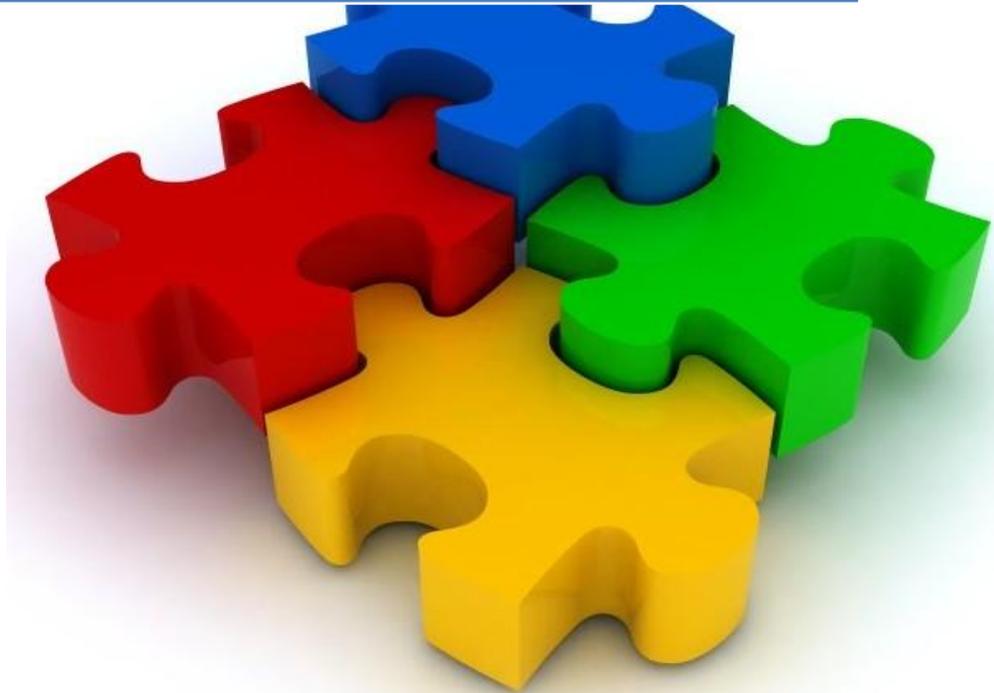




HRDC
Human Resource Development Council

Under the aegis of the Ministry of Education & Human Resources

TRANSFORMING MAURITIUS INTO A KNOWLEDGE HUB



**Sectoral Committee
Report**

November 2006

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TRANSFORMING MAURITIUS INTO A KNOWLEDGE HUB

A SWOT ANALYSIS AND THE WAY FORWARD

1.0 Introduction

The future economic prospects of Mauritius depend increasingly on the country's capacity to shift from traditional and declining sectors and to fully integrate the new international economic order. This requires a strategy that will provide Mauritius with the necessary skills and a knowledge-intensive base to overcome the major constraints which are affecting the economy. Such a strategy implies considerable investment in education and training as well as in economic infrastructure.

2.0 Knowledge Industry and Knowledge Hub

The concept of a knowledge economy is one in which all sectors are knowledge intensive, are responsive to new ideas and technological change, and are innovative and employ highly skilled personnel, engaged in lifelong continuous learning. A feature of globally competitive knowledge economies is that governments, institutions of higher learning and industries work together to create knowledge hubs. A knowledge hub is concerned with building a country's capacity to better integrate itself into the global economy, through the generation, acquisition and transmission of knowledge to support of various economic sectors, in view of fostering social and economic development.

3.0 Centres of Excellence

Another fundamental driver for setting up a knowledge hub is Centres of Excellence (CoE). CoE's represent a means of high-level research, with the ability to generate knowledge to be economically or industrially utilized for accelerating the innovation process and technology transfer and help improve competitiveness in important areas.

