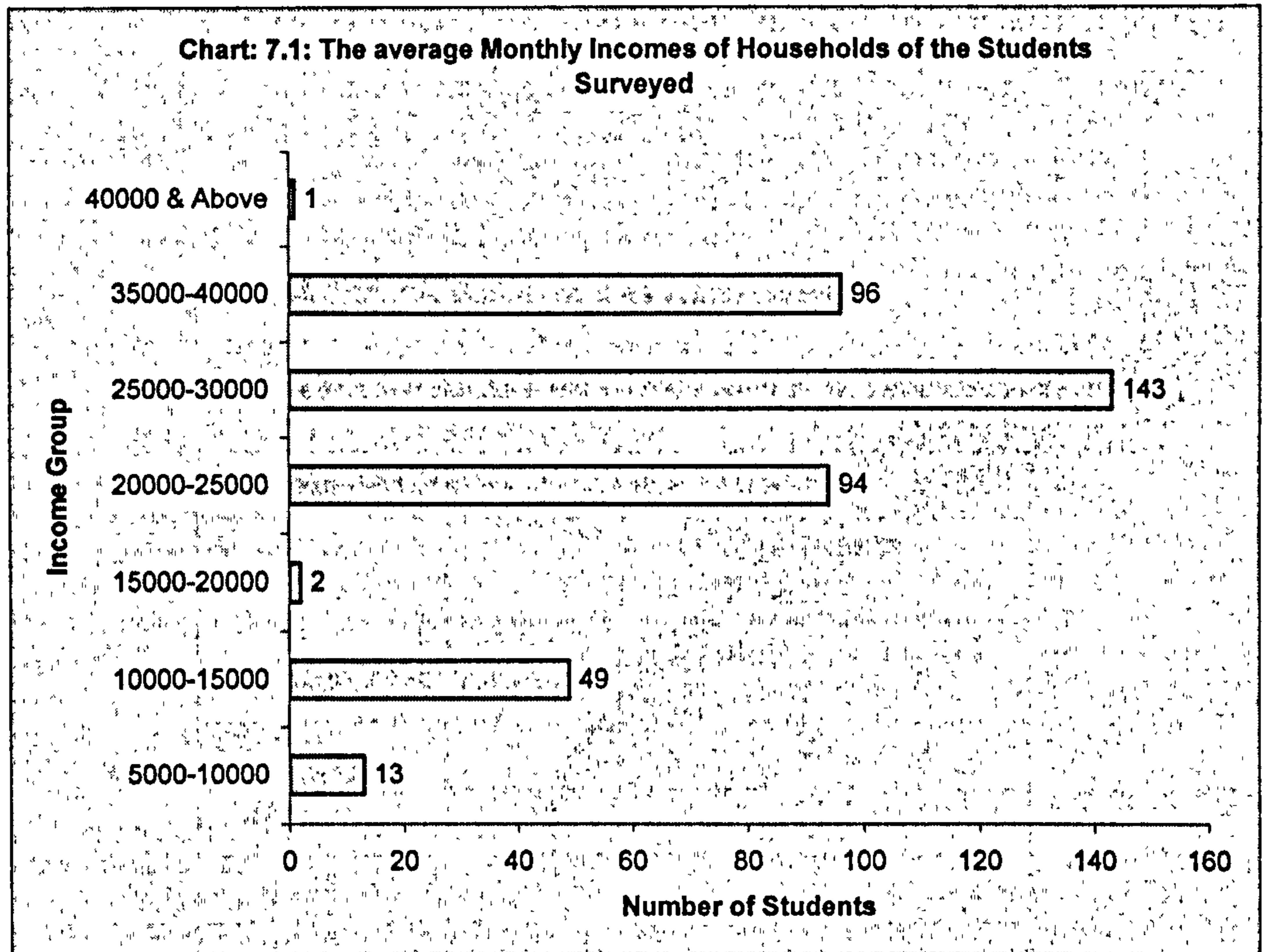
Survey Analysis

1. Out of the 398 survey forms returned, 215 (54%) were from male students and 183 (46%) were from female students.
2. Out of the 398 students surveyed 227 (57%) were from urban areas and 171 (43%) were from rural areas.
3. Out of the 398 students surveyed 27 (7%) were from the Polytechnics and 371 (93%) were from the UoM, the MIE and the MGI.

The average monthly incomes of the households of the students surveyed were as shown in Table 7.2.

Table 7.2: The average monthly incomes of the households of the students surveyed					
Income level	Average monthly Income	Number of Students			
		Male	Female	Total	
Low	Less than 5,000	0	0	0	
	5,000-10,000	6	7	13	13
Middle	10,000-15,000	23	26	49	
	15,000-20,000	1	1	2	51
High	20,000-25,000	58	36	94	
	25,000-30,000	69	74	143	
	30,000-35,000	0	0	0	
	35,000-40,000	58	38	96	
	More than 40,000		1	1	334
Total		215	183	398	398

This is shown in the Chart 7.1.



It is observed that on the basis of the classification of income into three income bands, high (more than 20,000), middle (between 10,000 and 20,000) and low (less than 10,000);

- (a) Out of the 398 students surveyed, 334 (83.9%) are from households which are in the high income bracket;
- (b) Out of the 398 students surveyed, 51 (12.8%) are from households which are in the middle income bracket;
- (c) Out of the 398 students surveyed, 13 (3.3%) are from households which are in the low income bracket;

It is interesting to note that even with 90% government funding of higher education, 89.6% of the students following higher education level courses in Mauritius come from the high-income bracket. This can be explained by the fact that access to higher education is limited. Students therefore, have to compete to have a seat in the different higher educational institutions and only the best-qualified applicants get admission. It is believed that, generally, the best qualified applicants come from the households in the high income bracket

as they would have a higher standard of living, can afford private tuition and have access to all necessary educational support including pedagogical materials.

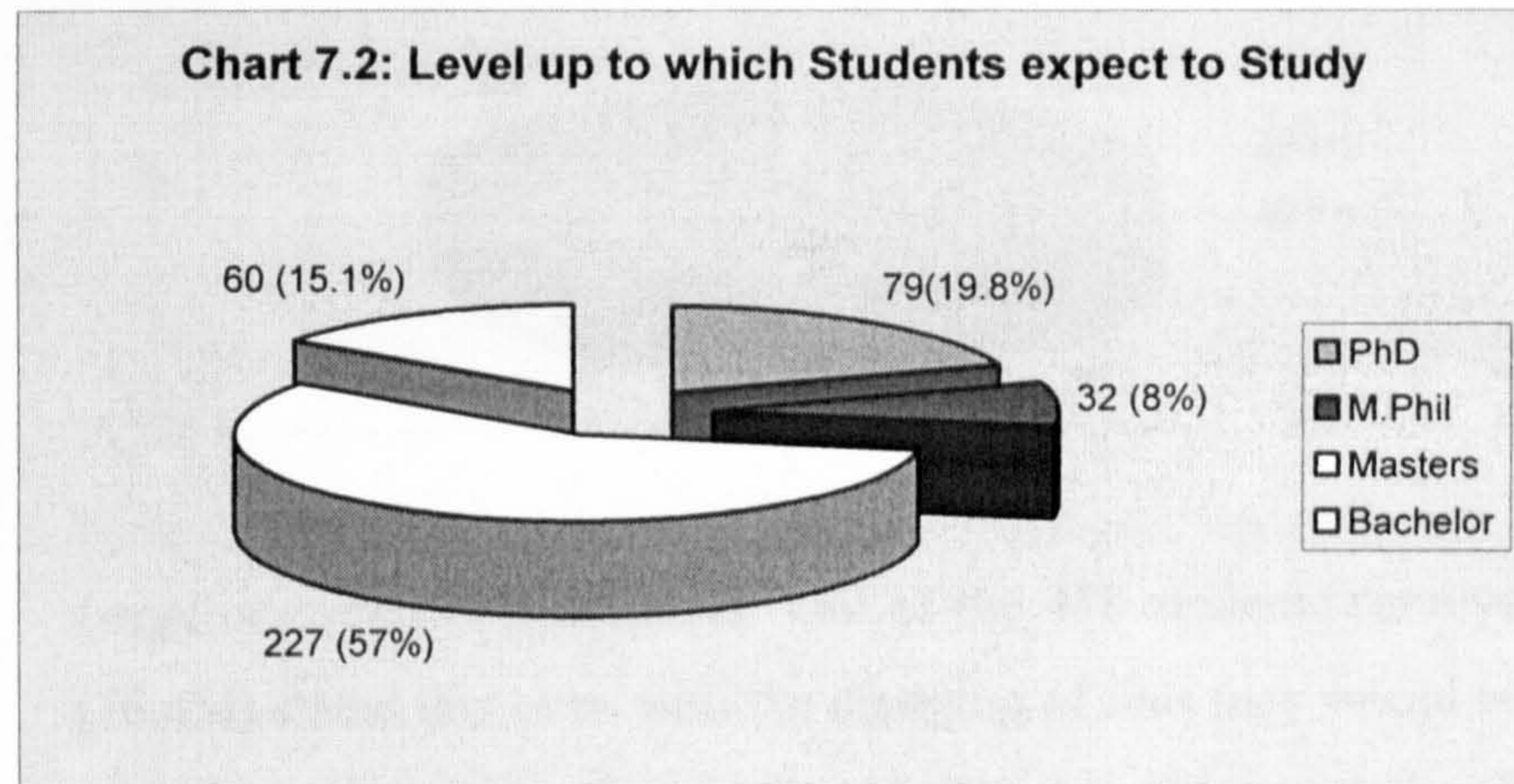
4. *Courses of study:* The students surveyed were studying for the following courses:

Courses	Number of students		
	Male	Female	Total
Diploma	16	11	27
Degree	198	171	369
Masters	1	0	1
M. Phil	0	1	1
PhD	0	0	0
Total	215	183	398

5. *Level up to which students expect to study:* The students were asked to state the highest level up to which they planned to study. The results were as shown in Table 7.4.

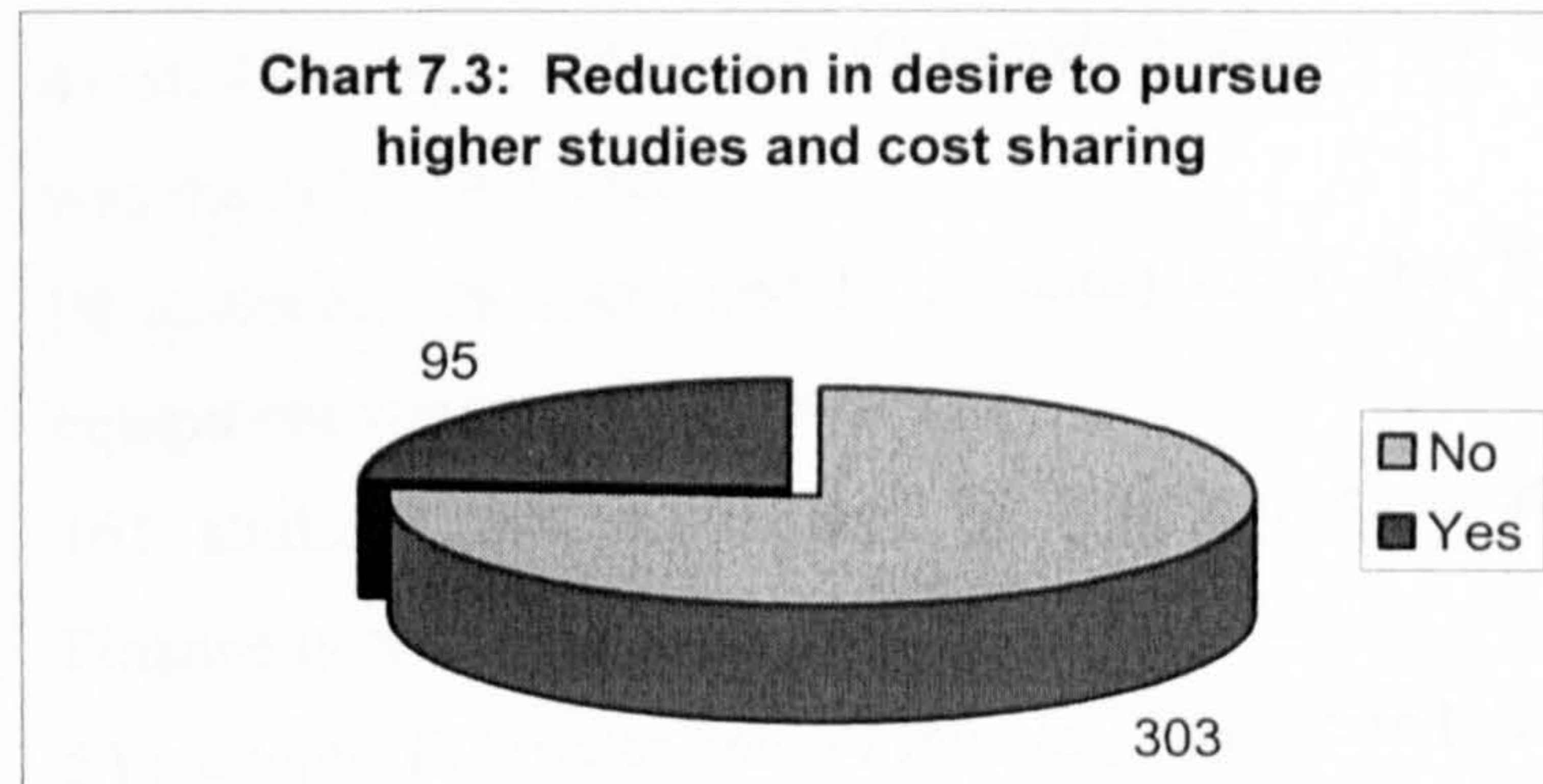
Courses	Number of students		
	Male	Female	Total
Degree	27	33	60
Masters	138	89	227
M. Phil	16	16	32
PhD	34	45	79
Total	215	183	398

This is shown in the following chart:



The number of students who would like to study for a higher degree (Masters to PhD) was 338. This represented 84.9% of the students surveyed. In the year 2000 there was only 4% of the students enrolled in higher degree programmes in Mauritius (*Tertiary Education Commission, 2002*). It is envisaged therefore that the demand for higher degree programmes may be fuelled by qualification inflation at the degree level.

6. *Reduction in desire to pursue higher studies and cost sharing:* Students were asked whether their personal contribution in financing their higher education would influence their desire to pursue further studies. From the 398 responses, 76.1% (303, out of which 159 males and 144 females students) stated that their desire to pursue higher studies would not be reduced if tuition fees were introduced in Mauritius and 23.9% (95, out of which 56 males and 39 females students) stated that their desire to pursue further studies would be affected. This is shown in the following pie chart:



8. *Local or overseas institutions:* Out of the 398 students surveyed, 304 (76.4%) stated that even with the charging of fees they would continue to study in Mauritius whereas, 94 (23.6%) stated that with the charging of fees they will prefer to go overseas for higher studies.
9. *Constraints:* Students were asked to identify in order of importance the constraints encountered in their participating in higher education. The tool used in the analysis of the data in this section is the Likert Scale. The Likert technique presents a set of attitude statements. The Likert Scale measures the extent to which a person agrees or disagrees with a question. The most common scale is 1 to 5. Often the scale will be 1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree and 5 = strongly disagree. As each degree of agreement is given a numerical value from 1 to 5, a total numerical value can be calculated from all the responses. It is an ordinal scale that captures a person's perceptions towards a set of mental or behavioural beliefs about a given object. It must be pointed out that the list of constraints to which the respondents were requested to respond was not exhaustive and that they were not asked to respond on issues involving their own abilities in undertaking higher education.

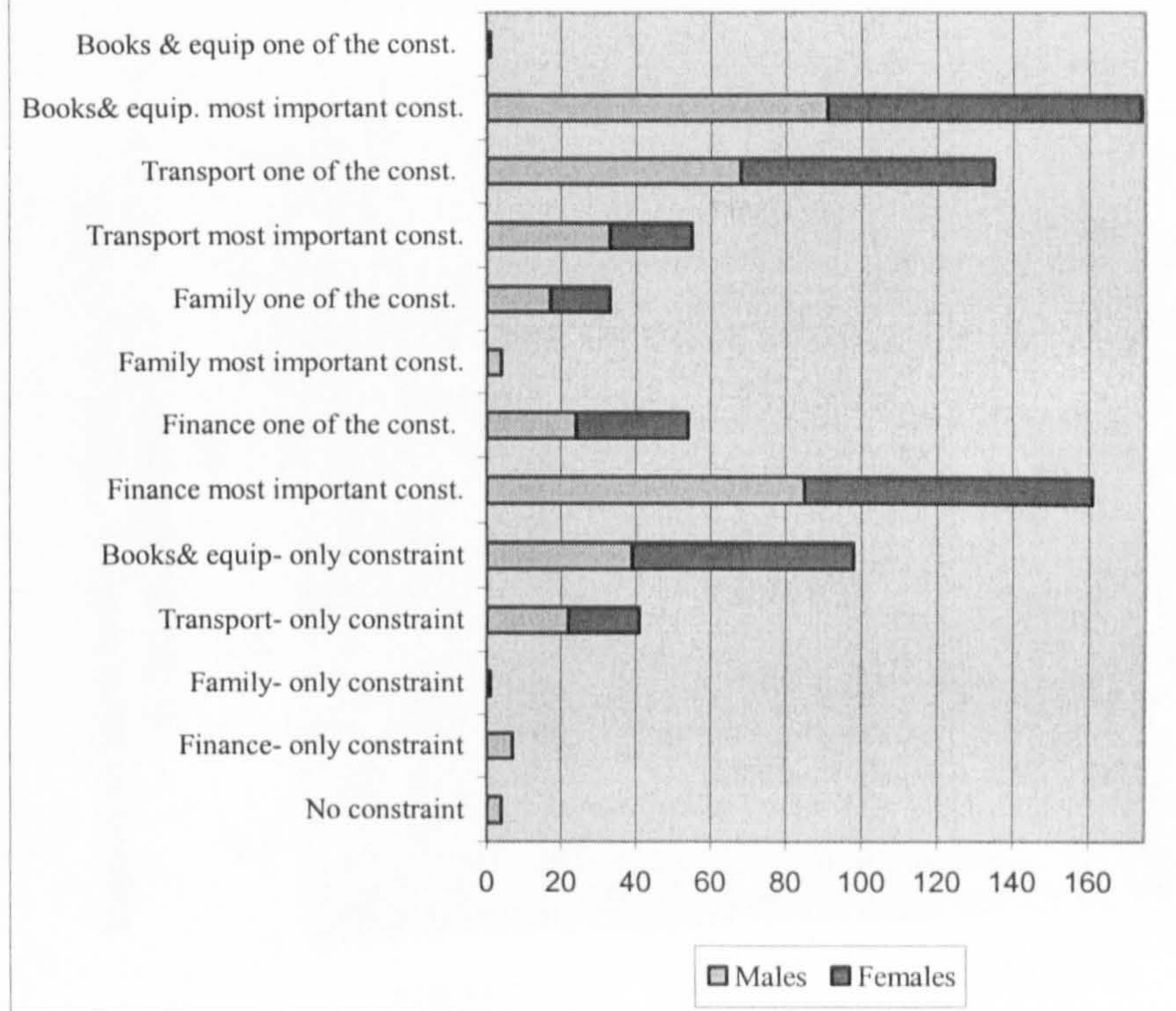
The responses of the 398 students surveyed were as follows

- (a) 4 male students stated that they do not have any constraint.
- (b) 7 male students stated that Finance was the only constraint.
- (c) 1 female student stated that Family was the only constraint.