4.0 The Context

The future of Mauritius will be inextricably linked to its capacity to acquire knowledge and apply new knowledge through a highly-trained and specialized workforce, equipped with a range of educational qualifications, experience and commitment. The creation of a knowledge hub will be instrumental in supporting the development of a new economic model for the country. This new economic trajectory rests on making Mauritius a platform for services through the consolidation of Financial Services and Tourism sectors as well as the development of new growth poles such as Seafood Hub, Land Based Oceanic Industry and ICT services and knowledge industry.

4.1 Quality and Recognition: Countries providing and receiving cross-border higher education have a common interest in strengthening quality provision (either to protect their learners or to maintain the reputation and attractiveness of their higher education system abroad). In December 2005, OECD has approved the guidelines for quality provision in cross-border higher education. The guidelines aim to support and encourage international cooperation and enhance the understanding of the essence of quality provision in cross-border higher education. The purposes of the guidelines are to protect students and other stakeholders from low-quality provision and disreputable providers as well as to encourage the development of quality cross-border higher education that meets human, social, economic and cultural needs.

4.2 Access and Equity: Cross-border higher education certainly represents one way of increasing access to higher education. Countries facing a problem of unmet demand for tertiary education on a large scale should thus consider as one solution, the facilitation of access for their citizens to the different forms of cross-border educational provision (student mobility, programme mobility, institution mobility). However, student mobility and foreign education can involve equity issues. The growth of cross-border education could lead to the displacement of domestic students by international students, if it is not carefully monitored by governments and educational institutions. Moreover, student mobility remains primarily self-financed by students and their families; students generally self-finance their participation in cross-border educational

programmes. Students from lower economic and educational backgrounds participate less in cross-border student mobility.

4.3 Tertiary Enrolment: Access to tertiary education in Mauritius has been broadening over the years with a Gross Tertiary Enrolment Rate (GTER) of 28.4 percent in 2005. There is need to increase this enrolment rate and it is projected to have a Gross Tertiary Education Rate of 45% in 2015. The enrolment rates in some other countries are: Finland – 86%, USA – 81%, Sweden – 76%, New Zealand – 74%, Korea – 65%, UK – 64%, Japan – 49%, Singapore – 47%, Malaysia – 29%, South Africa – 15% (2003/04).

4.4 Policy Coherence: Because cross-border educational activities bring into picture many actors and policies in a country, an effective policy strategy regarding cross-border higher education must take into account this diversity and ensure the highest co-ordination, or compatibility, between several policy agendas such as: quality assurance and recognition policy; development assistance in education; other domestic educational policies; cultural policy; migration and visa policy; trade policy and economic policy.

4.5 Employment in Education Sector: Transforming Mauritius into a knowledge based island would require the contribution of highly productive, skilled and qualified workforce so as to attract new generation of investment and to maintain the country's competitiveness. Thus, adopting the right policies in education and training is critical.

A world class educational standard has to be implemented. There is also the need to develop appropriate career development for personnel in the sector. Knowledge should not only be looked at only in academic terms because knowledge creation include non-academic fields There seem to be a lack of teamwork in academic fields and knowledge need to be multi-disciplinary rather than uni-disciplinary. There is also an urgent need to address life-long learning. In this sector, there exists a high professional obsolescence rate thus pooling together of resources is important. Most important of all, there is a need to review the education system especially the primary and secondary education to build a strong based for the Knowledge Hub.

The number of employees in the sector has been increasing every year. In the year 2005, an estimated number of more than 14 thousand people were employed in this sector and it is expected to reach an estimated number of approximately 16 thousand people by the year 2009 -2010. Moreover, it has been found that the highest proportion of people employed in this sector falls under the Professional category.

According to the Human Resource Development Council (HRDC) manpower survey, the number of people employed in the Education Sector/Knowledge Hub sector is expected to increase by the year 2010 in mostly every occupational group which is represented in Table (a).