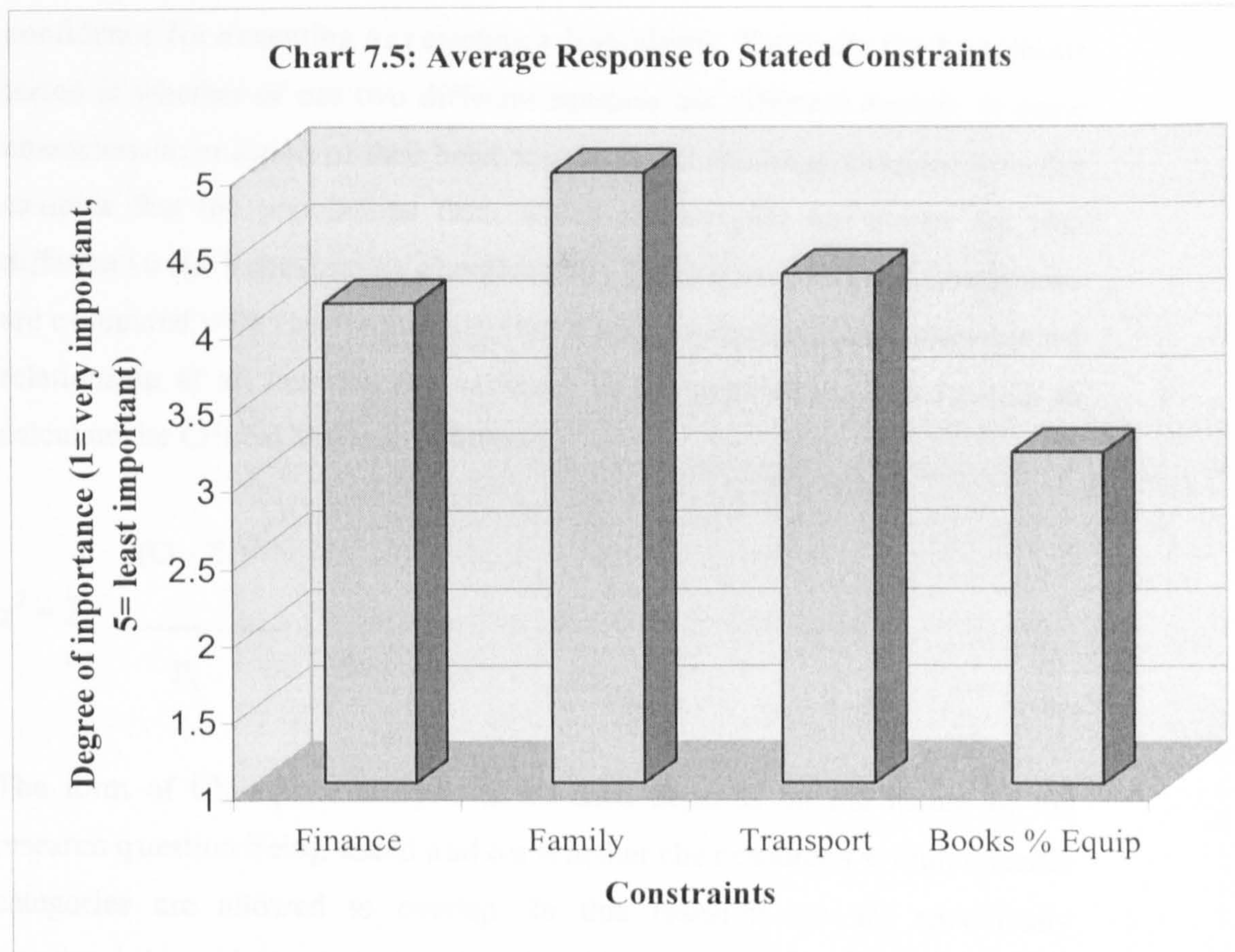
- (d) 41 students, (22 males and 19 females) stated that Transport was the only constraint.
- (e) 98 students, (39 males and 59 females) stated that Books and equipment were the only constraint.
- (f) 161 students, (85 males and 76 females) have stated that Finance is one of the most important constraints.
- (g) 54 students, (24 males and 30 females) have stated that Finance is one constraint amongst others but not the most important one.
- (h) 4 students, (2 males and 2 females) have stated that Family is one of the most important constraints.
- (i) 33 students, (17 males and 16 females) have stated that Family is one constraint amongst others but not the most important one.
- (j) 55 students, (33 males and 22 females) have stated that Transport is one of the most important constraints.
- (k) 135 students, (68 males and 67 females) have stated that Transport is one constraint amongst others but not the most important one.
- (l) 174 students, (91 males and 83 females) have stated that availability of Books and Equipment is one of the most important constraints.
- (m) 99 students, (47 males and 52 females) have stated that availability of Books and Equipment is one constraint amongst others but not the most important one.
- (n) 1 female student has stated that supervision was a constraint.
- (o) 1 female student as stated that time was a constraint.

The above responses to the stated constraints by gender is shown in Chart 7.4 below.

Chart 7.4: Constraints identified by gender



The following Chart below shows the average response to the stated constraints using the Likert scale responses ranging from 1 for very important constraint to 5 for least important constraint.



The closer the average response is to 5, therefore the less important the constraint is perceived to be. From the above Chart it is observed that the average responses for Finance is 4.12, for Family 4.96 and for Transport 4.31. As these average responses are quite close to 5, it can be inferred that, on average, these three constraints are not important. For Books and Equipment, however, the average response is 3.14. This shows that some of the students do find that the availability of books and equipment is a constraint to their higher education.

The above provides only an indication of the responses of students to the stated constraints on the basis of averages. A more detailed analysis is presented below using Chi square tests.

Chi Square Analysis of the Survey Data

In the section that follows Chi square tests on some of the survey results are conducted. Chi square is a test of statistical significance of the degree of

confidence for accepting or rejecting a hypothesis. Typically the hypothesis tested is whether or not two different samples are different enough in some characteristic or aspect of their behaviour so that it can be generalised from the samples that the populations from which the samples are drawn are also different in the behaviour or characteristic. The actual observed frequencies are compared with the frequencies that would be expected if there were no relationship at all between the variables in the population. The formula to calculate the Critical Value is as follows:

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

The form of Chi-square analysis to be used depends on the nature of the research question being asked and on whether the responses within specific categories are allowed to overlap. In this research we are specifically interested in asking the following type of question: is there a difference between respondent (category) and response (target variable) in terms of a single target variable. For example, is it the intention of the respondent (male or female) to study to a specific level (Masters – target variable)? If so, does this intention depend upon gender? This means that all of the analysis that follows is based upon 2x2 contingency tables. Because the research allows respondents to provide multiple responses to, for example, the level of study intended, it is not valid to include all such responses in the same table since this will involve overlapping responses. The rationale for this approach is clear – even if a respondent intends to study to Masters level this does not preclude his or her further intention to then study to, for example, PhD level. The same respondent is free to offer multiple responses in the same category of question. The analysis is conducted at two levels of significance: $\alpha = 0.05$ and $\alpha = 0.01$. The associated χ^2 critical test values (with 1 degree of freedom) are 3.84 and 6.64.respectively. The results are analysed as follows:

If the Calculated Value (CV) of $\chi^2 >$ the Critical Test Value (CTV) then the null hypothesis is rejected. This means the observed distribution of response (i) is significantly different from the expected distribution of (i). In summary we can therefore write:

If $CV(\chi^2) < CTV(\chi^2)$ H_0 is accepted ($O_i = E_i$)

If $CV(\chi^2) > CTV(\chi^2)$ H_0 is rejected ($O_i \neq E_i$)

The analysis is provided in Table 7.5 in terms of constraints by gender, willingness to pay by gender, expected salary after graduation by gender, desired future level of study by gender and desired future level of study by household income.

Table 7.5: Results of Chi Square Tests						
Samples Tested	Male (215)	Female (183)	χ^2 CV	CTV $\alpha=.05$	CTV $\alpha=.01$	H₀ Accepted/ Rejected
1. Single and only constraint						
A. Books and Equip.	39	59	10.56	3.84	6.64	Rejected
B. Transport	22	19	0.0	3.84	6.64	Accepted
2. Most Important Constraint						
A. Books and Equip.	91	83	0.37	3.84	6.64	Accepted
B. Finance	85	76	1.68	3.84	6.64	Accepted
C. Transport	33	22	0.77	3.84	6.64	Accepted
3. Willingness to pay by Gender						
A. 25% of Cost	88	82	0.61	3.84	6.64	Accepted
B. 50% of Cost	115	86	1.67	3.84	6.64	Accepted
C. 75% of Cost	12	15	0.03	3.84	6.64	Accepted
4. Desired Level of Study by Gender						
A. Masters	138	89	9.76	3.84	6.64	Rejected
B. PhD's	34	45	4.79	3.84	6.64	Rejected
5. Expected salary per month after Graduation by Gender						
A. Rs 15,000 – Rs 20,000	105	71	4.04	3.84	6.64	Rejected
B. Rs 20,000 – Rs 25,000	50	42	0.01	3.84	6.64	Accepted
C. Above Rs 25,000	22	0	19.28	3.84	6.64	Rejected
6. Higher Degree by Household Income						
	< Rs 25,000	> Rs 25000				
Number of Students	14	97	47.17	3.84	6.64	Rejected

It is observed that more female students view books and equipment as being the single and only constraint to their higher education. This might be because female students may see books and equipment as being very important for their studies whereas male students may view class attendance as more important. There was no strong difference in the strength of opinion between males and females with regards to transport as being the single and most important constraint to higher education.

In terms of identification of books and equipment, finance and transport each as being the most important constraint, the differences in the strength of opinion between males and females are not significant.

The differences in willingness to pay for higher education by males and females for each of the proposals (25%, 50% and 75% of cost) are also not significant.

In terms of future level of study by gender it is observed that female students would prefer to pursue their studies to PhD levels. This might be because male students may prefer to join the labour market at the earliest and/or female students feel that they would continue studying in future even after getting married.

It is observed that for the expected salary after graduation the difference in opinion between males and females for the salary range Rs 20, 000 to Rs 25,000 was not strong. However more female students expected that their salary per month would be in the range Rs 15, 000 to 20, 000 per month. It is also useful to note here that the current graduate salary (about Rs 17, 000 per month) is almost in the middle of this range. It appears, therefore that the majority of the students do have a realistic expectation of future salary levels in Mauritius. In terms of the higher income band, above Rs 25, 000, it was surprising to note that only male students have responded that this was their expectation. No female students expected salaries above Rs 25, 000.

In terms of desired future level of study by household income (less than Rs 25,000 and more than Rs 25, 000), it is observed that the difference of opinion between students from both income levels is very significant. More students from the higher income group would like to pursue higher studies.

10. The desired levels of income of the students surveyed were as follows:

Table 7.6: The desired levels of income of the students surveyed			
Expected average Monthly income	Number of students		
	Male	Female	Total
Less than 15,000	1	5	6
15,000	109	107	216
More than 15,000	105	71	176
More than 20,000	50	42	92
More than 25,000	22	0	22

For comparison purposes, it is observed that the average monthly income in Mauritius is Rs 10,236 while that of a graduate is Rs 17,572 (*Central Statistical Office, Annual Digest of Statistics, 2001*).

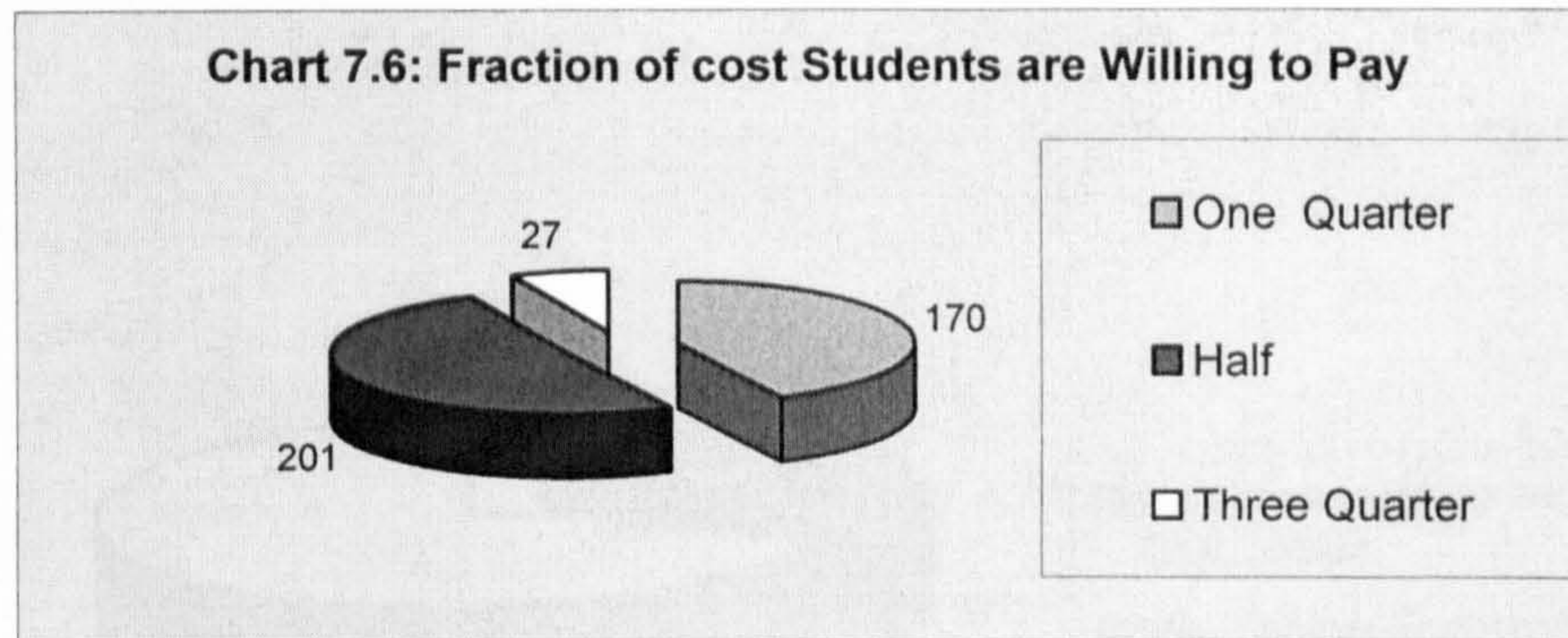
11. *Contribution to Higher Education*: Students were asked to state in terms of a percentage of the total cost per annum they would be willing to contribute in the event that they would be required to share the cost of higher education. The questionnaire included a note that they could contact their parents in answering this question.

A cost of Rs 60,000 per annum was assumed for this question. The results were as follows:

- (a) 42.7% (170, out of which 88 males and 82 females students) stated that they would be willing to contribute 25% of the cost.
- (b) 50.5% (201, out of which 115 males and 86 females students) stated that they would be willing to contribute 50% of the cost.
- (c) 6.8% (27, out of which 12 males and 15 females students) stated that they would be willing to contribute 75% of the cost.

- (d) No student indicated that they would be willing to pay the full amount.

This is shown in the following chart:



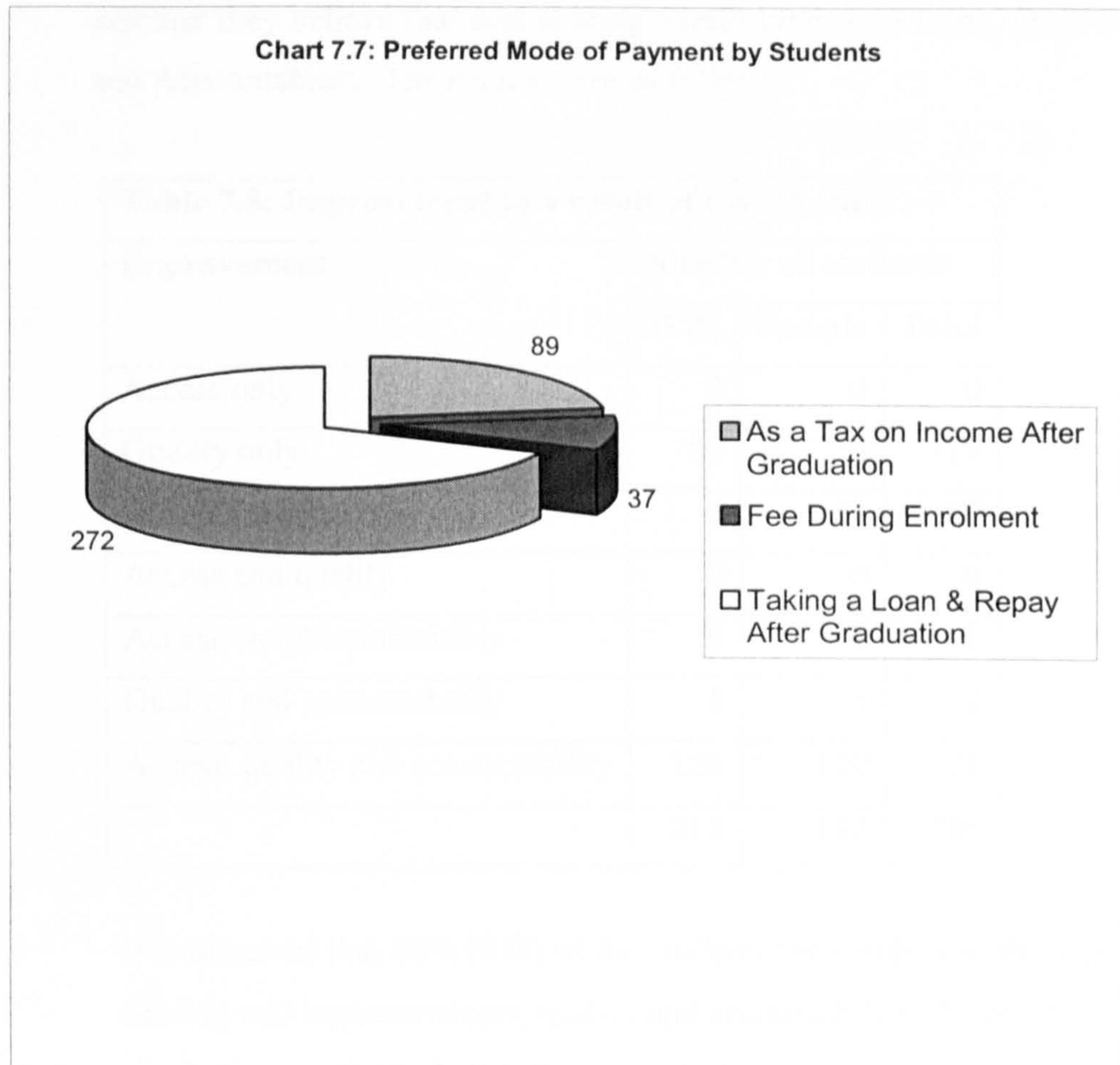
On the basis of an annual fee on Rs 60,000, the monthly fees would be Rs5, 000 per month. 50.5% (201) of the students have indicated that they would be willing to pay Rs 2,500 per month (50% of the fees).

On the basis of the study carried out by *Morisson, 1997*, discussed in Chapter 5, it is observed that the willingness to pay Rs 2,500 as fees for higher education is twice what parents are willing to pay, for private tuition only, for their children at the primary and secondary level.

12. *Mode of payment:* Students were asked to choose a preferred mode of payment. The results were as follows:

Preferred mode of payment	Number of students		
	Male	Female	Total
A fee during the period of employment	29	8	37
Taking a loan and repay after graduation	138	134	272
Graduate tax	48	41	89
Total	215	183	398

This is shown in the following chart:



It is observed that, out of 398 students, 272 (68.3%) preferred to take a loan and reimburse it after graduation, 89 (22.4%) would prefer being taxed on their taxable income after completion of study and 37 (9.3%) chose to pay a fee during the enrolment period.

The above observation may have policy implications especially in relation to the provision of some form of assistance to students to defer the payment of the fees to a time when they start earning a salary. The funding model proposed in Chapter 8 has taken into account the

preference of students for a loan scheme to be introduced in the event of cost sharing.

13. *Improvement as a result of cost sharing:* Students were asked to state whether they believe that cost sharing would improve Access, Quality and Accountability. The results were as follows;

Table 7.8: Improvement as a result of cost sharing			
Improvement	Number of students		
	Male	Female	Total
Access only	0	0	0
Quality only	80	38	118
Accountability only	6	33	39
Access and quality	0	0	0
Access and Accountability	0	1	1
Quality and accountability	1	1	2
Access, quality and accountability	128	110	238
	215	183	398

It is observed that 60% (238) of the students have indicated that cost sharing will improve access, quality and accountability. Among these 49.6% have indicated that there would be improvement in quality only and 16.4% have indicated that there would be improvement in accountability only. This implies that with cost sharing students expect that the present system of higher education will change to a more demand driven and market responsive one. When students pay fees they will seek value for money there by bringing into the system efficiency, economy and effectiveness.

Average Income, Desire to Pursue Higher Studies and Contribution to Higher Education

The average monthly household income was analysed along with the level up to which the respondents plan to study after completion of their present course so as to study the relationship between the economic background of the respondents and the academic level they want to achieve. The results are as shown below.

Average Household Income Rs/Month	Degree			Masters			M. Phil			PhD			Total		
	Count			Count			Count			Count			Count		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
5k-10k	0	0	0	6	7	13	0	0	0	0	0	0	6	7	13
10k-15k	1	7	8	22	10	32	0	5	5	0	4	4	23	26	49
15k-20k	0	1	1	0	0	0	0	0	0	1	0	1	1	1	2
20k-25k	0	0	0	54	36	90	3	0	3	1	0	1	58	36	94
25k-30k	10	12	22	25	18	43	9	7	16	25	37	62	69	74	143
30k-35k	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35k-40k	16	13	29	31	18	49	4	3	7	7	4	11	58	38	96
>40k	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
Total	27	33	60	138	89	227	16	16	32	34	45	79	215	183	398

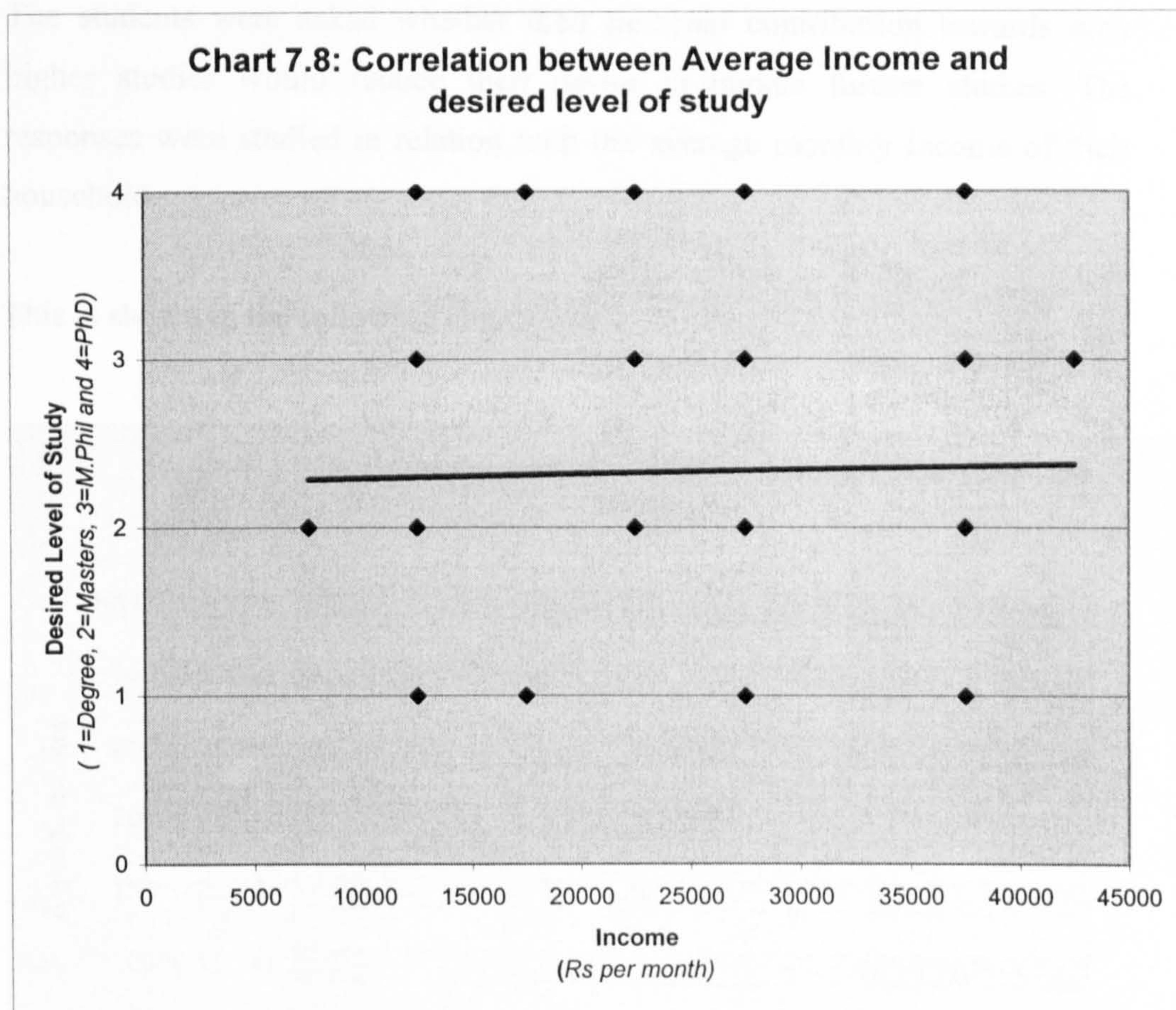
The modal class for the average monthly household income field is Rs25,000-Rs30,000. Out of 398 students, 143 (35.9%) belong to the modal class. Among these 143 students, 22 (15.4%) plan to complete up to a Bachelor degree, 16 (11.2%) want to achieve M.Phil level, 43 (30.1%) want to study up to a Master degree and 62 (43.4%) want to attain PhD level.

It is noted that out of the 398 students surveyed, only 60 (15.1%) planned to study up to the degree level. The remaining 338 (84.9%), planned to study further.

On the basis of the data collected the correlation between the income bracket and the desired level of study has been worked out. Correlation analysis helps to measure in one figure the degree of relationship existing between variables. If two variables vary in such a manner that movements in one variable are accompanied by movements in the other, the two variables are said to be correlated. Correlation analysis attempts to measure the degree of relationship between variables. It is not a measure of cause and effect relationship. Even a high degree of correlation between variables does not necessarily mean that a relationship of cause and effect exists between the variables.

If two variables vary in the same direction, that is, if as one variable is increasing, the other, on an average, is also increasing, or, if as one variable is decreasing, the other, on an average, is also decreasing, correlation is said to be positive. If on the other hand the variables are varying in opposite direction. That is when one variable is increasing the other one is decreasing, or vice versa, correlation is said to be negative.

The correlation coefficient between the income bracket and the desired level of study is 0.0224 showing a very slight positive correlation between income and desired level of study. This is shown in the following chart.



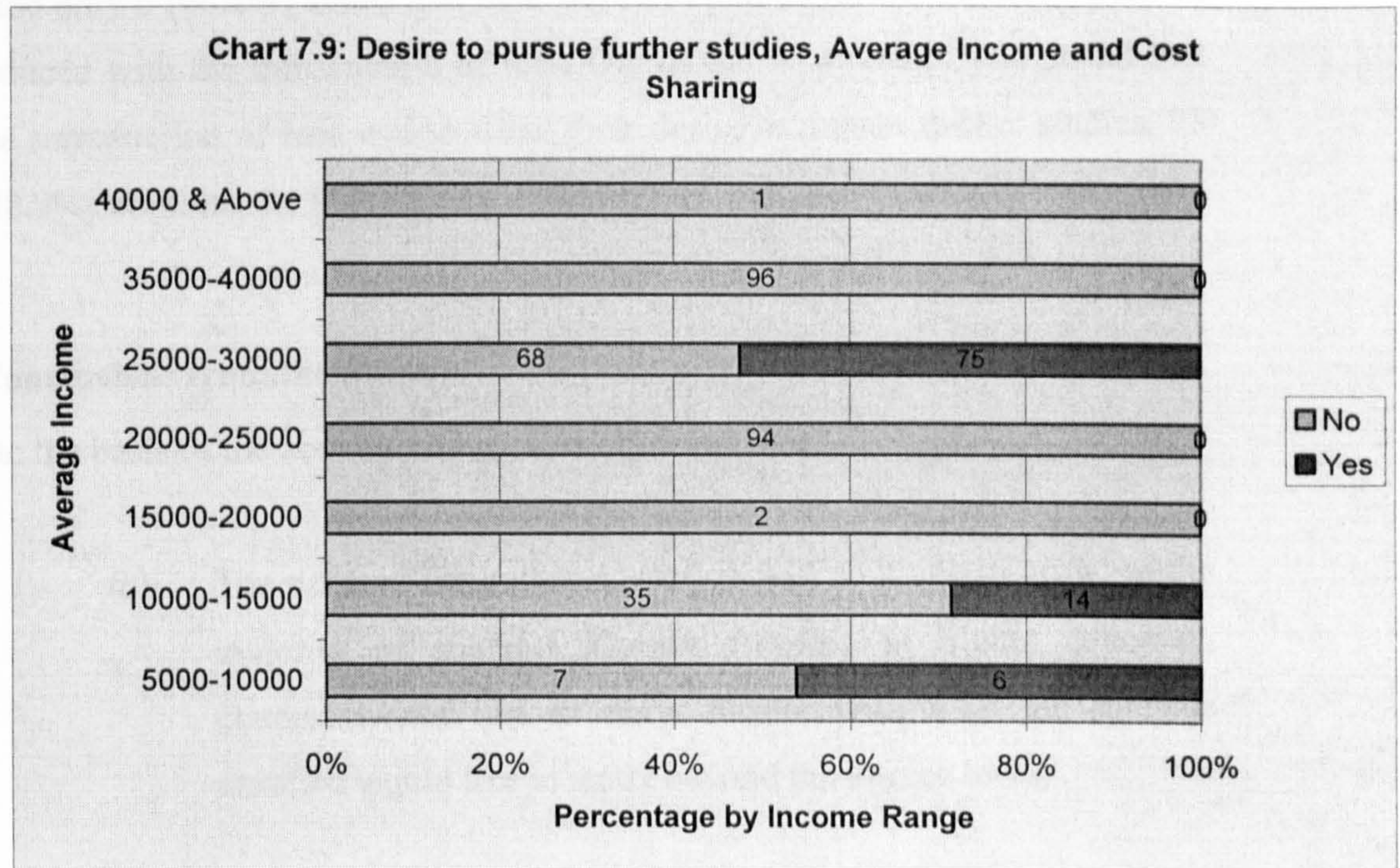
It can be inferred that, in general, the parental income of the students has very little impact on the desire of the students to pursue higher studies in Mauritius.

A further analysis of the data reveals that:

- (a) All 13 students in the low income bracket would like to study further (beyond the degree level)
- (b) Out of the 51 students in the middle income bracket 9 would like to study up to the degree level only and the remaining 42 would like to study further (beyond the degree level).
- (c) Out of the 334 students in the high income bracket 51 would like to study up to the degree level only and the remaining 283 would like to study further (beyond the degree level).

The students were asked whether their personal contribution towards their higher studies would reduce their desire to pursue further studies. The responses were studied in relation with the average monthly income of their household.

This is shown in the following chart:



It is observed that 303 (76.1%) students have stated that the charging of fees would NOT reduce their desire to pursue further studies. Out of the remaining 95 (23.9%) students who stated that their desire to pursue further studies would be reduced with the charging of fees:

- (a) 75 were in the income range 25,000-30,000 (high income bracket)
- (b) 14 were in the income range 10,000-15,000 (middle income bracket); and

- (c) 6 were in the range 5,000-10,000 (low income bracket).

It is also observed that, out of the 334 students in the high income band only 75 (22.5%) stated that their desire to pursue further studies would be reduced with the introduction of fees. Only 14 (27.5%) out of the 51 students in the middle-income band stated that their desire to pursue further studies would be reduced with the introduction of fees. Out of the 13 students in the low income band only 6 (46.2%) stated that their desire to pursue further studies would be reduced with the introduction of fees. Out of the 95 students who stated that the introduction of fees would affect their desire to pursue further studies, 75 (78.9%) are from the high-income bracket.

Conclusions from the Survey

On the basis of the above findings, it is observed that:

- (a) The demand for higher education will continue to grow, as the majority of students already enrolled in higher education courses would like to study further (84.9% of the students enrolled would like to study beyond the degree level).
- (b) The introduction of fees at the higher education level would not have a big impact on the desire to pursue higher studies. (76.1% of the students surveyed stated that the introduction of fees would not reduce their desire to pursue further studies).
- (c) The introduction of fees at the higher education level would not have a big impact on students moving overseas for higher studies (76.4% of the students surveyed stated that even with the charging of fees they would continue to study in Mauritius).
- (d) There is a willingness to contribute to higher education in Mauritius. 42.7% of the students surveyed are willing to contribute 25% of the cost of their studies, 50.5% are willing to

contribute 50% and 6.8% are willing to contribute 75% of the cost of their studies.

- (e) About 60% of the students surveyed expect that with the charging of fees there will be improvement in access, quality and accountability in the higher education sector in Mauritius.
- (f) The levels of income of the households of the students do not have a big impact on the desire to pursue further studies. 84.9% of the students planned to study beyond the degree level. All the students within the low-income bracket planned to study beyond the degree level. Even with the introduction of fees the desire to study further is not affected much. Out of the 398 students, 76.1% stated that their desire to pursue further studies would not be affected with the introduction of fees. Interestingly, out of the 95 students who stated that their desire to study further would be affected with the introduction of fees, 75 (78.9%) are from the high-income bracket. This may be explained by the fact that they are already well off financially and feel that investing further in higher studies will not be beneficial. Furthermore there is no motivation for them to study further to earn a higher salary in future and hence they may not be interested to continue to study.

Outcome of the Interviews

Thirty-one senior persons were interviewed as follows; from the higher education institutions (8), the Tertiary Education Commission (3), the Ministry of Education and Scientific Research (3), the Ministry of Finance (2), the Ministry of Economic Planning (2), Ministry of Training and Skills Development (1), the Industrial and Vocational Training Board (2), the Mauritius Employers Federation (1), the Joint Economic Council (1), the Technical School Management Trust Fund – Polytechnic sector (4) and the private providers of higher education (4). The persons interviewed included

Chairmen of Boards, Directors, Deputy/Assistant Directors, Registrars, Senior Administrators, Heads of Finance, Economists, Accountants, Heads of Divisions, and two ex-ministers of education. The questions asked during the interviews were drawn from the list shown in Appendix III. The results of the interviews of these senior persons are not different from the results of the survey.

Most of the interviewees were aware of the changes taking place in other countries on the move towards cost sharing in higher education. They believed that, on the basis of the needs of Mauritius to meet present and future challenges, demand for higher education will increase substantially. They envisaged that government will not be able to expand the system to meet the increasing demand and hence to the extent that government will not be able to increase facilities to meet additional demand, free higher education does constitute a limitation on access. Cost sharing, as an alternative source of funding, was therefore inevitable. However it was the desire of most of the interviewees that the government provide a regulatory framework for higher education. Private providers of higher education expressed the wish that whatever be the subsidy allocated to students attending government higher education be allocated to their students also.

On the basis of equity, especially in relation to the use of tax payers' money to subsidise higher education, the interviewees were unanimous that higher education in Mauritius should not be free and fully funded by the government. As students are the direct beneficiaries of higher education it was argued that they should contribute and share the cost of their higher education. Most of the interviewees thought that the best way to share cost with students would be through direct fees payable during the study period on a semester basis. It was also suggested that the government should come up with an appropriate student loan scheme for students pursuing higher studies in the event that cost sharing is introduced in Mauritius. The interviewees were also conscious that there are students, especially from the low income bracket, who may have financial difficulties to pursue their higher studies. It was proposed that, for such students, some form of financial assistance such as bursaries and

scholarships should be devised on the basis of means testing on parental incomes.

The major challenges for the sector are increasing access and infrastructure facilities, improving quality, retaining academic staff and improving research. All persons interviewed were of opinion that the charging of fees will improve access, quality and accountability in the higher education sector.

It was believed that management initiatives are restricted because of government funding. This was due to bureaucratic procedures, the line item budgeting shortage of funds, political interferences, ministerial directives and the standard salaries and conditions of service prevailing in the public sector. It was felt that a grant formula for the allocation of government funds and the use of performance budgeting would be more appropriate.

They did not feel that charging of fees would deter students to pursue higher studies in Mauritius as the students were paying some form of "fees" in terms of private tuition during their secondary education and that there is a number of students proceeding abroad for higher studies where it is much more costly. It was felt that a fees ranging from Rs 1,000 to Rs 3,000 per month (Rs 12,000 to Rs 36,000 per annum) would be acceptable by the students and their parents.

The persons interviewed can be broadly classified into three categories as follows:

1. Policy makers: From the Ministry of Education and Scientific Research, the Tertiary Education Commission, the Ministry of Finance, the Ministry of Economic Planning, the Ministry of Training and Skills Development, the Industrial and Vocational Training Board and the Technical School Management Trust Fund.
2. Public providers: From the University of Mauritius, Mauritius Institute of Education, Mahatma Gandhi Institute, Mauritius College of the Air,

Swami Dayanand Institute of Management and the Institut Supérieure de Technologie,

3. Private providers: From private institutions providing higher education.

The main themes, which came out of the interviews, were as follows:

1. Government cannot continue to fund expansion in higher education.
2. Higher education cannot continue to be free in Mauritius.
3. Government funding free higher education constitutes a limitation on access.
4. Students should pay tuition fees.
5. Mauritians can afford to share the cost of their higher education.
6. Poorer students should be helped.
7. Charging of fees will not deter students to undertake higher education.
8. The role of the government should be limited to provision of regulatory framework.
9. Students attending private and overseas higher education institutions are discriminated against as they pay tuition fees and are not subsidized. This is unfair and constraining access to higher education.
10. Government funding through the one line budget and the standard conditions of employment are limiting the publicly funded higher education institutions to take initiatives and to manage.

The Table below provides a summary of the responses of the three categories of interviewees on the themes identified above

Category of Interviewees	Main themes/Responses									
	1	2	3	4	5	6	7	8	9	10
Policy makers	✓	✓	U	✓	✓	✓	✓	X	X	X
Public providers	✓	✓	✓	✓	✓	✓	✓	✓	X	✓
Private providers	✓	✓	✓	✓	✓	✓	✓	✓	✓	X

✓: Important; X: Not important; U: Unsure

Taking the views of the interviewees and considering the survey results we can say that the willingness to pay is strong. This is only going to be consistent if the returns to higher education are significant. The next section provides a brief discussion on this point.

The Rate of Return on Higher education in Mauritius

The estimate of the financial rate of return on investment in higher education has been worked out on the basis of salaries of school leavers and those of first-degree holders.

No distinction is made between males and females salaries, as there is no significant salary differential between males and females in Mauritius.

The approach used is to compare the estimated benefits of additional years for higher education in terms of earnings differentials with the estimated cost involved in undertaking higher education. A discounting procedure is applied to the net benefit stream derived from the student's estimated lifetime earnings such that the discount rate of interest that reduces the net present value of this stream of net benefits to Zero is found. This rate is the rate of return on investment in higher education.

The rationale for using the rate of return in the education sector is based on the notion that a person derives benefits from higher education, which are reflected in greater earning power through out life than a person who has not opted for or not been able to undertake higher education. Measuring the higher earnings after allowing for the cost of the higher education does provide an estimate in a single statistic of the return on investment to higher education.

Calculation of rates of return for different levels of higher education and in different fields of study, different occupations and different sectors do provide some indications as to where future investment in education is likely to lead to

greatest benefit and hence do provide guidelines for preparing educational priorities. A proper detailed analysis of the rate of return on higher education in Mauritius is not undertaken here, but a general approach is made so as to support the proposition and the evidence so far cited in this Thesis that demand for higher education in Mauritius will always be on the increase for the foreseeable future.

The average salary of a school leaver taken on the basis of salaries of Clerical Officer/Senior Clerical Officer, Customs and Excise Officer and Social security Officer is Rs 96,940 per annum. The average salary of a graduate taken on the basis of salaries of Education Officers, Economist and Engineer is Rs 213,052 per annum (*based on figures from the Annual Digest of Statistics 2001, p.128, Central Statistical Office, 2002*). On the basis of the above salaries and a working life starting at the age of 20 for school leavers and at 23 for graduates up to the age of 60, the net return to higher education is shown in the following table.

Age	Average Annual Income (Rs per annum)		Earnings Differential (Rs per annum)	Cost of HE (Rs per annum)	Net Returns (Rs per annum)
	Graduate	Non Graduate			
19	0	96940	-96940	-60000	-156940
20	0	96940	-96940	-60000	-156940
21	0	96940	-96940	-60000	-156940
22	0	96940	-96940	-60000	-156940
23-60	213052	96940	116112	0	116112

Applying the IRR procedure described above the rate of return to higher education in Mauritius as of 2001 (averaged across all subject groups and

occupations) is calculated to be 14.77%. It must be noted that this is an average and therefore it can be reasonably presumed that this figure will be higher for some occupational/subject groups and lower for others. This will depend on sector specific labour market conditions in the economy. However it is quite clear that a rate of return of this magnitude represents a significant incentive for an 18 year old in Mauritius to consider entering higher education. This is even more the case when we consider that it represents a rate of return, which is more than twice that available for savings. Thus from a parental point of view it is clearly more advantageous to invest in education than to invest in savings. In summary, two of the key stakeholders in higher education in Mauritius, parents and students, receive a significant benefit from higher education. The results reported earlier in terms of willingness to pay for higher education therefore make sense in the context of this level of rate of return.

Summary

In this chapter the results of the survey carried out among students, to determine the willingness to pay for higher education in Mauritius, and the outcomes of the interviews conducted with senior persons involved in higher education, to have their views on funding and cost sharing in higher education in Mauritius, have been presented. It has been observed that: 84.9% of the students would like to pursue higher studies beyond the degree level; the desire to pursue higher studies of 76.1% of the students would not be reduced if tuitions fees were introduced; only 40.45% of the students surveyed have stated that finance was one of the most important constraints in their participation in higher studies; 42.7% would be willing to contribute one quarter of the cost, 50.5% would be willing to contribute half of the cost and 6.8% would be willing to contribute three quarter of the cost; 68.3% of the students would prefer to take a loan and repay after graduation; 60% believed that cost sharing would improve access, quality and accountability.

The survey has revealed that the demand for higher education will continue to grow in Mauritius. The introduction of fees at the higher education level would not have a big impact on the desire to pursue higher studies. It would

also not have a big impact on students moving overseas for higher studies. There is a willingness to contribute to higher education in Mauritius. 42.7% of the students surveyed are willing to contribute 25% of the cost of their studies, 50.5% are willing to contribute 50% and 6.8% are willing to contribute 75% of the cost of their studies.

About 60% of the students surveyed expected that with the charging of fees there will be improvement in access, quality and accountability in the higher education sector in Mauritius. The levels of income of the households of the students do not have a big impact on the desire to pursue further studies.

The interviews conducted revealed that senior officials working in the higher education institutions and other related organisations in Mauritius are of the view that cost sharing in higher education is inevitable as the government will not be able to continue to provide free higher education for ever. They are also of the view that there is willingness and capacity in Mauritius to pay for higher education. They are also of opinion that cost sharing will not affect access but will bring in more equity, efficiency and accountability into the system.

The strong willingness to pay for higher education in Mauritius is confirmed by the high rate of returns on higher education of 14.77% in Mauritius.

CHAPTER 8: A FUNDING MODEL FOR HIGHER EDUCATION IN MAURITIUS.