Table (a) Number of people employed in the Education Sector/Knowledge Hub

| | 05-06 | 06-07 | 07-08 | 08-09 | 09-10 |
|--|--------------|--------------|--------------|--------------|--------------|
| Senior Officials and Managers | 1010 | 1078 | 1098 | 1133 | 1195 |
| Professionals | 5820 | 5685 | 5551 | 5860 | 6149 |
| Technicians and Associate Professionals | 3297 | 3358 | 3251 | 3494 | 3323 |
| Clerks | 1789 | 1948 | 2001 | 2105 | 2184 |
| Service Workers and Sales Workers | 439 | 507 | 533 | 583 | 598 |
| Skilled Agricultural and Fisheries Workers | 30 | 32 | 33 | 33 | 34 |
| Craft and Related Trade Workers | 690 | 758 | 799 | 844 | 871 |
| Plant and Machine Operators & Assemblers | 128 | 133 | 120 | 128 | 128 |
| Elementary Occupations | 1385 | 1431 | 1887 | 1433 | 1474 |
| Total | 14588 | 14930 | 15273 | 15613 | 15956 |

According to the 2000 census, about 9 percent of employees have studied from standard 1-6 but not passed the Certificate of Primary Education (CPE), 30 percent have studied up to SC and 24 percent hold a Higher School Certificate (HSC). It is worth noting that only 18 percent are University graduates as shown in Table (b)

Table (b) Educational Attainment in the Knowledge Hub Sector

| | Industry | Education | % |
|------------------|---------------------------------|------------------|----------|
| Primary | Pre-Primary | 140 | 1 |
| | Standard 1-6 but not pass CPE | 2147 | 9 |
| | Passed CPE | 609 | 3 |
| Secondary | Forms 1-3 | 873 | 4 |
| | Forms 4-5 but not passed SC | 2790 | 12 |
| | Passed SC or Equivalent | 7110 | 30 |
| | Passed HSC or Equivalent | 5767 | 24 |
| Tertiary | University degree or equivalent | 4324 | 18 |
| | Others | 41 | 0 |

The Manpower Planning Survey 2006-2010 estimates the number of expatriates who would be employed in this sector in accordance to their qualifications as presented in Table (c).

Table (c) Estimated number of expatriates

| Highest educational level | Number of expatriates | Estimated number of expatriates | |
|--------------------------------------|------------------------------|--|--------------|
| | 04-05 | 05-06 | 06-07 |
| Degree in related field | 85 | 367 | 362 |
| Postgraduate degree in related field | 26 | 237 | 135 |

5.0 A SWOT Analysis for the Knowledge Hub

Although small in size, with a land area of 2040 km² and a population of 1.2 million inhabitants, Mauritius has the potential to become a knowledge hub and a Centre of Higher Learning in the Region.

The following is an attempt to assess the prospects for transforming Mauritius into a knowledge hub through an analysis of its strengths, weaknesses, opportunities and threats:

6.0 Strengths

- i. Mauritius has a stable political system and an attractive environment.
- ii. Mauritius has a unique multi-cultural population, comprising a mix of African, Asian and Western civilizations, and an open set-up.
- iii. The use of English, French and Asian languages as medium of communication offers the country an addressable market. Mauritius is possibly the only country which can provide a combination of English/French/Hindi and Chinese languages.
- iv. A diversified postsecondary education system exists, comprising public, private, overseas and regional institutions and providing a multiplicity of programmes, including high demand ones such as Engineering, IT, Science, Business Studies, Management, as well as Medicine and Dentistry.
- v. Constituent institutions of the Sector have collaborative arrangements with recognised institutions worldwide.
- vi. Constituent institutions of the Sector deliver programmes jointly with renowned international institutions.
- vii. The cost of postsecondary education is competitive and compares favourably with other countries worldwide.
- viii. The Postsecondary Education Sector already attracts some students from overseas.