There exists a wide spectrum of funding models that are applied to the higher education sector. In this chapter a model for the funding of the higher education system in Mauritius involving all the stakeholders is presented. The model has taken into account the higher education system as it exists in Mauritius and presented in Chapter 2, the funding scenarios discussed in the literature review in Chapter 3 and the findings of the survey discussed in Chapter 7. It provides for all the main actors and beneficiaries of higher education in addition to the government, to contribute and share the cost of higher education.

Government Funding

Providing high quality and relevant education to an expanding student population and maintaining standards inevitably require increased funding. In order to be able to cope with these requirements, governments in many countries have had to implement sweeping reforms in the funding of higher education, designed to:

- (i) Diversify the sources of funding including mobilising greater private financing for publicly funded higher education institutions;
- (ii) Provide financial support to qualified students who are unable to pursue higher level studies for the reasons of inadequate income; and
- (iii) Foster efficiency in allocating and utilising resources among and within the publicly funded institutions.

With regard to diversifying the sources of funding, many countries have judged it essential to develop an equitable framework striking a proper balance between contributions by the State and by other direct beneficiaries of higher education.

It is now well established that graduates derive personal economic benefit, in addition to non-monetary enhancement of quality of life which accompanies greater learning albeit, the financial rewards are not immediate but requiring a short-term sacrifice of earnings during study. Nevertheless there is convincing evidence that higher qualifications have consistently opened up the prospect of substantially higher lifetime earnings for graduates and that this pattern is expected to continue for the foreseeable future. It is also becoming clear that a high demand for graduates is likely to continue, especially due to structural changes in the economy as part of the global trends towards increasing reliance on the knowledge base of development.

The rising public cost has led many countries, including those where higher education had been traditionally free, to introduce cost sharing for higher education with students. Indeed, in several countries it has been argued that fairness suggests that those who benefit from higher education should make an appropriate and timely contribution in respect of the benefits gained. A notable example in this regard is Australia, where the introduction of a comprehensive student loan system has enabled it to introduce cost sharing in public higher education and achieve a 30% expansion in enrolments during the last few years without a significant increase in public subsidies. A similar system, the Scottish Graduate Endowment, has recently been introduced in Scotland.

Consistent with international trends, the demand for higher education in Mauritius also is increasing. The student projection for the higher education sector in Mauritius up to 2010 has already been made in Chapter 6 Table 6.2. The total enrolment in the publicly funded higher education institutions will have to increase from 8,038 in 1999 to 29,732 (including 5,000 seats to be created) in 2010 for the overall participation rate in higher education to increase from 12% in 1999 to 30% of the relevant age group in 2010 (an increase of 270%).

The projected cost of higher education in the publicly funded institutions was also estimated in Chapter 6, Table 6.4. It was observed that the total cost to the government with a 90% funding from the latter would increase from Rs 569 m in 1999 to Rs 2,858m in 2010. This represents an increase in the share of the government expenditure on higher education out of the total government expenditure on education from 15% in 1999 to 46% in 2010. In terms of GNP this represents almost a threefold increase in government expenditure on higher education as a percentage of the GNP from 0.53% in 1999 to 1.47% in 2010.

The extent of the increase in the projected cost of higher education is very high and it would be very difficult for the government of Mauritius to continue to financially sustain higher education on the same basis as at present.

Considering that higher education is an investment for the future and that it benefits the recipients, it would be reasonable to expect the latter to contribute towards the cost of higher education. In Chapter 7 it was clearly evident that students themselves both understand and accept this argument. In addition it has been shown that parental willingness to pay for additional education at the pre- higher education level is very strong in the Mauritian society (*Morisson, 1997*).

If the proposed enrolment target for higher education in Mauritius is to be met, government funding for higher education needs to be supplemented by private contribution through cost-sharing by students while at the same time ensuring that no segment of the population be deterred from benefiting from higher education for financial reasons.

Continued financial support by the government is fully justified given the wider benefits to society from higher education. Enhanced competitiveness and productivity are brought about through employing those with the highest levels of qualifications. If Mauritius is to compete in the knowledge-based economy of the future, then like its competitors, it must be prepared to continue making public investment in an expanding higher education system.

Higher education also contributes to a more informed citizenry able to participate more fully in the democratic process, to greater awareness of health, welfare and culture and to an inclusive society in which all can participate fully.

At present the government funds higher education to the extent of 90%. The higher education institutions raise the remaining 10%. It is estimated that this will remain constant and that any further sharing in the cost of higher education would have to come from the students. This is based on the fact that in the higher education institutions in Mauritius the level of research is very low, industry connection and entrepreneurial activities are almost non-existent and that there are no initiatives taken by the institutions to raise additional income.

Applying the data from Chapter 6 and the willingness to pay for higher education discussed in Chapter 7 a large number of funding scenarios for future cost sharing in higher education can be developed.

A realistic six scenarios for cost sharing of higher education have been developed and these are shown in the following table:

	Government	Students	Institutions
Actual	90%	0%	10%
Scenario 1	80%	10%	10%
Scenario 2	70%	20%	10%
Scenario 3	60%	30%	10%
Scenario 4	50%	40%	10%
Scenario 5	40%	50%	10%
Scenario 6	30%	60%	10%

On the basis of a unit cost of Rs 60,000 per annum (Rs 5,000 per month), the range covered by the six scenarios in terms of fees to be paid by the students is between Rs 6,000 and Rs 36,000 per annum (Rs 500 to Rs 3,000 per month).

The impact of the different scenarios on the total expenditure on education and on the GNP is given in Tables 8.2 to 8.7. The projections assume that the demand for higher education will not be affected by the introduction of tuition fees as a cost sharing measure as it has been observed that there are unmet demands for higher education in Mauritius and the target rate of enrolment of 30% is still low compared to other countries (which are also working towards increasing their enrolment rates).

Table 8.2: Scenario 1: Government 80%, Students 10% and Institutions 10%		
	1999 (Actual)	2010
No of students	8,038	29,732
Total exp on higher education 100%	628,500,000	3,175,741,221
80% of exp on higher education	568,500,000	2,540,592,977
Total Govt exp on education	3,669,200,000	6,274,332,000
Exp on higher education as a % of Total Govt exp on education	15%	40%
GNP at factor cost	106,904,000,000	194,565,280,000
Expenditure on higher education as a % of GNP	0.53%	1.31%

Table 8.2, Scenario 1, has been prepared on the basis that the government will contribute 80 % of the cost of higher education, students will contribute 10% of the cost and the higher education institutions will raise the remaining 10%. It is observed that under this scenario, the cost of higher education to the government will increase from Rs 569 m in 1999 to Rs 2,541 m in 2010, i.e. an increase of 347%. Furthermore, the percentage of recurrent expenditure on higher education to total government recurrent expenditure on education will increase from 15% to 40%. The percentage of recurrent expenditure on higher education to the GNP will increase from 0.53% to 1.31%.

Table 8.3: Scenario 2: Government 70%, Students 20% and Institutions 10%		
	1999 (Actual)	2010
No of students	8,038	29,732
Total exp on higher education 100%	628,500,000	3,175,741,221
70% of exp on higher education	568,500,000	2,223,018,855
Total Govt exp on education	3,669,200,000	6,274,332,000
Exp on higher education as a % of Total Govt exp on education	15%	35%
GNP at factor cost	106,904,000,000	194,565,280,000
Expenditure on higher education as a % of GNP	0.53%	1.15%

Table 8.3, Scenario 2, has been prepared on the basis that the government will contribute 70 % of the cost of higher education, students will contribute 20% of the cost and the higher education institutions will raise the remaining 10%. It is observed that under this scenario, the cost of higher education to the government will increase from Rs 569 m in 1999 to Rs 2,223 m in 2010, i.e. an increase of 291%. Furthermore, the percentage of recurrent expenditure on higher education to total government recurrent expenditure on education will increase from 15% to 35%. The percentage of recurrent expenditure on higher education to the GNP will increase from 0.53% to 1.15%.

Table 8.4: Scenario 3: Government 60%, Students 30% and Institutions 10%		
	1999 (Actual)	2010
No of students	8,038	29,732
Total exp on higher education 100%	628,500,000	3,175,741,221
60% of exp on higher education	568,500,000	1,905,444,733
Total Govt exp on education	3,669,200,000	6,274,332,000
Exp on higher education as a % of Total Govt exp on education	15%	30%
GNP at factor cost	106,904,000,000	194,565,280,000
Expenditure on higher education as a % of GNP	0.53%	0.98%

Table 8.4, Scenario 3, has been prepared on the basis that the government will contribute 60 % of the cost of higher education, students will contribute 30% of the cost and the higher education institutions will raise the remaining 10%. It is observed that under this scenario, the cost of higher education to the government will increase from Rs 569 m in 1999 to Rs 1,905 m in 2010, i.e. an increase of 235%. Furthermore, the percentage of recurrent expenditure on higher education to total government recurrent expenditure on education will increase from 15% to 30%. The percentage of recurrent expenditure on higher education to the GNP will increase from 0.53% to 0.98%.

Table 8.5: Scenario 4: Government 50%, Students 40% and Institutions 10%		
	1999 (Actual)	2010
No of students	8,038	29,732
Total exp on higher education 100%	628,500,000	3,175,741,221
50% of exp on higher education	568,500,000	1,587,870,611
Total Govt exp on education	3,669,200,000	6,274,332,000
Exp on higher education as a % of Total Govt exp on education	15%	25%
GNP at factor cost	106,904,000,000	194,565,280,000
Expenditure on higher education as a % of GNP	0.53%	0.82%

Table 8.5, Scenario 4, has been prepared on the basis that the government will contribute 50 % of the cost of higher education, students will contribute 40% of the cost and the higher education institutions will raise the remaining 10%.

It is observed that under this scenario, the cost of higher education to the government will increase from Rs 569 m in 1999 to Rs 1,588 m in 2010, i.e. an increase of 179%. Furthermore, the percentage of recurrent expenditure on higher education to total government recurrent expenditure on education will increase from 15% to 25%. The percentage of recurrent expenditure on higher education to the GNP will increase from 0.53% to 0.82%.

Table 8.6: Scenario 5: Government 40%, Students 50% and Institutions 10%		
	1999 (Actual)	2010
No of students	8,038	29,732
Total exp on higher education 100%	628,500,000	3,175,741,221
40% of exp on higher education	568,500,000	1,270,296,488
Total Govt exp on education	3,669,200,000	6,274,332,000
Exp on higher education as a % of Total Govt exp on education	15%	20%
GNP at factor cost	106,904,000,000	194,565,280,000
Expenditure on higher education as a % of GNP	0.53%	0.66%

Table 8.6, Scenario 5, has been prepared on the basis that the government will contribute 40 % of the cost of higher education, students will contribute 50% of the cost and the higher education institutions will raise the remaining 10%. It is observed that under this scenario, the cost of higher education to the

government will increase from Rs 569 m in 1999 to Rs 1,270 m in 2010, i.e. an increase of 123%.

Furthermore, the percentage of recurrent expenditure on higher education to total government recurrent expenditure on education will increase from 15% to 20%. The percentage of recurrent expenditure on higher education to the GNP will increase from 0.53% to 0.66%.

Table 8.7: Scenario 6: Government 30%, Students 60% and Institutions 10%		
	1999 (Actual)	2010
No of students	8,038	29,732
Total exp on higher education 100%	628,500,000	3,175,741,221
30% of exp on higher education	568,500,000	952,722,366
Total Govt exp on education	3,669,200,000	6,274,332,000
Exp on higher education as a % of Total Govt exp on education	15%	15%
GNP at factor cost	106,904,000,000	194,565,280,000
Expenditure on higher education as a % of GNP	0.53%	0.49%

Table 8.7, Scenario 6, has been prepared on the basis that the government will contribute 30 % of the cost of higher education, students will contribute 60% of the cost and the higher education institutions will raise the remaining 10%. It is observed that under this scenario, the cost of higher education to the

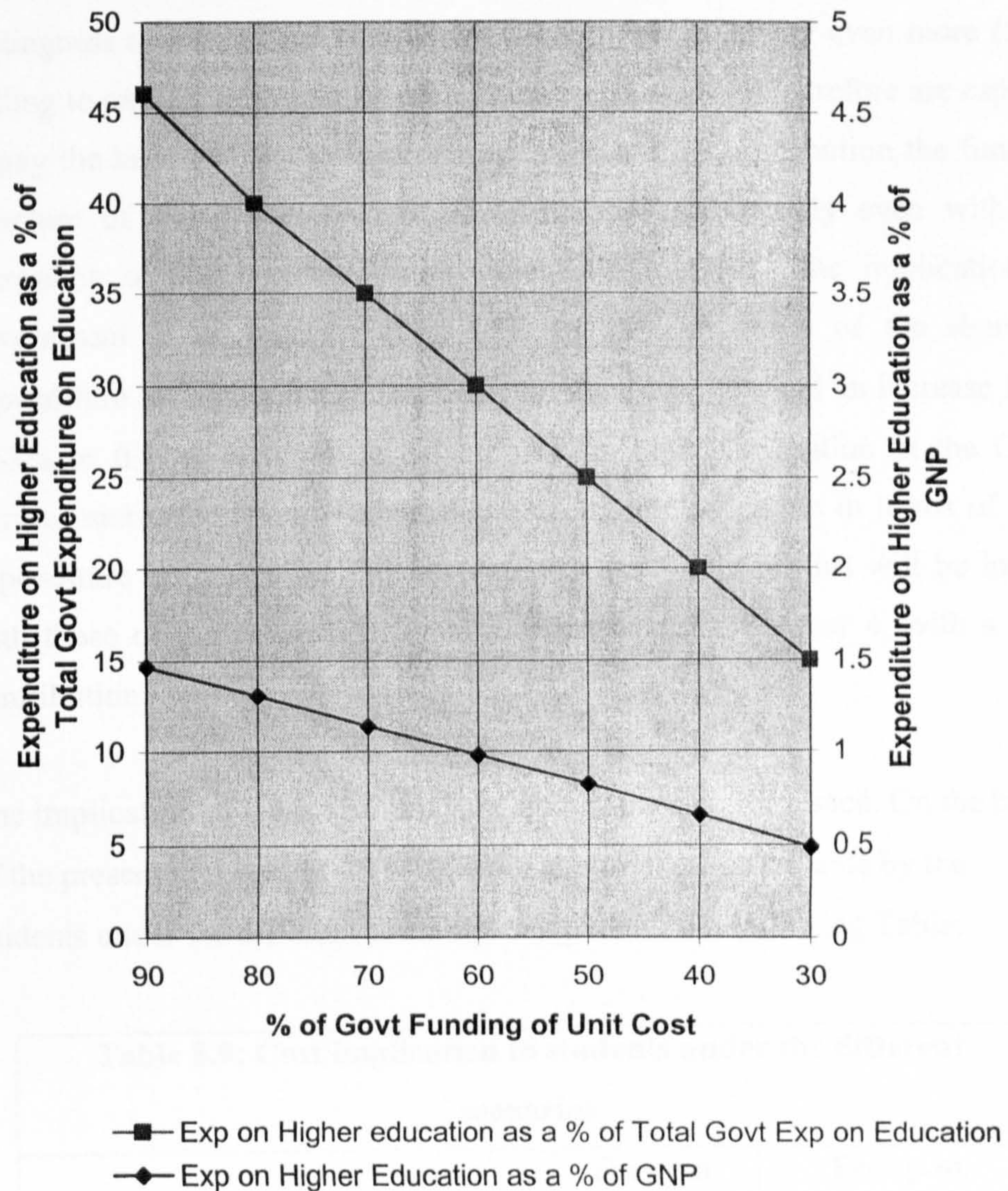
government will increase from Rs 569 m in 1999 to Rs 953 m in 2010, i.e. an increase of 68%. However the percentage of recurrent expenditure on higher education to total government recurrent expenditure on education remains at the same level of 15%. The percentage of recurrent expenditure on higher education to the GNP will decrease from 0.53% to 0.49%.

The implications of the above scenarios on total government expenditure on education and on the GNP are shown in Table 8.8 below.

Table 8.8: Implications on total government expenditure on education and on the GNP.		
	Exp on higher education as a % of Total Govt exp on education	Exp on higher education as a % of GNP
Share of Govt contribution in cost of higher education	46%	1.47%
80%	40%	1.31%
70%	35%	1.14%
60%	30%	0.98%
50%	25%	0.82%
40%	20%	0.65%
30%	15%	0.49%

The above data is illustrated in the chart on the next page.

Chart 8.1: Implications of the various scenarios on Total Govt Expenditure on education and on GNP



The 50 % contribution from the government has been taken as the optimal solution on the basis of the results of the survey, the responses of the persons interviewed, the fact that under this scenario the share to be contributed by students is similar to what parents are already contributing at the pre higher education level and the level of expenditure on higher education in the comparator countries discussed in Chapter 4.

It will be politically acceptable, as government will still be contributing the major share of the cost (50% government; 40% students; 10% institutions and

0% employees). Moreover the implication to students is only Rs 2000 per month and already parents are paying for private tuition at the pre higher education level a similar amount. The survey results have shown that there is a willingness to pay and some students were prepared to pay even more (50% willing to pay Rs 2,500 per month). Parents and students therefore are capable to pay the kind of fees being proposed. With a 50% contribution the funding structure of the government is not disturbed substantially even with the increasing of the enrolment rate from 12% to 30%. The implication to government is an increase from 15% to 25% in terms of the share of expenditure on higher education in the total expenditure and an increase from 0.53% to 0.82% in terms of expenditure on higher education in the GNP. Further more, the level of expenditure on higher education in terms of total expenditure on education and in terms of GNP for Mauritius will be in line with those of the comparator countries discussed in Chapter 4, with a 50% contribution.

The implication of the cost sharing on students is now discussed. On the basis of the present unit cost of Rs 60,000 per annum the fees payable by the students under the different scenarios are given in the following Table:

Table 8.9: Cost implication to students under the different scenarios		
	Fees p.a. Rs	Fees p.m. Rs
Actual (Present)	0	0
Scenario 1 (10% student Fees)	6,000	500
Scenario 2 (20% student Fees)	12,000	1,000
Scenario 3 (30% student Fees)	18,000	1,500
Scenario 4 (40% student Fees)	24,000	2,000
Scenario 5 (50% student Fees)	30,000	2,500
Scenario 6 (60% student Fees)	36,000	3,000

It is observed that, on the basis of a unit cost of Rs 60,000 per annum and when the contribution from the government is 50% and the funds generated by institutions is 10%, the 40% required contribution from the students amounts to Rs 24,000 per annum (Rs 2,000 per month). This level of fees from students is acceptable taking into account the level of private tuition fees payable by parents for the students whilst in secondary schools (Chapter 5). It is also in line with the findings of the survey carried out and discussed in Chapter 7 where 42.7% of the students have indicated that they would be willing to pay 25% (Rs 1,250 per month) of the cost, 50.5% would be willing to pay 50% (Rs 2,500 per month) and 27% would be willing to pay 75% (Rs 3,750 per month) of the cost. Moreover this level of fees (Rs 2,000 per month) is significantly lower than what the students would have had to pay if they proceeded overseas for their higher education. The costs will obviously depend on the country and the discipline being studied. The range of the estimated costs per year in Australia, France, India, South Africa, UK and USA (common destinations) are Rs318, 000 - Rs620, 000, Rs115, 000 - Rs158, 000, Rs30, 000-Rs35, 000, Rs105, 000 - Rs125, 000, Rs390, 000 - Rs938, 000 and Rs415, 000 - Rs 937,000 respectively.

It is also observed that, in most of the developed and newly developed countries selected for comparison purposes (Chapter 4, Table 4.2), the expenditure on higher education as a percentage of total expenditure on education is around or more than 25%. With a 50% contribution to the cost of higher education the share of expenditure on higher education as a percentage of total expenditure on education in 2010 would be 25%. It is clear that the level of contribution from the government could be as low as 50%.

* **Contribution from Other Stakeholders**

The above has established the share of expenditure of higher education that is most appropriate for the government. The contribution of the other stakeholders is now addressed.

Institutions

The higher education institutions have the capability to generate income to supplement their revenues from other sources. A potential means would be through entrepreneurial activities. The latter may take the form of:

- (a) Consultancy services;
- (b) Sales of short-term tailor-made courses directly to enterprises;
- (c) Commercialisation of research and research-related activities;
- (d) Renting of a portion of their assets;
- (e) Intellectual property rights; and
- (f) Investment.

This new facet of higher education institutions, as fund generators, is being widely appreciated in countries like Argentina, China, Ghana, Mexico, Mozambique, and Zambia (*Johnstone et al, 1998*).

In Mauritius, however, the involvement of higher education institutions in entrepreneurial activities for raising additional funds has been very low. This may be because of the reliance on government funding, the weak research infrastructure and almost no industry-connections at the level of the institutions. The percentage of funds raised by the higher education institutions has been stable and around 10%. For reasons already stated this is estimated to remain at 10% in Mauritius for some time in the future.

Employers

Employers also benefit from a learned workforce in terms of increased productivity and profits. They should therefore be required to contribute more actively in the financing of higher education. The following means could be adopted:

- (a) Scholarships at graduate and post-graduate levels: certain organisations in Mauritius may be required by law (on the basis of the number of staff employed or on the basis of their authorised capital) to grant

scholarships, fellowships and provide sponsorships for specific courses/ programmes, to their employees or the public. Already in Mauritius organisations employing more than ten employees are required by law (*The Industrial and Vocational Training Board Act, 1988*) to contribute 1% of their wage bill to a Training Fund. Although this may appear like forced philanthropy, organisations providing training to their employees are refunded 75% of the cost of the training, benefit from tax allowance of 200% of the training cost (deductible from taxable income) and end up having a better trained staff. A similar scheme could be drawn for higher education.

(b) An Education Tax could be introduced in some categories of organisation. This tax could be used to finance some aspects of higher education.

(c) Employers could be called upon to provide placement and training facilities to university students irrespective of the course being followed. The duration could range from half to a full academic year. Employers' support for on-the-job-learning would follow a continuum with the teaching syllabus.

(d) The government could alternatively secure continuous funding from the employers by imposing a levy for higher education, of say 1%, of the total basic wages as is presently the case for training (Industrial and Vocational Training Board discussed above).

Students

Students are the direct beneficiaries of higher education in terms of increased future earnings after graduation. In this respect it is justifiable to make them contribute to the cost of their higher education. Tuition fees can be charged directly to the students or their parents. Students may be requested to contribute (in terms of tuition fees) towards their higher education, irrespective of the type and level of course being followed.

However, in order not to deter students from poor families to have access to higher education, means tests for award of scholarships and bursaries and loans may be introduced. The results of the survey carried out (Chapter 7) revealed a preference for loans compared to graduate tax. A proposal for a student loan scheme has been made hereunder for Mauritius.

Student Loans

The government can place at the disposal of students a loan scheme to pay to pay fully or partly tuition and related fees for higher education. State supported loan schemes for higher education students in varying forms have been developed in over fifty countries. In developing countries, student loan schemes are popular in Latin America, the Caribbean, Asia and the Pacific region.

The logic underlying student loan schemes for higher education is well established. They are of particular interest to policy makers because they are able to contribute to the solution of a range of pressing problems facing governments regarding human resource capacity building and availability to industry, public and private sectors. Student loans are able to relieve pressures on national budgets by facilitating greater cost sharing. The liberated resources may be used for expenditure for greater societal priority in other areas (*Psacharopoulos, Tan and Jimenez, 1987*).

When targeted at disadvantaged groups, student loans can lead to greater access by the poor to higher education, thus contributing to improve social equity. They can also lead to the loosening of manpower bottlenecks that inhibit national and social development when targeted at priority fields of study.

Student loans help in achieving greater cost recovery in shifting some of the costs of higher education away from government (or the tax payers) to the

main beneficiaries of higher education - the students. They ease the payment burden of education falling on students and their families by enabling them to delay payment until they are in receipt of some income that the additional education would have made possible.

Justifications for a State Supported Student Loan Scheme in Mauritius

Over the past years, it has been observed that the demand for higher education in Mauritius is increasing. This is expected to continue in the future and will exert tremendous pressure on government funds and also on family incomes as fees and associated costs may rise beyond the financial capabilities of some families.

A state supported loan scheme therefore would not only help the government but also the students and their families. Besides easing the pressure on public funds, it will also enable students to study now and pay later.

In some developing countries, as elsewhere, student loan schemes have proved to be broadly successful. In others, the outcomes have frequently been disappointing, both in terms of meeting set objectives and in terms of financial sustainability. Where schemes have been less than successful, the lack of success has stemmed from weakness in process (administrative deficiencies, excessive default or poor targeting) or the causes have been in-built and, in particular, have related to excessively generous loan conditions and high subsidies. In some instances, administrative and other difficulties have led to the eventual abandonment of the schemes (Indonesia and Sri Lanka); in other countries, planned schemes were stillborn (Mongolia) (*UNESCO PROAP, 2001*).

The fact that state supported student loan schemes function relatively well in some countries, implies that the concept is essentially workable, provided it is properly adapted to the specific economic, social, political and cultural situation of the country.

The key factors that have to be taken into account are highlighted below:

- (a) Properly defined policy objectives;
- (b) Proper targeting of the loan repayment;
- (c) Priority courses/programmes;
- (d) Clear guidelines, eligibility and procedures for application;
- (e) Properly defined conditions for loan approval;
- (f) Efficient administration of the system;
- (g) Proper tracking of defaulters;
- (h) Involvement of stakeholders;
- (i) Properly defining eligibility criteria;
- (j) Incentive for financing institutions;
- (k) Adjustment for inflation.

Features of the Proposed State Supported Student Loan Scheme for Mauritius

- (a) **Objective:** To increase access to and improve equity in the higher education sector
- (b) **Eligibility:** The loan will be open to all students following recognised full-time higher education level programmes listed by the Government of Mauritius as priority fields of study in local higher education institutions.
- (c) **Purpose of the loan:** The loan will cover tuition fees for students following higher education level programmes locally.
- (d) **Maximum Loan Amount:** The maximum amount of the loan could be Rs 60,000 per annum (based on tuition fees being paid by students studying locally at public and private institutions providing higher education).

- (e) **Period Covered:** Loans could be granted for a maximum period of up to 4 years.
- (f) **Interest:** The granting of subsidy on interest charges is a prerogative of the government and different countries have different policies on this issue. However, a minimum of 3% is being proposed so as to cover the cost of administration of the loan scheme. Consideration may also be given to interest rates of 7% per annum that is just above the rate of inflation. Prior to the start of repayment, the loan could be interest free and that interest would be chargeable only when repayment starts.
- (g) **Loan Repayment:** Repayment involves loan capital plus interest charges. Repayment could be over a period of up to 5 years starting one year after graduation (i.e. at the start of the 6th year for a 4 year programme) - The one additional year moratorium is being proposed for the students to find a suitable job and start earning a salary.
- (h) **Security:** The loan could be tied to a fixed charge on immovable property belonging to the student or the parents or of guarantors and coupled with an insurance policy taken by the beneficiary. The latter must take an insurance cover at the beginning of the loan scheme to cover the amount of the loan outstanding at any one time. Special provisions have to be made for students who cannot provide any security in the form of immovable property. Such students could be granted loans after proper examination on a case-by-case basis.
- (i) **Disbursement:** The guidelines, procedures and disbursement would have to be clearly worked out to allow

good monitoring of the scheme. In general, disbursement would be effected in equal annual instalments at the beginning of each academic year against proof of registration and of associated costs.

- (j) **Management of the Scheme/Management of the fund:** The Scheme could be managed by a loan unit set up at the TEC and another unit at the Development bank of Mauritius (DBM). The TEC would establish guidelines and procedures for the loan, the eligibility and quantum of the loan to be granted on a case-by-case basis. The TEC would also be responsible for formulation of policies and reviewing of the loan scheme. The TEC unit will also examine applications for loans and make recommendations to the DBM. The actual management of funds, granting of loans and collecting repayments, would be effected by the Development Bank of Mauritius (DBM). A joint agreement would be signed by the TEC and the DBM on the modus operandi.
- (k) **Funding of the Scheme:** For the funding of the scheme, the following options are suggested:
- (i) Either by a fund earmarked by government, or
 - (ii) By the DBM plus top-up by the government for interest foregone;
 - (iii) By the DBM only.
- (l) **Private sector:** Some organisations in the private sector are already providing scholarships and soft loans to their employees for pursuing higher studies. Such initiatives could be further encouraged through the provision of appropriate incentives, such as tax benefits. The benefits could also be allowed for employers who extend the

facilities of scholarships and soft loans to children of their employees as well.

- (m) **Review of the scheme:** The scheme will have to be reviewed periodically to take into account issues such as changes in the list of priority fields of study, changes in the higher education sector and inflation.

Inter alia, the above loan scheme proposed has the following advantages:

- (i) It provides a deferred payment mechanism for the student as opposed to payment of fees at the time of study;
- (ii) It is less likely to impact on participation as there will be no impediment to access;
- (iii) The salary threshold for repayments provides an in-built mechanism to ensure that no students or potential students need to be disinclined to study at the higher education level;
- (iv) For the institutions, the money is received up-front; and
- (v) The model is not a disincentive for the institutions to generate funds and be entrepreneurial.

There might be some people who would not venture to take a loan for higher studies just because of fear of the debt. For such people the loan scheme might not be an option. However, it is believed that this fear can be dissipated if proper explanations are given to such people of the benefits of the time difference in the repayment of the loan and of the higher income that they could earn as a result of their higher studies.

The Funding Model

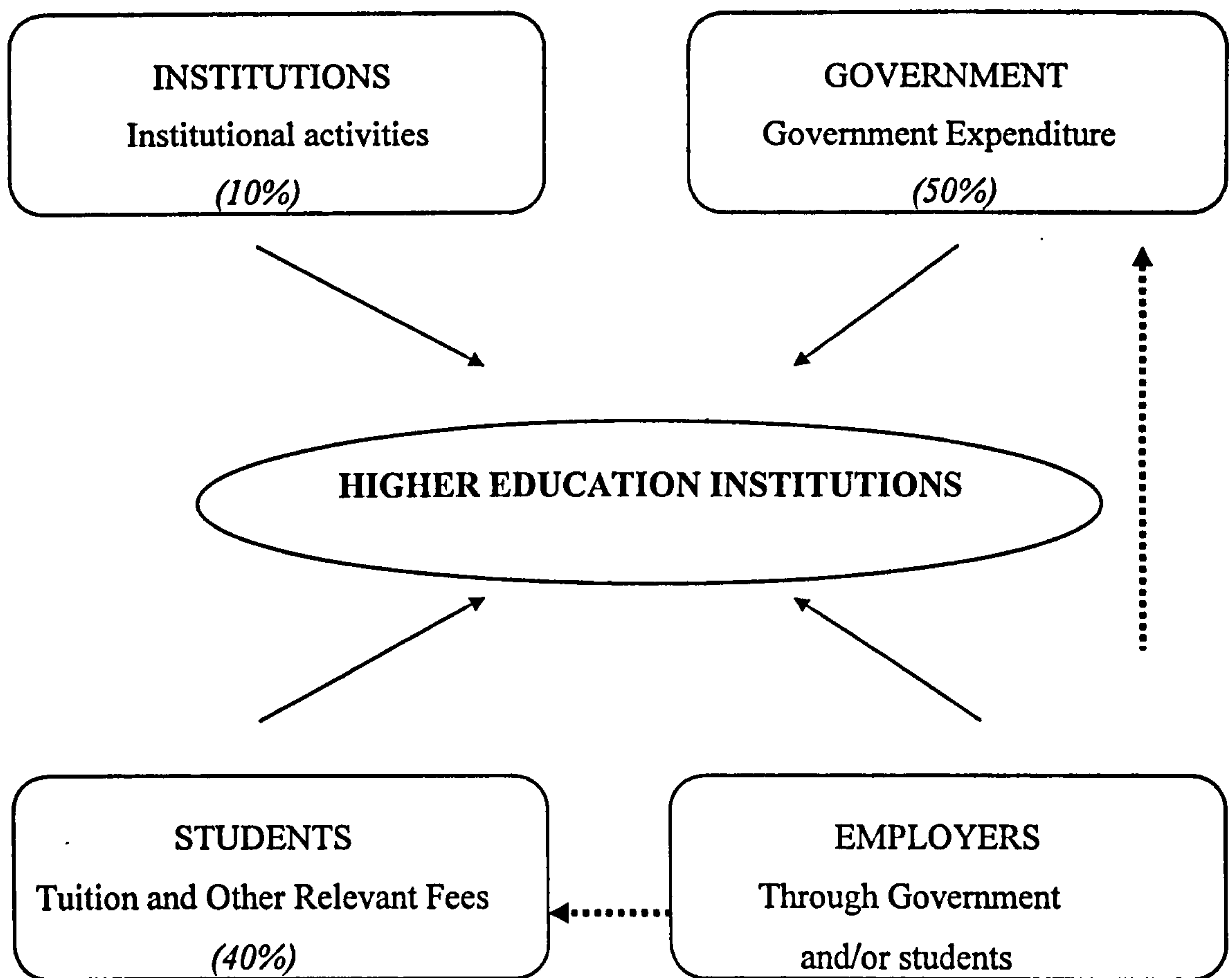
The sharing of the cost of higher education amongst the different stakeholders in Mauritius is inevitable. The model presented uses a cost sharing ratio of 50:40:10:0, for the government, the students, the institutions and the employers respectively. The share of the contribution proposed is based on the

analyses made in Chapter 5 and the survey results from chapter 7. Employers contribute indirectly. They would provide financial support either through the government, in the form of levy, or through the students themselves, for instance by means of scholarships and fellowships, amongst others. This is shown in the following Table and the Chart that follows.

Table 8.10: The funding model (Main Sources of Funding for HEIs)					
		Sources of funds			
		Government	Students	Institutions	Employers
Percentage of financial contribution		50%	40%	10%	0%
<i>Notes</i>					
<ol style="list-style-type: none"> 1. <i>Employers could be requested to contribute through scholarships, fellowships, research grants, and sponsorships for programmes/courses, amongst others.</i> 2. <i>The 40% contribution from students could be through a government loan with a low interest rate (7% per annum).</i> 					

The above model is represented in the following Chart:

Chart 8.2: The funding model (Main Sources of Funding for HEIs)



In terms of actual contribution per annum the above implies that an amount of Rs 24,000 (Rs 2,000 per month) would have to be made by each student enrolled, on the basis of a unit cost of Rs 60,000 per annum. The distribution of the actual financial contribution amongst the different stakeholders is shown in the following table.

Table 8.11: Distribution of Financial Contributions					
	Total	Students	Govt.	Institutions	Employers
Annual Cont. (Rs)	60,000	24,000	30,000	6,000	<i>Contribution through students and Government in terms of direct support or other financial means</i>
As a % of unit cost	100%	40%	50%	10%	

The above model would enable additional funds to be raised from sources other than government for the expansion of the higher education sector in Mauritius and hence the overall growth of the economy. It provides for the sharing of the cost of higher education with students and families (with student loans to alleviate the burden of the fees). It would enable cost-effective, market-responsive learning to take place; and would also allow an entrepreneurship approach by the institutions. The fact that the government will be contributing to the cost of higher education, it can use the contribution as a leverage to provide for a regulatory framework for the higher education sector and also to insist that higher education institutions offer programmes in priority areas. This can be done through the grant formula discussed in the next Chapter.

Summary

There exists a wide spectrum of funding models that are applied to the higher education sector worldwide. These models provide for all the main actors and beneficiaries of higher education in addition to the government, to contribute and share the cost of higher education.

In order to provide high quality and relevant higher education to an expanding student population, governments in many countries have had to implement sweeping reforms in the funding of higher education. Many countries have judged it essential to develop an equitable framework striking a proper balance

between contributions by the state and by other direct beneficiaries of higher education.

The rising public cost has led many countries; including those where higher education had been traditionally free, to introduce cost sharing for higher education with students.

Consistent with international trends, the demand for higher education in Mauritius also is increasing. Government funding for higher education needs to be supplemented by private contribution through cost sharing by students while at the same time ensuring that no segment of the population be deterred from benefiting from higher education for financial reasons. Continued financial support by the government is fully justified given the wider benefits to society from higher education and the need to regulate the sector.

At present the government funds higher education to the extent of 90%. The higher education institutions raise the remaining 10%. It is assumed that this 10% will remain constant and that any further sharing in the cost of higher education would have to come from the students. Six scenarios for cost sharing of cost of higher education with 80% government and 10% students, 70% government and 20% students, 60% government and 30% students, 50% government and 40% students, 40% government and 50% students, and 30% government and 60% students, have been developed.

At present government expenditure on higher education as a percentage of total government expenditure on education and as a percentage of the GNP is 15% and 0.53% respectively. With a 90% government the government expenditure on higher education in 2010 as a percentage of total government expenditure on education and as a percentage of the GNP is 45% and 1.57% respectively. With a 30% government the government expenditure on higher education in 2010 as a percentage of total government expenditure on education and as a percentage of the GNP is 15% and 0.49% respectively.

On the basis of the present unit cost of Rs 60,000 per annum the cost implications in terms of fees payable by the students under the different scenarios range from Rs 36,000 for a contribution of 60% to Rs 6,000 for a contribution of 10%.

When the contribution from the government is 50% and the fund generated by institutions is 10%, the 40% required contribution from students amounts to Rs 24,000 per annum (Rs 2000 per month). This level of fees from students is acceptable taking into account the level of private tuition fees payable by parents for the students whilst in secondary schools. It is also in line with the findings of the survey carried out. Moreover this level of fees (Rs 24,000 per annum) is significantly lower than what the students would have had to pay if they proceeded overseas for their higher education.

It is also observed that in most of the developed and developing countries selected for comparison purposes, the expenditure on higher education as a percentage on total expenditure on education is around or more than 25%. With a 50% contribution to the cost of higher education the share of expenditure on higher education as a percentage of total expenditure on education in 2010 would be 25%. It is therefore suggested that the level of contribution from the government therefore could be 50%.

The sharing of the cost of higher education amongst the different stakeholders in Mauritius is inevitable. The model presented uses a cost sharing ratio of 50:40:10:0, for the government, the students, the institutions and the employers respectively. Employers, contribute indirectly.

- The model provides for the sharing of the cost of higher education with students and families (with student loans to alleviate the burden of the fees). It would enable cost-effective, market-responsive learning to take place: and would also allow an entrepreneurship approach by the institutions.

CHAPTER 9: A GRANT FORMULA SYSTEM FOR ALLOCATING GOVERNMENT GRANT TO HIGHER EDUCATIONAL INSTITUTIONS.

In Chapter 2 it was pointed out that, because of the line item / incremental budgeting and rigid government policies and regulations, requests for funds through the budget tend to be inflated as these are not based on proper analyses of unit costs. Management of higher education institutions do not like to take the risk of running out of funds during the financial year and hence resort to padding of their budgetary proposals. The result is that higher education tends to be expensive and inefficient. It is essential therefore that any funding allocated to the higher education institutions by the government be based on proper analyses of costs and benefits and on specific criteria and parameters. In this chapter a proposal is made for the use of a grant formula system for allocating government grant to the different higher education institutions in Mauritius. The funding model for higher education proposed in Chapter 8 provides for cost sharing and contribution from the different stakeholders. The contribution from the government to the cost of higher education has been estimated at 50%. The grant formula system proposed in this chapter provides for transparent bases for the allocation of this 50% funding from the government.

Brief Description of the Present Funding System in Mauritius

At present the government provides almost the totality of the funding for higher education in Mauritius. Students enrolled in public higher education institutions in Mauritius do not pay tuition fees. The government provides grant to the higher education institutions to meet their recurrent and capital expenditure through the Budget.

The financial year for the government starts on the 1st of July and ends on the 30th of June of the following year. The budgetary exercise for a particular financial year normally starts in the month of January/February preceding that financial year through a circular letter (the Call Circular) from the Financial Secretary, Ministry of Finance (MOF) inviting the different Ministries to submit budgetary proposals.

The budget is divided into two parts - the recurrent budget and the capital budget. The recurrent budget normally covers staff and running costs (day to day running expenses). The Capital budget covers capital costs (developmental expenses). Prior to 1996/97, the budgets prepared by the different Ministries were discussed with the Budget Bureau at the Ministry of Finance at the Estimates Committee where justifications for the amounts to be provided in the budget were sought. With effect from 1996/97 each Ministry/Department is being provided with a credit ceiling with a view to reduce public expenditure. However, any Ministry may approach the MOF to revise the credit ceiling, if necessary. Within the Ministry of Education (MOE), the Budget of the Primary and of the Secondary Sectors are prepared by the office of the Chief Finance Officer (CFO) of the Ministry of Education.

A circular is issued to all the Heads of Schools and Heads of Divisions/Department of the MOE by the CFO in January every year requesting for budgetary proposals for the forthcoming financial year to be submitted to the Director/Officer in Charge of Primary or Secondary Sector as the case may be. The proposals received are analysed by the Officer in Charge/Directors concerned who then makes recommendations to the CFO on the budgetary proposals. A meeting of the Estimates Committee at the level of the MOE is then organised to discuss the proposals and to decide on the amount to be allocated to each item in the budget. The Budgetary System in the primary and secondary sector is based on the conventional (incremental) budgetary system.

The process for the preparation of the budget in the higher education sector is briefly explained hereunder.

Public higher education is provided in Mauritius by five institutions, i.e. the University of Mauritius, the Mauritius Institute of Education, the Mahatma Gandhi Institute, the University of Technology, Mauritius and the Mauritius College of the Air. All five institutions depend heavily on government for funds. The Tertiary Education Commission is responsible for the allocation of budgetary resources to the five institutions. The budgetary allocation by the government is provided in the form of a one line item in the government budget for all these institutions and for the Tertiary Education Commission (TEC).

Prior to the establishment of the TEC (1988) the higher education institutions submitted their budgets directly to the Ministry of Education. Some discussions took place between the institutions and the MOE on the Budget. However, the final figures to be allocated to the higher education institutions were decided at the Estimates Committee held at the Ministry of Finance. Each higher education institution was requested to defend its budget at that Committee and provisions were made for each institution in the National Budget.

With the establishment of the TEC, the higher education institutions were requested to submit their budgets to TEC. The TEC had as one of its objectives "to receive and allocate funds to the TEIs". On the basis of that objective, a request was made to government to have a one line item for the whole of the higher education sector. Government agreed to the request and as from financial year 1996/97 a one line item was created in the national budget. With the coming into operation of the one line item all funds allocated to the higher education institutions were channelled through TEC.

Around the end of January every year the Commission requests for budgetary proposals (both recurrent and capital) from the higher education institutions through a circular letter where guidelines for the preparation of the budget are provided. An indication of the date at which the budget should be submitted is also given.

Once the budgets are received by TEC, which is usually in early March, they are examined in light of the plans for the institutions and also for the sector. Consultations are carried out with the institutions and where necessary they are asked to modify the budgetary proposals. The separate budgets are then consolidated with that of TEC to form the budget for the higher education sector. This consolidated budget is then forwarded to the Ministry of Education.

The Ministry examines the proposals and after discussions with TEC include the same in its budgetary proposals which are then forwarded to the Ministry of Finance. The MOE has a credit ceiling from the MOF within which it has to prepare its budget: where the ceiling set by the MOF is not enough for the MOE, negotiations are made with the MOF for more budgetary provisions.

Once the total amount to be allocated to the sector is known, a further exercise is carried out to redistribute the funds amongst the five institutions. As far as the recurrent budget is concerned, this is done on the basis of the original budget submitted by the institution. With regards to the capital budget, funds are allocated to each institution project wise.

Funding of Activities

Funds for current expenses are released to the institutions by TEC on a monthly basis. The higher education institutions are requested to submit a projected cash flow statement for the quarter for which funds are required.

An actual cash flow statement for the preceding quarter is also requested. The amount to be released to each institution is arrived at after careful examination of the cash flow statements, actual expenditure, new activities of the institution, plans of the sector, budgetary provisions and also priorities of the sector. Once the Commission is satisfied of the amount to be released to any institution a request is made to the MOE for funds. Funds are deposited in the account of TEC and then released to the higher education institutions

The institutions receive funds for recurrent and capital expenditure based on their approved budgets and cash flow statements submitted. Basically the budget is determined by input factors such as staff cost, cost of running offices, stationery, repairs and maintenance, research expenses and communication costs. For staff cost, funds are allocated by the government not for personnel expenditure but according to the number of posts filled or to be filled. The rationale behind the filling of a post is not questioned. Financial management is basically concerned with accounting and managing the budget within the amount provided.

There is need for a more rigorous system of allocating government grant and of financial management in the higher education institutions. The success of each of the institution constituting the sector will not depend mainly on academic expertise and educational outcomes but will also be judged by how the institutions should mobilise, allocate, monitor and control the use of financial and other resources.

Use of Formula Funding

As already pointed out on Chapter 3, formula funding became popular in the 1960's. Presently, its use is widespread among Asian, European and North American higher education institutions. It is useful in making budgetary control that is an important management tool for planning, resource allocation, control and evaluation of any institution, efficient and effective.

Funding formula uses objective data to estimate the future budgetary requirement of higher education institutions.

A robust funding formula is usually constructed from a set of indicators associated with institutional characteristics. Generally, however, separate formulae are used for teaching and for research. The number of students enrolled, the number of students graduating, the amount of space utilized and the number of teaching hours are some of the parameters used for determining

the formula for funding teaching. For research, the type of research, the number of research positions filled, the number of academic staff and the quality and volume of output, amongst others, are frequently used parameters for constructing a research funding formula.

The Need for Formula Funding for Allocating Government Grant to Higher Education Institutions in Mauritius

The budgets of the higher education institutions in Mauritius are prepared on the incremental basis. They are based on previous year's provisions. As already shown in Chapter 3, this method provides no rationale or scientific basis for allocation of funds. Furthermore, control and evaluation of the performance of the institutions are weakened. It has been observed, for example, that in some cases even where the number of students has decreased considerably, funds allocated have increased by much more than the inflation rate. (E.g. MIE, FTE in 1996: 1407, grant Rs 75.2m; FTE in 1997: 925, grant Rs 79.5m).

With a view to move from the existing conventional incremental budgeting system to a more scientific one based on inputs or outputs and to develop and implement a transparent method of resource allocation to the higher education institutions based upon need, performance and supported by strategic institutional plans a formula based funding approach would be more appropriate.

Given that presently the predominant activity of the higher education institutions is teaching, there is merit in developing and instituting a formula for allocating government grant using a teaching formula. This funding formula can, however only be applied for allocating government grants to the higher education institutions for students enrolled. For other activities such as production of audiovisual programmes by the MCA and cultural activities of the MGI, funding would need to be different. The formula based grant is intended to help these higher education institutions to meet the direct and indirect costs (academic and non-academic staff, equipment, space, library

facilities, consumables, extra-curricula activities etc.) of providing teaching and learning to students. In implementing such a formula the following principles are critical:

The promotion of responsiveness:

- (a) The funding method should be sufficiently flexible to allow it to meet changing national needs and priorities;
- (b) The funding should promote institutional responsiveness to the needs of students, employers and society and should support life-long learning;
- (c) The funding method should respect the diversity of provisions in the various institutions (public and private) and by overseas institutions through the flexible mode;

The promotion of value for money:

- (a) The funding method should encourage the higher education institutions to broaden their funding bases;
- (b) The funding method should promote efficiency;

The promotion of quality:

- (a) Eventually the funding method should complement the teaching quality assessment process, by rewarding high quality and penalizing quality which is unacceptably low;
- (b) The funding method should be sensitive to instances where student progression is unacceptably low.

In order not to disadvantage the higher education institutions on their research and other non-teaching activities, financial support is necessary through developing an appropriate funding formula incorporating those activities. However because of the low level of research activities in the Mauritian higher education system this is not a pressing need. For the present, it would be more appropriate to allocate funds to research and the other non-teaching activities on a non-formula basis whereby development of research infrastructure and postgraduate research training would be encouraged. The onus will thus fall on the academic staff and researchers of the higher education institutions to seek funds for their research projects from other sources too.

The non-formula funding approach could also be used by the TEC to nudge the activities of the higher education institutions in line with the national policy on higher education through supporting special initiatives such as widening access, enhancing quality, library developments, IT developments, support for students with special needs, professional development of staff of the higher education institutions and provision of continuing education.

Proposed Methodology of Calculating Recurrent Government Grant Allocation to the Higher Education Institutions

It is proposed that the formula takes into account the number of students, the field of study and a standard unit of resource. The grant will be determined by multiplying the number of students in a subject area by a standard unit of resource for that subject area. In the event that tuition fees are introduced, deducting the tuition fees associated with the number of students could be introduced in this equation or the value attached to the standard unit of resource could be reduced. The number of students to be used in the equation will be based on the number of full-time equivalent (FTE) students enrolled. The calculation of the FTE as used by the TEC at present is given below.

Full time Degree= 1 FTE

Full time Diploma=1FTE

Part time Degree/Diploma=0.75 FTE

Part Time Certificate course=0.4 FTE
Postgraduate courses (Full time)=1.2 FTE
Postgraduate courses (Part time)=1FTE
Training year for B. Tech courses (i.e. Yr 3)=0.3 FTE
MIE Full time Certificate course=1 FTE
MIE PGCE =0.75 FTE
MGI Non Award Courses =0.2FTE
Distance Education Courses= 0.5 of the relevant FTE

In addition to the level and mode of study, the cost of higher education also varies with the subject areas. The cost of producing a graduate in Information Technology, for example, where expensive equipment and laboratories are required, is much more than that of producing a graduate in History. It is important that some form of weighting system be used so that estimates become more realistic. The subject weightings used here have been arrived at after comparing the unit cost of the different Departments and Faculties in which these subjects are taught. It has been found that the cost of education for subjects requiring laboratory teaching and highly specialized equipment is about 1.5 times that of subjects which require only face-to-face teaching such as Humanities and Social Sciences. The cost of education for subjects requiring limited laboratory teaching and fieldwork is about 1.3 times that of subjects, which require only face-to-face teaching.

Taking into account the portfolio of courses currently being offered in the higher education institutions, the subject areas can be divided into the following categories (Table 9.1) with a weighting allocated to each category as the cost of providing courses in each category are different.

Table 9.1: Weightings for category of subjects	
Category	Weighting
Subjects requiring laboratory teaching, high cost specialised equipment and field work	1.5
Subjects requiring laboratory teaching and Limited fieldwork	1.3
Others	1.0

The weights have been based on the fact that costs are less where only face to face teaching are required than where special equipment and laboratories and workshops are required. On the basis of the above, weights have been allocated to the different subject areas as shown in the Table 9.2 on the next page.

Table 9.2: Weighting for subjects	
Subject Areas	Weighting
Category 1	
• Humanities & Languages	1
• Management	1
• Business Studies & Economics	1
• Social Science	1
• Law	1
• Teacher Education	1
Category 2	
• Fine Arts, Performing Arts	1.3
• Agriculture	1.3
• Science	1.3
Category 3	
• Information Technology & Computing	1.5
• Engineering	1.5

On the basis of a cost Rs 60,000 per student per annum a “price” representing the percentage of government funding has been attached as the grant element to each FTE student.

Taking into account the above, the proposed formula for allocation of Grant is as shown in Table 9.3.

Table 9.3: The proposed grant formula				
Subject Areas	No. of Students (FTE)	Weighting	Gov. Grant At 50% (Rs)	Total Grant
Category 1	A	1	30,000	$A \times 1 \times \text{Rs } 30,000$
Category 2	B	1.3	30,000	$B \times 1.3 \times \text{Rs } 30,000$
Category 3	C	1.5	30,000	$C \times 1.5 \times \text{Rs } 30,000$
Total				Total Grant

The price of Rs 30,000 used in the formula would have to be adjusted on a yearly basis to take into account inflation. The weights allocated to the different subject areas can be used as a leverage to induce institutions to either offer some categories of subjects or even to discourage them from offering certain categories of subjects.

The above-proposed formula, like any other funding formula, would have to be properly administered so as to take into account potential shortcomings. It should be reviewed regularly throughout its implementation so that it takes into account the following:

- (a) It should not overshadow issues of institutional quality. All institutions are not homogeneous and hence a standard formula may not be appropriate. The formula should take into account specificities of individual institutions. In Mauritius the MGI, for example, is a centre for oriental languages and culture. It may have very low enrolment in certain areas and hence a formula funding based on student numbers might not be appropriate.

- (b) The response time to changing circumstances should be minimized. This is vital so that there is no gap between the funding formula and actual activities covered by the funds provided through the formula. Moreover it should not restrict innovation in teaching and research, mainly with regard to the needs of non-traditional students.
- (c) It should not ignore economies of scale, fixed versus variable costs. With increases in size cost tend to decrease. This is an important factor which should not be overlooked while designing the formula so that the funding provided through the formula reflect the actual cost as far as possible.
- (d) It should not overlook varying capacities among institutions in generating their own revenue. The ability of different institutions to raise income from other sources depend on a variety of factors such as their area of activity, location, management initiatives, linkages with the outside world and quality of research and staff. The formula should not be designed to penalise such institutions for raising funds from other sources. It should take into account such ability so that such institutions are not provided with funds that would not be required.

Application of the proposed formula to the University of Mauritius

An application of the proposed formula to the University of Mauritius for the year 1999/2000 has been made in this section. The calculation of the FTE is shown in Table: 9.4

Level	Faculties						Weights	FTE
	Agric.	Eng.	Law and Mgt.	Science	Social Science & Humanities	Total		
Post Grad (FT)	5	5	21	15	2	48	1.2	58
Post Grad (PT)	27	77	92	44	26	266	1.0	266
Degree (FT)	318	1,105	572	571	502	3,068	1.0	3,068
Degree (PT)		38	149		170	357	0.8	268
Diploma (FT)	18	20		32		70	1.0	70
Diploma (PT)		86	54	45	181	366	0.8	275
Certificate (PT)	91					91	0.4	36
TOTAL	459	1,331	888	707	881	4,266		4,040

On the basis of subject category weighting, the 4040 FTE have been categorised as shown in Table 9.5.

Subject category	Head count	FTE
Category 1: Subjects requiring laboratory teaching, high cost specialized equipment and field work	1,331	1,301
Category 2: Subject requiring laboratory teaching and limited field work	1,166	1,104
Category 3: Others	1,769	1,635
Total	4,266	4,040

The calculation of government grant which would be allocated to the University of Mauritius on the basis of the proposed formula would be as shown in Table 9.6.

Subject Areas	No. Of Students	Weighting	Govt. Grant at 50% (Rs)	Total Grant (Rs)
Category 1	1,301	1.5	30,000	58,545,000
Category 2	1,104	1.3	30,000	43,061,850
Category 3	1,635	1.0	30,000	49,053,000
	4,040			150,659,850

The funding of the University of Mauritius with the cost sharing ratio and the formula proposed would be as shown in Table 9.7.

Sources		Amount (Rs)
Government grant		150,659,850
Tuition Fees	4,040 x 24,000*	96,960,000
Income (10%)		27,513,317
Total		275,133,167

**The FTE has been used as the fees charged to the students would be proportionate to the level and the mode of study.*

The grant provided to the University of Mauritius for the year 1999/2000 was Rs 193,500,000 (including grant for research) and the budget was of the University for that year was Rs 237,000,000. It is observed that with the new funding system the financial burden of the government is reduced but the University of Mauritius will have more financial resources.

Summary

In this chapter a proposal has been made for the use of a grant formula funding system for allocating government grant to higher education institutions. With a view to move from the existing conventional incremental budgeting system to

a more scientific one and to develop and implement a transparent method of resource allocation to the higher education institutions based upon need, performance and supported by institutional plans a formula based funding approach would be more appropriate.

The development of a formula based funding can be based on a number of parameters such as the number of students enrolled, the number of students graduating, the amount of space utilized, the number of teaching hours, the type of research, the number of research positions filled, the number of academic staff and the quality and volume of output.

Given that presently the predominant activity of the higher education institutions is teaching, there is merit in developing and instituting a formula for allocating government grant using teaching as a main component.

It is proposed that the formula takes into account the number of students, the field of study and a standard unit of resource. The number of students to be used in the equation will be based on the number of full-time equivalent (FTE) students enrolled as against head counts.

Taking into account the fact that the cost of provision of courses vary from course to course depending on whether only face to face teaching or whether special equipment and laboratories and workshops are required, weights ranging from 1 for subjects like Humanities and languages, to 1.5 for subjects like IT and Engineering have been allocated to the different subject areas

On the basis of a cost Rs 60,000 per student per annum a "price" representing the percentage of government funding has been attached as the grant element to each FTE student. The price of Rs 30,000 has been used in the formula. This could be adjusted on a yearly basis to take into account inflation. The weights allocated to the different subject areas can be used as a leverage to induce institutions to either offer some categories of subjects or even to discourage them from offering certain categories of subjects.

CHAPTER 10: CONCLUSION

Sustained investment in higher education does have a positive impact on economic development. In Chapter 4 it was shown that there is also a high degree of correlation between the HDI and GNP per capita. Many developing countries have acknowledged these relationships and are now mobilising resources for investing massively in higher education. Although investment in higher education does lead to higher rates of economic growth as evidenced in numerous studies of this particular topic, it may not be the only factor. Work ethics and attitude towards work are equally important. The direction of causality between investment in higher education and economic development has so far not been unambiguously established. However, we do know from microeconomic theory and evidence, particularly that supplied by human capital models, that labour productivity and total factor productivity both increase as an economy invests in human capital through all levels of education. In the 21st century, the 'knowledge' economy is even more important than the 'industrial' economy of the past. Therefore investment in higher education can only have a positive impact on productivity levels in those economies where investment in the 'knowledge' industries is a key part of their economic development strategy. This is exactly the nature of the development strategy being pursued in Mauritius.

The success of Mauritius, in this new millennium, will depend to a large extent on the ability of the country to sustain its competitive edge against the backdrop of growing challenges of globalisation and free trade. Mauritius will have to develop itself into a "knowledge based society". It will have to produce highly qualified manpower with advanced knowledge. For this to happen, Mauritius has no alternative than to increase access and to improve the quality of its higher education.

The participation rate in higher education in the country, presently 12% of the relevant age group (19 to 24 years), is projected to increase to 30% by the year 2010. In terms of student population, this means an increase from 15,317 to

42,000. Increasing access to higher education to that extent will require huge investment in infrastructure and teaching and facilities. Additional funds will therefore be required.

The government of Mauritius has so far been the major funder of higher education in the country. The policy of free higher education in Mauritius has some very important effects in the economy. It transfers wealth from taxpayers in general to those families who take advantage of the tuition free higher education. It stimulates the demand for entrance into the publicly funded institutions and works to the detriment of the private higher educational institutions that are not subsidised. This distorts the market for higher education in Mauritius.

A student who completes a bachelor's degree in four years would have received a subsidy of more than Rs 240,000 from the government. The beneficiaries of this subsidy come from all points in the economic spectrum, but are largely students from families with incomes significantly higher than the average. According to the survey results discussed in Chapter 7, more than 83% of the students in the higher education sector are from high-income households and more than 96% are from middle and high-income households.

Many of the beneficiaries of the policy of free higher education are well above average in income. It is evident that there is a reverse "Robin Hood" effect in Mauritius, whereby relatively low-income workers whose children do not attend and most probably cannot attend higher education institutions must pay taxes to help pay the bill for children of well-to-do professional and managerial families who enrol in the system. The data reinforces the point made by *Professor Gareth Williams, 1992* that, "*The aggregate effect of subsidizing higher education.....is often to transfer resources from relatively poorer families to richer families.*"

If the benefits of higher education accrue to the individual recipient, why should other people subsidise this particular investment. Stated differently, why should a textile mill worker pay taxes to help send the sons and daughters

of top executives to the University of Mauritius? It is logical therefore, that the students who benefit directly from higher education should contribute to the cost of their higher education.

It has also been seen that the policy of free higher education acts as a barrier to access to higher education itself. The higher education institutions receiving government grants in Mauritius are not allowed to charge tuition fees to the students. Their expansion to increase access, therefore depends on the limited funds they receive from the government. As the funds from the government are limited, access to higher education is also limited. The present free higher education system in Mauritius therefore, is one that is not consistent with fairness or sound educational practices. It compels taxpayers in general to subsidise the educational investment of those who go to publicly funded higher education institutions, many of whom come from families that are well above the average income.

In Chapter 6, an estimate of the cost of higher education up to the year 2010, based on the projected enrolment rate of 30% in 2010 and the present level of government funding, was made. The results show that it will be very difficult for the government to maintain the same level of financial support to higher education institutions in the year 2010 as at present. Table 6.4 in Chapter 6, shows that, on the basis of the projected demand and costs for higher education up to the year 2010, the impact on public expenditure and the GNP is so large that it would be difficult for the government alone to continue to bear all the cost of increasing access to higher education. It was found that with the present 90% government funding of higher education, the government expenditure on higher education, as a percentage of total government expenditure on education will increase from 15% to 46% and that government expenditure on higher education as a percentage of the GNP will increase from 0.53% to 1.47%. The financial sustainability of the higher education system itself is threatened. The hypothesis that government alone cannot continue to bear all the costs of higher education is therefore valid.

The fact that higher education is basically free in Mauritius shows that the financial commitment of the government to higher education is very strong. However education cannot be a "free" good. The production of any good or service that requires scarce resources can never be free; even if the student pays little or none of the cost, other people must bear the expense. As a result of the massive increase in higher education enrolment the government, therefore, has to review its funding and management of the higher education sector.

However, up to now, very little progress has been made in diversifying the sources of income of higher education institutions in Mauritius and the government has remained the key player in financing higher education. It has been shown in Chapter 8, Table 8.8, that when cost sharing is introduced and the share of the government is 50%, the government expenditure on higher education, as a percentage of total government expenditure on education will increase from 15% to 25% and that government expenditure on higher education as a percentage of the GNP will increase from 0.53% to 0.82%. This increase is more acceptable and can be accommodated if government wants to meet the targeted enrolment rate of 30% in the higher education sector. The government, however, should continue to provide financial support to public higher education institutions, to regulate and monitor the higher education system and to meet the educational, social, economic, scientific, cultural and political objectives of the nation. In fact, many of the benefits to the public would not be fully captured if the higher education system were to be driven solely by private funding, especially access, equity and participation from lower income groups, quality of programmes and relevance of programmes to national development.

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In order to maintain the level of expenditure on higher education at almost the same level as it is at present, in terms of the percentage of public expenditure on education and in terms of the percentage on GNP, the share of government funding of higher education will, therefore, have to be reduced from its present level of 90% to 50% by the year 2010. This will not only reduce the financial burden of the government, but will also bring the level of government

expenditure to the sector, in terms of the percentage of total public expenditure, more in line with that of other countries in the world and in particular with those countries identified in Chapter 4. The 50% contribution from the government could be allocated to the different higher education institutions on the basis of the formula funding system presented in Chapter 9.

The remaining 50% of the funds will have to come from other sources namely, students, employers and institutions. However, the higher education institutions cannot be called upon to finance a very big share of the costs. The mission of higher education institutions is the creation and dissemination of knowledge. By requiring these institutions to raise their own funds may lead them to drift away from their mission. In that respect, a contribution of 10%, as targeted by many countries, could come from the institutions by way of income generation activities. Employers can contribute indirectly in the form of scholarships, grants and bursaries. The remaining 40% will therefore have to come from the students in the form of tuition fees. The results of the survey and the interviews discussed in Chapter 7 show that there is a strong willingness to pay for higher education in Mauritius. The hypothesis that there are alternative ways to mobilise additional funds for the higher education sector in Mauritius is therefore valid. The survey has also indicated that with cost sharing the students expect improvements in access, quality and accountability through the payment of fees. Institutions will have to respond thereby increasing efficiency.

With the introduction of tuition fees, the government should also introduce means-tested financial assistance targeted directly at those students who show academic promise but whose families are not wealthy. The combination of tuition fees for most students and financial aid for those who would have difficulty in paying, would place more of the burden of paying for higher education with the main beneficiaries. With the implementation of an appropriate loan scheme to help students, access to higher education would be easier even to students from poor families.

The funding model proposed for higher education in Mauritius, therefore, ensures the financial sustainability of the system through cost sharing and provides for assistance to students with financial difficulties through means tested grants, scholarships and bursaries and a student loan scheme as a deferred payment mechanism. Essentially the model will have the following features:

- (a) 50% of the funds will come from the State through a grant allocated to the different higher education institutions on the basis of the formula.
- (b) 40% of the funds will come from students and their families, in the form of tuition fees. Means tested financial assistance including a student loan scheme would be introduced so as not to deter access to higher education to students with financial difficulties.
- (c) 10% of the funds will come from income-generation activities by the institutions.
- (d) Employers would contribute indirectly and could be given incentives to sponsor their employees and children of their employees and for granting scholarships and bursaries.

The combination of policy changes proposed would change the funding and the management of the higher education system in Mauritius into a more rational and self-supporting one with less of the cost borne by taxpayers and more of the cost borne by the students and families who directly benefit from higher education.

The Chi-square analysis undertaken in Chapter 7 clearly demonstrates that there is no significant difference in the willingness to pay a contribution to higher education between male and female students. However the intention to go on to further studies is clearly dependent upon a student's household income as well as dependent upon gender. It is therefore concluded that the decision to enter higher education in Mauritius at the undergraduate stage is

not significantly affected by either household income or gender. Nonetheless, the decision to undertake further study is more problematical and this may well require further research.

The movement from free higher education to 40% funding by the students should not prove difficult in Mauritius in view of the value Mauritians place on education, of the willingness to pay for additional education at lower levels, of the benefits of higher education to the stakeholders and of the increasing demand for higher education including demand as a result of qualification inflation. It was also shown in Chapter 7 that the Internal Rate of Return on higher education is quite high at 14.77% and hence for this reason also, it is expected that the demand for higher education will continue to increase. Moreover, on the grounds of promoting greatest happiness of the greatest number of people, of efficiency and economic justice and for supporting those who are unable to afford higher education, the government can justifiably expect students to share the cost of their higher education. In fact with cost sharing there would be closer monitoring of performance of higher educational institutions. Students will receive a subsidised higher education, but will also have to pay partly for it. They will require the higher education institutions to offer value for money and as a result there will be better governance, improved accountability and more transparency in the system. It is envisaged that, with the above-mentioned changes, the role of the government will start shifting from that of funding of higher education to that of assisting in higher education provision.

The timing for the introduction of reforms in higher education in Mauritius is very appropriate now. Politically the government has an absolute majority in the National Assembly. Moreover the University of Technology, Mauritius began its work in 2001 and charged tuition fees from its very first day of operation and its courses were over subscribed. There were no complaints whatsoever from any quarters. It has already been pointed out that parents are already contributing at the pre higher education levels. The demand for higher education is ever increasing for various reasons including the expected higher

earnings potential. All these current elements suggest strongly that the timing for the introduction of tuition fees is very appropriate in Mauritius.

In the course of this research many areas have been identified which clearly require further research and analysis. These are important to future educational planning and policy in Mauritius and are summarized below:

1. **IRR:** A closer analysis of the IRR to higher education by subject group, occupations and gender is required in order to better understand the recent, current and future dynamics of the Mauritian graduate labour market.
2. **Sensitivity Analysis of the Population Forecasts:** This is required in order to better understand what the impact of the proposed funding model and future enrolments will be given that we already know the population forecasts contain a margin of error per age-group.
3. **Funding of private HEI's:** Currently students attending these institutions receive no explicit or implicit subsidy from the State. This has implications for social equity, accessibility and potentially, the quality of education provided in such institutions. Further development of the proposed funding model to incorporate alternative scenarios for the funding of private HEI students is therefore required.
4. **Social Equity:** In the State supported system the proposed funding model will have implications for access to higher education that require more consideration than is feasible in the present research study. Future work on this area and how the funding model proposed may incorporate it is therefore essential.
5. **Willingness to pay for higher education:** It is quite reasonable to expect that the willingness to pay will vary with the 'learning model'. That is, will the willingness to pay be different for full time, part time and distance learning models? This clearly needs to be addressed.

Diversification in higher education funding systems is being almost universally adopted irrespective of the levels of economic development. This reform at the global level can be seen in the following trends:

1. The sharing of higher education costs among the different beneficiaries of higher education i.e., students, employers, government and institutions.
2. The emergence of means-tested grants, scholarships and bursaries and student loans in many countries.
3. The development of more cost-effective and market-responsive learning in institutions.

Higher education institutions, especially in developing countries have the dilemma of educating and training the much needed human resources for sustaining productivity and economic growth against the back ground of rising demand for education but at the same time find the financial resources at their disposal becoming more and more limited. Such institutions occupy a high position in the society. They are expected to be centers of excellence, to be responsive to labour markets, to be efficient and to promote equity and equality. In order to strengthen the quality of their higher education and to improve long-term financial sustainability, there is a need to adopt more effective financial strategies to mobilize, allocate and utilize resources. Cost sharing with the beneficiaries of higher education appears to be the only way forward for such countries. This alternative source of funding may likely have the effect of leading to short term disturbances such as student activism and making the decision makers unpopular. However it may prevent in the long term much more negative effects such as decreasing productivity, loss of international competitiveness and decreased earnings.

Higher education cannot continue to be a “free good”. The WTO has included Higher education on a list of services to be traded internationally. Higher education is moving towards increased rivalry and profits. Students are now customers and are free to choose the best course they can find in the market that has to a significant extent become worldwide and is rapidly moving towards a globalised industry.

With the implementation of the cost sharing system with tuition fees, the government can greatly extend financial assistance to poorer families whose children have the ability and desire to attend higher educational institutions and hence enable more students to enroll for higher education. Moreover the funds released can also be used to finance other levels of education and/or other sectors of the economy. In other words, the introduction of cost sharing amongst the stakeholders of higher education in Mauritius is more likely to raise access and enrolments and enable Mauritius to progress along similar lines with countries like Singapore with which it would like to benchmark, while the status quo is more likely to reduce these. This most certainly applies to many countries where higher education is still being funded mainly by the government. Tuition fees will increasingly be introduced to supplement government funds for higher education without disadvantaging any segment of the population. This can be done through means tested and non-refundable bursaries to low-income background and disadvantaged groups.

The active financial participation of the government in higher education is fully justified. The kind of knowledge that will be needed in the future cannot be predicted. Left to themselves the drive for profit will push higher education institutions to emphasize programmes that are linked to the market so as to attract students possibly to the detriment of other subjects and pure research. The financial participation of the government will make it a stakeholder and it can provide the framework, general directions and guidance and assist the higher education institutions. The role of the government will increasingly be limited to the regulation of standards of quality and protection of the students, ensuring that there is appropriate academic coverage for the needs of the economy and the society and ensuring equity and equality of access to higher education.

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APPENDICES TO THE THESIS

APPENDIX I: HISTORY AND POLITICAL DEVELOPMENT OF EDUCATION IN MAURITIUS

1 Educational Development in Mauritius during the Colonial Period

Education in today's independent Mauritius owes many of its qualities to the schooling developed in French and British colonial times. Apart from Prithipaul's Comparative analysis of French and British colonial policies of education (1976) and Ramdoyal's The development of education in Mauritius (1977), there is very little that has been written on the education of colonial times.

Education in Ile de France as a French colony

The early years of French colonisation were insignificant in terms of educational development. Although, attempts to develop the island began in 1735, it was not until 1767 when the island became a French Crown colony, that a local education became a subject of concern both to administrators and to private citizens who wanted to live on the island as settlers. This was when colonial education began.

Governor Mahé de Labourdonnais first attempted social and administrative reforms on the island during his period of office from 1735 to 1746 but *Toussaint (1977)* points out that Labourdonnais did not have the support of the French East India company, which was only concerned with trade, and the maximisation of profits. No educational activity took place during the Company's administration. The first solid signs of some interest in education on the part of the French administration appeared in 1789, when Governor d'Entrecasteaux recommended the creation of a school in the colony. The Colonial Assembly, which took charge of the government of the colony in 1790 announced that it was the state's responsibility to provide moral and political education to each individual (*Cochin, 1936: 127-128*). Prithipaul (1976: 46) argues that:

Implicit in the proclamation was the hope that there would be a uniform type of education that would be made equally available to all citizens, no matter what class or socio-economic group they came from.

The proclamation to provide moral and political education to all citizens was not easily implemented. However, the Assembly did not succeed in raising necessary funds and failed to assume the responsibility of running a national school. The help and support of private citizens was therefore called for to set up a National College, and an appropriate curriculum that would be acceptable to the government was decided. It was decided that the Municipality would have the responsibility of supervising the school and that the Chairman of the Assembly and the Advocate General would inspect the school (*Duvivier, 1890, 14 December: 337-343*).

The Assembly approved the plan and the National College was set up. Difficulties started making themselves felt after a couple of years. Financial problems as well as political pressures existed and the outbreak of smallpox in 1793 only made things worse. The College was temporarily closed. The College ceased to exist after 1794 (*Revue historique et littéraire, 25 January 1891, no. 34:409*).

The Commission of Public Instruction drew up a plan for a national education system in 1799. The plan was based on educational reforms that were taking place in France. It was also based on the *Plan Lakanal (1794)*, which recommended the setting up of the Ecole Centrale. The Ecole Centrale was established as the national institution.

Unlike the National College, which in line with the revolutionary government in France tried to detach education from the Church, the Ecole Centrale employed priests as teachers, leading to a strong religious bias. Classes in religious instruction were included in the curriculum (*Duvivier, 1891:471*). The *Ecole Centrale's* main aim seemed to be to provide an education for the children of the upper class. *Duvivier* notes that students from other French colonies in Africa and Asia were encouraged to attend the school. The students were children of the Colonial administrators who were residing in other parts of the empire. Fees were paid and the school became financially independent. *Duvivier* also made it clear that there were a few students of lower socio-economic status who were admitted but their admission depended on respectability, social origin and the social conduct of their parents. The Municipality and the Commission of Public Instruction provided the details on the children's

family background (*Duvivier, 1891: 456*). The pattern of admission emerging in such a school indicated the elitist nature of the school.

In order to maintain the *Ecole Centrale's* unique position, the creation of other secondary schools was restricted. The only other secondary school that existed was one for the Coloured children (*Duvivier, 1891: 456*). Since these children could not get access to the *Ecole Centrale*, the Assembly and the Commission of Public Instruction approved the establishment of a separate school. The facilities available and the curriculum adopted in that school revealed the great disparities that existed between the two schools. *Prithipaul (1976: 62)* writes:

The stratified educational system placed the Ecole Centrale at the apex of the educational pyramid. While the external matters like class schedules, examination times and dates were uniformly adopted, yet the content of the curriculum of the Ecole Centrale remained the monopoly of the elite that had access to it. Moreover, the competitive nature of the examinations further stratified even those candidates who attended the Ecole Centrale itself.

Educational development from 1803 to 1810

When Napoleon took power in France, the colonies underwent a number of changes. The first major educational change under General Decaën was the dismissal of the Commission of Public Instruction that had managed education in the colony. Education was placed under the central jurisdiction of the colonial Prefect. The *Ecole Centrale* was replaced by the Lycée that was the new institution for secondary education in France under Napoléon (*Duvivier, 1891: 484*). *Duvivier* also notes that the Bureau d'Administration Générale was formed to take the responsibility of educational planning in the colony (*Duvivier, 1891: 484*).

The Lycée carried on with all the subjects that were taught in the *Ecole Centrale*. The most important change in the curriculum was the introduction of military training. The curriculum was very much in line with the educational philosophy of Napoleonic Rule. The Lycée became one of the most famous institutions in the French Colonies.

It attracted students from Dutch, Portuguese, and other French settlements (*Duvivier, 1891: 495*). As the numbers seeking admission grew, Decaën took measures to extend the buildings so as to accommodate the increase in enrolments. Moreover, the existing secondary schools during that period were closed down and The Lycée was the sole institution that offered secondary education on the island.

The history of the French colonial period is characterised by the reluctance of the colonial administration to expand education on the island. There was strong discrimination against Blacks, Coloured and women. Education's role was very limited and catered mostly towards the production of the few administrators that the island needed. At the time, the population was very small, the economy not very developed and there was hardly any need for skilled labour; hence the rulers did not think it necessary to educate the people. They wanted the masses to remain illiterate since they feared that literacy might start empowering the oppressed.

British colonial education 1810-1968

When the British took control of the island in 1810, the Roman Catholic church, the French Civil Code and French language and culture, already well established on the island, were given official sanction and have until today remained dominant cultural features of Mauritius. British rule was significant economically and politically, but only to a lesser extent culturally.

Since the British did not want to upset the French population of the island, many of the institutions were left untouched. As soon as civilian rule was restored, the Lycée was reopened for its original purpose but its change of name to that of Royal College. The latter was to be under the patronage of Prince Regent of England (*Board of Education Report, Mauritius, vol. 13, 1901: 201-202*).

Move towards a British system of education

Gradually, the education system was becoming more British. In 1840, the Royal College underwent some changes. An English rector was appointed instead of a French 'provisieur' as its head and the predominantly French speaking staff started to

be replaced by English speaking teachers. It was decided that the College should no longer function as a Lycée but should be organised as an English Grammar school instead. Under Governor Gomm (1842-1849), English took precedence over French and the education system was organised along English Lines.

Educational legislation

In the year 1941, *Ward* was appointed the new Director of Education. He carried out a survey on the state of education that was already regarded as deplorable by the previous Director, Bateman. *Ramdoyal* quotes Bateman as saying:

Schools exist in Mauritius and cannot now be closed, but they were better closed than remain monuments of wasted money and useless energy, where children are looked after, perhaps kept out of mischief, but certainly not educated (Ramdoyal, 1977: 117)

The Ward report came out in 1941 and contained recommendations on various aspects of Mauritian education. The Education Act that was passed in 1941, as a result of the findings in the Ward Report, brought a number of changes. A single educational committee replaced all previous educational committees. An assistant director assumed the responsibility for the administration of all types of schools - primary, secondary aided and non-aided. Also, the governor of the island was given power to make regulations. The education system was for the first time being given an organised structure.

Education in post independence Mauritius

Colonial schooling was divided along racial, ethnic and gender lines but a few Indians and Creoles did penetrate the schooling system as colonial educational policies started to change and the economy too started expanding. The curriculum, with its emphasis on languages such as Greek, Latin, English and French and the literature, history and geography of Europe added an intellectual element to the

dependence on western culture. The asymmetry in the relationship and flow of culture was confirmed by schooling.

Although education in colonial Mauritius never played a major role in mobilising the masses, it certainly shaped some people's ideas and thinking. Many of the Mauritian leaders experienced oppression and blatant injustices. These experiences contributed to the development of strong anti-colonialist feelings and the urge to bring about change in the conditions of life of the people and specially their education.

Education in the economic development of Mauritius

During the post-independence period, education in Mauritius became increasingly an affair of the state. Discrimination on the basis of race, colour and sex was reduced. The state played an even more important role in educational matters since independence. The newly born state concentrated on bringing education more in line with the development needs of the country - these needs relating mainly to improvements in the economic performance of the country.

Mauritius' national development plans since independence

A glance at the different national development plans, beginning with the first 1971-1975 national plan and continuing through to the 1988-1990 development plan and the 1991 Master plan for education indicates very similar objectives. July 1991 saw the launching of the Master Plan for education. This plan opens with a quote from the 1984 White Paper indicating that the emphases and objectives of the country's policy makers and politicians are following the same direction.

After 1968, the government had to face a number of economic and social problems, the most pressing one being unemployment. The development strategy that the government wanted to implement is clearly laid out in the 1971-1975 four-year plan:

The most important resource of Mauritius is its manpower. A well-motivated labour force possessing the requisite mental and physical skills for a modern economy is the most valuable economic asset.

While the cultural background and progress of education in Mauritius has provided the basis for an intelligent and adaptable labour force, there is a need to create the skills required to meet the demand generated by prospective economic development. This would require a change in the quality and content of education from its present generally academic emphasis to more technical and vocational orientation at all levels. (1971-1975 National Plan: 68).

As early as 1971, three years after independence, mention is being made of technical and vocational education (TVE).

The educational policy formulated by the government in the 1971-1975 plan had the following objectives:

- (1) To provide free education for all children at primary level.
- (2) Opportunity for secondary and vocational training for at least 60 per cent of boys in the age group 15-19 by 1980.
- (3) A balanced curriculum that will include technical subjects and integrated science at all levels.
- (4) Technical and vocational orientation of education at secondary and post secondary levels.
- (5) Equality of educational opportunity for all according to their educational potential.

The very fact that education was to be made free at primary level but not compulsory implies that there could well be a section of the population who would not be attending schools. The plan grossly neglects Mauritian girls. Mention is made of opportunity for secondary and vocational training for at least 60 per cent of boys in the age group 15-19 by 1980 but nothing is mentioned for girls. In this respect the plan reminds us of the situation of the colonial period when girls were strongly

discriminated against and were deprived of education. The policy makers seem to imply that the inclusion of technical subjects and integrated science at all levels brings about a 'balanced curriculum'. In the years immediately after independence the curriculum was very much the same as the colonial curriculum. Attempts to bring about a new curriculum only started when the Mauritius Institute of Education (MIE) was established in 1973.

The Plan refers to technical and vocational education (TVE) but there is no indication as to why and how the country should have more of such education. During colonial rule, education was 'academic' in content and academic qualifications were a passport to the security of a job in the public sector. Within a few years after independence, the market for white-collar jobs was saturated. Many educated youths could not find a job. The unemployment problem prompted the government to find an outlet for school leavers by instituting technical and vocational education.

The government may have been prompted to promote technical and vocational education after the World Bank launched a 'new' educational policy with a strong vocational content (*World Bank, 1974*). A number of projects were financed by the World Bank, but by the end of the 1971-1975 plan, vocational education had not achieved the desired result, namely to reduce unemployment. Critics went as far as to say that vocational education did not even get off the ground, in spite of the government's effort.

Manpower needs were further emphasised in the 1975-1980 National Plan. In the foreword of the plan, the Prime Minister wrote:

"most of our unemployed are young, educated and adaptable. With little extra effort they can be trained fairly easily for skilled jobs in industry. A far greater emphasis will therefore be placed on technical education to enable the young to participate in industrial development fully equipped for the skilled jobs which will become available during this plan period." (1975-1980 National Plan: iv)

The aims of the 1975-1980 National Plan were:

- (1) To democratise the education system.
- (2) To spread out schools and colleges evenly over the country so as to balance the educational facilities between the urban and rural areas.
- (3) To diversify the curricula.
- (4) To make an integrated approach to the concept of education as a lifelong process for the development of a well-balanced personality.
- (5) To adjust the education system to meet the manpower requirements.

The 1975-1980 National Plan extended the objectives of the previous plan, but emphasised that educational change would be made to meet the socio-economic needs of the country.

During the early 1970s, a few years after independence, the country had to face a number of economic problems, some local and others as a result of international economic development. The worldwide recession began to take its toll on the small island. The Arab oil crisis had repercussions everywhere and Mauritius was not spared. Inflation was rampant and unemployment was soaring. Locally, severe cyclones damaged the sugar crop thus reducing output. Moreover, the price of sugar on the international market was declining. These factors hampered the attainment of the objectives laid out by government to promote overall development. Although 17 per cent of the annual budget went to the education sector, the government found it very hard to attain all its aims and 'equality of educational opportunity' seemed to be well out of reach.

Having realised the intensity of the problems, the government launched an interim plan in 1980. The latter, known as the 1980-1982 Development Plan, suggested a tightening the belt policy. There were to be cuts in public expenditure. The government was concerned with trying to avoid waste and increase efficiency by trying to make all development projects, including education, as 'cost-effective' as possible.

The educational objectives of the 1980-1982 plan were:

- (1) To improve the efficiency of the school system at all levels.**
- (2) To prepare for self-education.**
- (3) To produce various types and levels of skills required for the socio-economic and cultural development of the country.**
- (4) To improve the existing educational infrastructure and to ensure their more even distribution between rural and urban areas.**

The above plan was prepared at a time when the country was still trying to find a solution to the unemployment problem. Vocational education was, under such circumstances, heavily emphasised as a partial solution to the unemployment problem but nothing concrete was done for its provision. Two years passed by without the objectives of 1980-1982 plan being attained. The country then launched a new plan, the 1984-1986 Development Plan.

The 1984-1986 Development Plan laid out a new set of objectives:

- (1) To adapt the schools to the evolving socio-economic and cultural system of the country.**
- (2) To promote the extension of pre-primary schooling and to provide equal opportunities to all school going children.**
- (3) To explore all means for bringing the educational system into conformity with employment opportunities.**
- (4) To ensure quantitative and qualitative improvement at all levels and make the system more cost-effective.**

Once more there was a strong emphasis on the desire to bring schooling more in line with the world of work. The concept of 'equal opportunity' was largely theoretical. Also, there was great concern with trying to make the system 'cost-effective' a term that was repeatedly being used by planners and politicians.

The 1988-1990 National Plan was also very similar to the previous plans. Its aims were:

- (1) To bring education more in line with the development needs of the country.
- (2) To promote the development of science, technology and business studies and encourage research to respond to new demands of a modern economy.
- (3) To raise the standards of low-achieving schools and to make the education system fairer.
- (4) To mount staff development programmes at all levels to improve the quality of education.
- (5) To strengthen and stimulate the participation of the community in school life.
- (6) To increase cost-effectiveness by fully utilising all existing school facilities; and
- (7) To make the educational system more efficient.

The same educational objectives are more or less emphasised with minor additions or differences here and there.

The Master plan 1991

The *Master Plan 1991* has certainly not deviated from the emphasis placed on the link between education and the economy. Education in Mauritius is regarded as a wealth-generating activity. The Master Plan (1991: 29) states:

A major achievement of the system has been that it has provided the greater part of the manpower required for the first stage of Mauritian industrialisation.

The first stage of industrialisation was highly labour intensive. The schooling system could afford to eliminate a large section of the population at an early age and the labour-intensive industries were there to absorb them. Now that Mauritius embarks on its second phase of industrialisation, and faces a labour constraint, it seeks to adopt capital-intensive techniques of production. The achievement of the education system this time would perhaps be to equip some with the motivation, knowledge and intellectual skills required by the highest levels of the economy, others will be provided with the skills and attitudes required for manufacturing, and others still will be excluded as not possessing the potential needed for use in the economy.

Given the emerging tight labour situation in Mauritius, the country cannot afford to let its manpower go to waste. With the 'second phase of Mauritian industrialisation' in view, the Minister of Finance (1990) spoke of 'manpower training and the acquisition of modern high technology equipment' as the two sine qua non to steer Mauritius through this crucial phase of development.

The education system will be called increasingly to provide managers, the professionals and the technicians who will be required for the second phase of industrial development. (Master Plan, 1991: 18).

The central objectives of the plan for the year 2000 are summarised as follows in the 1991 Master Plan:

- (a) Every child should reach an agreed standard of basic education. This should include the acquisition of the skills of literacy and numeracy and the development of attitudes conducive to the healthy growth of Mauritian culture and society. The principal means of meeting this objective will be the introduction of a minimum of nine years of basic education for all.
- (b) The quality of education should be improved at all levels.
- (c) Differences in life chances resulting from inequalities in the educational system should be reduced by improving standards in low achieving schools.
- (d) The educational system should help in the continued economic and social development of the country.
- (e) The different abilities and aptitudes of those passing through the system should be developed to the fullest practicable extent.
- (f) The management and structure of education should promote the most effective use of resources in this sector.

Although the Master Plan 1991 has been widely supported in many ways, it has not escaped criticism. Any criticisms, however, are quickly played down when Mauritian politicians and policy makers demonstrate to the Mauritian population, the extent to which Mauritius is making a name for itself on the international scene. The media too has a contributory role to play. In the widely read Mauritian newspaper,

the *Week-End of 14th July 1991*, F. Mayor, Director-General of UNESCO said that Mauritius is the first African country to implement the principal recommendation 'education for all' of the Jomtien conference held at Jomtien in Thailand in March 1990. F. Mayor also claims that Mauritius is an example to be followed by other developing countries. Mauritian politicians capitalise on this since Mauritius 'being an example to be followed' gives a new significance to Mauritius and the local population takes pride in this. What is left unsaid however is that there is not much that can be followed since Mauritius has its own particularities and needs. Also, Mauritius does not in reality present anything new or a remedy to other countries' problems, let alone its own.

Education Commissions

From 1968 onwards, various commissions have been appointed to investigate into the education system and to examine the malaise prevailing within the system. The three best-known commissions, which have attempted to examine the ills of the system and which have come up with certain recommendations, are:

- (1) The Glover Commission on post-primary and secondary education: The road ahead, 1978 (referred to as *Glover Report 1978*).
- (2) The Richard Commission on primary and pre-primary education, 1979 (known as *Richard Report, 1979*).
- (3) The Glover Commission of enquiry on education, 1982-1983: We've all been children, 1983 (referred to as the *Glover Report, 1983*). These commissions often contribute towards the formulation of policy. They are autonomous bodies that offer an independent critical view on matters pertaining to education.

In a way, the Education Commissions replaced the Education Board, which was acting as an Advisory Board to the Ministry of Education (*Education Ordinance, 1957: 3*). They are known as commissions of enquiry, established by the Governor General on the advice of the Prime Minister.

The Glover Report 1978

This commission of enquiry was set up on 25th February, 1977 by the Governor General in order to:

- (1) Review the scope and functions of post primary and secondary sectors of education in the light of the decision of the government of Mauritius to provide free secondary and university education.
- (2) Assess the nature and implications of reforms already initiated.
- (3) Consider problems arising out of the changing needs of the country, bearing in mind the relationship of Mauritius with the international community.
- (4) Consider suggestions for further reforms; and
- (5) make recommendations, having regard to the social, cultural and economic circumstances of the country. (*Glover Report, 1978: 1*).

Another commission of enquiry on education was set up in 1982-1983 with the following terms of reference:

- (1) To review the system of education globally with the object of proposing a system that will give equal opportunity to everybody at all levels.
- (2) To review the functions and scope of education with the object of bringing it closer to the community it is meant to serve, and in particular to the world of work.
- (3) To review the aims and objectives of the school curriculum to make it more responsive to the social, economic, cultural and linguistic needs and aspirations of the country as well as those of the individual, and in particular to make it play a more active role in building up the Mauritian nation.
- (4) To review the structure and scope of the different institutions and bodies engaged in education and to make for better coordination and a more rational use of resources. (*Glover Report, 1983: 82-83*).

These different commissions have identified various problems. Attention has been drawn to the problems of overcrowded schools, differing teacher pupil ratio in the different schools, disparities that exist between rural and urban schools, lack of

equipment in certain schools, inadequate buildings, poorly qualified teachers in certain cases, the irrelevancy of the curriculum and the language problem and private tuition. These are just some of the problems and this list is by no means exhaustive. Some of the facts and problems highlighted by the various commissions indicate the inequalities and inefficiencies of the system.

A major suggestion of the commissions that has actually been implemented is the creation of the Private Secondary Schools Authority (PSSA). The latter was created in 1978 to look after the running of the private secondary schools. After these commissions, whose recommendations were not fully implemented, came the *White Paper (1984)* and the *Ramdoyal Report (1990)*.

The White Paper (1984) and the Ramdoyal Report (1990)

The White Paper on education that was issued in June 1984 lays out the government's educational policy over the next few years. The White Paper states that:

- (1) The educational system must be child-centred.
- (2) It must be fair.
- (3) It must be relevant.
- (4) It must be cost effective.

The White Paper sets out these four requirements but does not define any of the important terms such as 'fair' and 'relevant'.

The section entitled 'A programme of action' in the White Paper maps out a number of measures in order to make the system more efficient. The White

Paper also shows its concern about the great number of CPE failures and it states that 'it is proposed to improve literacy and numeracy through the reform of the primary school curriculum'. The White Paper goes on to say that the 'government is exploring the possibility of introducing a simple test in literacy and numeracy and self-expression for all children leaving primary schools'. A number of years have already elapsed and government is still grappling with the possibility of implementing this test. The system is continuously producing its failures, a good number of whom

are totally illiterate. The latter are youngsters who will not be admitted to secondary schooling and who are doomed to remain at the bottom layer of society. Other areas that the White Paper also deals with are the language problem and private tuition in the primary schools.

The Ramdoyal Report follows the White Paper. The *Ramdoyal Report (1990)* mentions and discusses the issues and themes that have been evoked before in the various other commissions. Unlike the *Master Plan (1991)*, it devotes large sections of its investigation to the problems of private tuition, language and the pre-primary sector. As shown above progress in education at the secondary level was relatively slow. With Independence in 1968, the Government embarked on an ambitious programme for the expansion of education facilities. Steps were taken to set up new facilities and to improve the quality of education in the existing schools. Secondary education was fee paying until 1976 when the Government decided to make it free. Despite the call, by the IMF and the World Bank in 1982 when the country was facing serious economic problems, to review the policy of free education, the Government maintained free education and even extended it to the Tertiary Sector.

The Ministry of Education takes a very large share of the total Government annual budget. It was until recently the largest spending Ministry in the country (about 13-14% of total recurrent budget of the Government is for the Ministry of Education). The Secondary School Education Sector consumes about 40% of the total budget of the Ministry of Education. However, only about 52% of the secondary school population age group is enrolled in the different secondary schools in Mauritius. Government funds available for public expenditure are limited. It is therefore of vital importance to look into how available funds are managed and also into ways and means of improving cost effectiveness and efficiency in the system.

The comparative study of unit cost of education is important because it would reveal the level of productivity and efficiency of institutions of secondary education. Unit cost analysis can be used to evaluate the options for allocating and mobilising resources to the schools.

The structure of the education system in Mauritius

The education system in Mauritius is very similar in formal terms to the British system, with six years in primary school, followed by five years in secondary school if students leave school after completing 'O' level or seven years in secondary schools if students go on to HSC or the London GCE 'A' level. Although this system has been criticised by a Unesco study in 1974, there has been no change. The Unesco study suggested the adoption of a 9-3-2 system, with nine years of comprehensive education (*Chinapah, 1983: 27*). The Ramdoyal commission has looked into the implications of such a structural reform and more recently the *Master Plan (1991)* proposed the introduction of the nine-year schooling system in the country. According to the *Nine Year Schooling Report (Ministry of Education and Science, 1992)*, the education structure of the country would change. Primary education will still be of 6 years duration. Primary school leavers will be channelled into two streams, the normal stream and the pre-vocational stream according to their academic orientation, aptitude and learning preference. The focus of the time of the nine-year schooling system is to improve quality of education and to achieve more equity in the system.

The pre-primary sector.

This sector attracted a lot of attention in the *Glover Report (1983)* that highlighted the problems and inefficiencies of the sector. Pre-primary education is provided by about 1100 privately owned '*petites écoles*' which prepare children for entrance to primary schools. In 1996 the Government has started providing some assistance to this sector and decided that primary schools should start having pre-primary classes also. About 85% of the children aged 3-5 years (about 33000) attended pre-primary schools.

Primary education

There are at present 270 primary schools enrolling some 120,000 pupils. In fact, there is universal provision of primary education for six years (standard I-VI). Enrolment ratios are nearly 100% in lower standard, falling to about 97% by standard VI. The standard VI examination (Certificate of Primary Education - CPE)

selects those students who will proceed to secondary school, and among these, the students who will be admitted to schools for which there is greatest demand. About 60% of the students pass the CPE exams and may proceed to Secondary Schools. Those who fail turn to Technical and Vocational Education.

The Master Plan (1991) states that the objectives of the primary education sector should be:

- (a) To provide a grounding in basic skills such as reading, writing and numeration and help to produce the linguistic capacity needed in a multi-lingual society.
- (b) To encourage the child to observe, to think and to develop a growing sense of autonomy.
- (c) To enable the child to develop values and attitudes relevant to the society in which he is growing up.
- (d) To make him aware of his cultural roots, and give him some appreciation of cultures other than his own.
- (e) To help the child to develop his potential to the full.
- (f) To develop an appreciation of the natural environment.

Secondary education

There are at present (1996) 136 secondary schools (29 state and 107 private) in Mauritius enrolling 90000 students. Secondary education expanded rapidly in the 1970s. The notion of private schools in Mauritius has a different meaning from that in Australia or the U.K. In the latter countries, private schools are often characterised as elitist, expensive and conservative. In Mauritius, there are only two private schools of this type. They are Lycée Labourdonnais and Le Bocage. The other private schools in Mauritius are funded by the government and they are non-fee paying. Amongst these private schools, there is a handful that is run by religious organisations and together with the state schools are often referred to as the 'star' schools. 'Star' schools are the most sought after. The Private Secondary Schools Authority (PSSA) is a para-statal organisation created in 1977 to exercise some control over all private non-fee paying

secondary schools. It also allocates government funds to the private non-fee paying secondary schools according to an agreed formula. Disparities exist between schools in terms of the teaching force, infrastructural facilities and in the quality of entrants.

After independence in 1968, private secondary schools mushroomed up in every corner of the island because of the increased demand for education. There was no minimum entry requirement for the private schools. Standards in private schools dropped. Schooling became more of a profit making business. In 1978, an entry requirement was set up - only those who had passed the Primary School Leaving Certificate (PSLC) were allowed admission to private secondary schools. The setting up of an entry requirement brought the inefficiencies and weaknesses of the system out into the open. A large number of failures from primary schools could not get access into secondary schools. It became necessary for the government to provide some form of schooling for the dropouts who were too young to join the labour-force, since the official minimum working age was 15 (*Kistoe-West, 1983: 52*). 'Community schools' were set up

for those who failed the last year of primary school. Jagatsingh (1979: 11) writes:

'The aim of the community schools is to recycle the drop-outs by providing them with a three year additional education'

Community schools were criticised right from the start. The World Bank, which was one of the most active agencies in promoting education reforms in the country was in favour of replacing them with technical schools. When the World Bank launched its new development strategy in 1974, vocational and technical education was a key element. A few technical schools were set up in the country and were called Junior State Secondary Schools (JSS). However, these Junior State Secondary Schools oriented themselves towards the traditional academic mode and technical and vocational education was quickly ignored. Technical and vocational education has resurfaced in the *Master Plan – 1991*, which also identified the weaknesses of the secondary school sector as follows:

(a) *It is not cost effective. Rates of repetition as well as drop out rates are high. According to recent trends, out of every 100 students entering secondary schools, 64 will reach Form Three, 44 will reach Form Five, 28 will pass S.C., 13 will stay*

up to Form Six and 8 will pass the HSC. In 1990, 16 per cent of students in Form Four and 27 per cent in Form Five were repeaters.

- (b) There are many disparities. The non-governmental schools (excluding schools such as Le Bocage and Lycée Labourdonnais) in general have fewer academically qualified teachers than the state schools, they have a higher pupil/teacher ratio; many of them are poorly equipped and housed. Since certain state and confessional schools have a high reputation, they attract the best candidates and hence obtain the best results. At the other extreme, there are 'a small number of institutions which are a real disgrace to the system.' (Management Audit Bureau, Report on the Private Secondary Education Sector, November 1989). There are also regional inequalities, the best schools are located in Port Louis and Plaines Wilhems, while certain areas - especially in the South are poorly provided with secondary schools.*
- (c) If Mauritius is to move successfully to the next stage of industrialisation, it will require more young people with a grounding in scientific and technical subjects. But the number of students opting for these subjects is falling. In most schools there is insufficient emphasis on practical work.*
- (d) Many students are inadequately informed on either the study choices open to them or on career possibilities. The weaknesses of the system, especially the disparities between state and private schools, the high failure and repetition rates reinforce the idea that democratisation is still a long way off in Mauritius.*

Technical and vocational and polytechnic education

Technical and vocational education has repeatedly appeared on the Mauritius National Development Plans but it had never really taken off. In 1991, as the country prepares to move towards its second phase of industrialisation, technical and vocational education is again being considered. At present those who fail the Certificate of Primary Education, can attend course in the Basic Secondary Schools which offer three-year courses, including both basic education in literacy and numeracy and some technical training, leading to a Certificate of Proficiency. Such students may also attend courses at the different training centres of the Industrial and Vocational Training Board.

There are also two polytechnics in Mauritius. These polytechnics are run by the Technical Schools Management Trust which also run the Basic Secondary Schools mentioned above.

Higher education

Tertiary Education is provided in Mauritius by four Government Institutions:

- The University of Mauritius, which offers undergraduate and graduate courses as well as a variety of sub-degree courses;
 - The Mauritius Institute of Education is principally concerned with teacher training, educational studies and curriculum development;
 - The Mahatma Gandhi Institute lays emphasis mainly on Asian culture, Mauritian studies and Humanities;
 - The Mauritius College of the Air provides educational services, including the use of the media, and also has the responsibility for adult and continuing education.
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APPENDIX II: QUESTIONNAIRE

*Praveen Mohadeb
25, pave D'Amour
Coromandel
Tel. 2334613*

Dear Colleague,

As part of my research work towards a PhD in “The Financial Sustainability of Higher Education in Mauritius” I will highly appreciate if you could please respond to the following questionnaire which is being administered to examine the attitude of stakeholders on the issue of payment of tuition fees either partly fully. You may wish to consult your parents in answering some of the questions. Your opinion will constitute a major plank in my research exercise. Thank you for taking the time to answer the following questions. All responses will be kept strictly confidential and anonymous.

Mr. P. Mohadeb

A. STUDENT PROFILE

1. How old are you?.....(Years).

2. Gender: Male Female

3. Town or village of residence

4. If you are married, state number of children.....

5. If you are single, state number of brothers.....and sisters.....

6. Father’s occupation.....

- Mother’s occupation.....

7. Level up to which your parents have studied

	Father	Mother
None	<input type="checkbox"/>	<input type="checkbox"/>
Primary	<input type="checkbox"/>	<input type="checkbox"/>
Secondary	<input type="checkbox"/>	<input type="checkbox"/>
Post secondary	<input type="checkbox"/>	<input type="checkbox"/>

8. Number of income earners in your household.....

9. Average monthly income (*in rupees*) of your household

Less than 5000	<input type="checkbox"/>	5001—10000	<input type="checkbox"/>	10001—15000	<input type="checkbox"/>
15001—20000	<input type="checkbox"/>	20001—25000	<input type="checkbox"/>	25001—30000	<input type="checkbox"/>
30001 -35000	<input type="checkbox"/>	35001—40000	<input type="checkbox"/>	40001 and above	<input type="checkbox"/>

B. COURSE INFORMATION

10. Course enrolled for

.....

11. State whether Part time or Full time

12. Up to what level do you plan to study after completion of your present course?

Diploma	<input type="checkbox"/>
Bachelor	<input type="checkbox"/>
Masters	<input type="checkbox"/>
M.Phil	<input type="checkbox"/>
PhD	<input type="checkbox"/>

13. What are the potential constraints you envisaged in participating in tertiary education? *Please rank in order of importance with 1 as the most important and 5 as the least.*

- Financial
- Family
- Transport
- Books and equipment
- Others.....

14. What is the level of income (*in rupees per month*) you expect to earn after having completed your course

- (i) Certificate: Rs.....
- (ii) Diploma: Rs
- (iii) Bachelor: Rs
- (iv) Master: Rs
- (v) M. Phil: Rs
- (v) PhD: Rs

Note: wherever applicable.

15. What is the total expenditure* (*in rupees*) incurred by **YOU** in relation to your course.

- (i) Tuition fees: Rs.....
- (ii) Examination fees: Rs.....
- (iii) Library fees: Rs
- (iv) Application fees: Rs.....
- (v) Transport: Rs
- (vi) Textbooks: Rs.....
- (vii) Stationeries: Rs
- (viii) Others: Rs.....

*Note: * Average yearly basis*

16. What is the TOTAL cost of the course which you are presently following?

Rs

17. With increasing demand, Government may very soon find that it would be impossible to sustain free higher education in Mauritius and may have to look for alternative sources of funding. Students may be required to contribute towards the cost of their higher studies. In such a situation, what percentage of the cost would you be willing to pay, (assuming a cost of Rs 60,000 per annum)?

- 25%
- 50%
- 75%
- 100%

18. Which mode of payment would you prefer?

- (a) As a fee during the enrolment period
- (b) By taking a loan and repay after graduation
- (c) As a tax on your taxable income after graduation

19. Would contributing to your higher education reduce your desire to pursue further studies? Yes No

20. In the event that tuition fees are introduced in Mauritius, would you prefer to study locally or overseas?

- Locally Overseas

21. Do you think that if the cost of higher education is shared between the State and the students, there will be improvement in:

(a) Access?

(b) Quality?

(c) Accountability?

APPENDIX III: QUESTIONNAIRE FOR INTERVIEWS WITH SENIOR OFFICIALS IN THE HIGHER EDUCATION SECTOR

1. Do you think that free higher education is a barrier to access to higher education in Mauritius?
2. Do you think that higher education should continue to be free and funded by the government in Mauritius?
3. Do you think that the government can continue to financially sustain free higher education in Mauritius given that there is need to substantially increase the enrolment rate in this sector?
4. What are your views on cost sharing in higher education especially cost sharing with students?
5. What in your opinion could be the implications of charging fees in higher education in Mauritius?
6. If cost sharing is introduced in higher education in Mauritius, what share or amount you think students could be asked to contribute to their higher education assuming a unit cost of Rs 60,000 per annum?
7. Do you think that the charging of fees in higher education will reduce the number of students wishing to pursue higher studies?
8. What according to you are the different methods through which students could be asked to contribute to their higher studies?
9. Do you think that management initiatives are restricted because of free government funding of higher education?

10. Do you think that the charging of fees in higher education will improve quality in the sector?
 11. Do you think that the charging of fees in higher education will improve accountability?
 12. What do you think of the allocation of government grant to higher education institutions in Mauritius through a grant formula?
 13. What in your opinion are the major challenges of higher education in Mauritius?
 14. What suggestions you would make to improve funding and financial management in higher education in Mauritius?
-