- ix. Academic staffs in the Sector have a diverse educational background obtained from different universities worldwide.
- x. Necessary legislation is in place for establishment of private universities and of overseas institutions.
- xi. An overarching regulatory framework exists for postsecondary education to assure quality among providers of postsecondary education.
- xii. Some incentives already exist to attract private and overseas promoters to invest in postsecondary education.
- xiii. Internet connectivity for Mauritius is high for the region/African continent
- xiv. High literacy and also high IT literacy

7.0 Weaknesses

- i. Lack of infrastructure for the establishment of private and of overseas institutions.
- ii. More incentives required to attract Foreign Direct Investment (FDI) in postsecondary education.
- iii. There is not enough capacity in the Sector to meet local demand for postsecondary in full.
- iv. Inadequate research is carried out in the Sector owing to a lack of funds and research infrastructure.
- v. There is a shortage of expertise to cater for emerging and new thrust areas.
- vi. There is no student accommodation on campus.
- vii. Links with the economy are not fully exploited.
- viii. There is insufficient continuing and life-long education as well as continuing professional development programmes.
- ix. Over-reliance on state funding constitutes in the Tertiary Education Institutions (TEIs) a stumbling block to institutional progress in the public sector.

- x. Difficulty in recruiting and retaining academic staff in the TEIs owing to unattractive salaries and conditions of service.
- xi. Need for a fast track regulatory framework to process application within acceptable time frame

8.0 Opportunities

- i. Knowledge, in particular postsecondary education, is emerging worldwide as a major driver of economic development worldwide.
- ii. Postsecondary education offers major potential for generating income and contributing to the economy.
- iii. Mauritius is strategically and geographically well placed to act as a knowledge hub for postsecondary education in the Region, providing the highest quality of postsecondary education and training at competitive study costs in a highly attractive environment.
- iv. Mauritius has an Exclusive Economic Zone which spans over some 2 million km² of ocean which is yet to be exploited.
- v. The reputation of Mauritius as a world-class tourist resort can be used as a catalyst for students and experienced academics and researchers from overseas to opt for Mauritius as a destination for higher studies or pursuing a career in higher education.
- vi. Mauritius has earned an international reputation in the Tourism, Textile and Sugarcane sectors, which can be profitably linked to postsecondary education through the creation of Centres of Excellence.
- vii. Necessary environment exists for attracting reputable overseas institutions to set up offshore campuses in Mauritius.
- viii. Research and consultancy can become a major activity and income supplement for institutions.
- ix. Rising demand exists for postsecondary education locally and in the region.

- x. Unmet demand, in the form of courses not available locally, constitutes an important drain on foreign exchange reserve of the country estimated at over a billion rupees annually, upon which providers can tap.
- xi. Greater use of technologies can be made to support teaching and learning and for increasing access.
- xii. Mauritius forms part of various regional blocks, e.g. Southern African Development Community (SADC) which can allow free flow of students.

9.0 Threats

- i. Competitors from the region and beyond are well established.
- ii. Emergence of other knowledge and education hubs in the region.
- iii. Brain drain of high-level human resources.
- iv. Salaries of similar professionals outside the Sector are much more attractive.

10.0 An Enabling Environment

If Mauritius wants to position itself as a knowledge hub and as a key player in the Region, considerable emphasis should be laid on the postsecondary education sector, making it of a world class status, in order to attract international students, reputable institutions of higher learning and highly-qualified academics and researchers worldwide. But with a population of 1.2 million, there is no critical mass critical mass for research in the country.

A paradigm shift towards quality is already taking place in the postsecondary education sector, with the implementation of an overarching regulatory framework for postsecondary education, in 2005, which will prepare the foundation for the emergence of Mauritius as a quality destination for higher education and a knowledge hub in the Region. Appropriate mechanisms have been put in place for ensuring the development of postsecondary education complying with international norms and standards.

The new regulatory framework provides for the establishment of private postsecondary institutions as well as their monitoring on a continuous basis

through registration, accreditation and quality assurance mechanisms. It is expected to give greater credibility to postsecondary education and training being provided locally, by ensuring that recognised institutions are allowed to operate and that programmes offered are meeting international standards, with the potential of attracting students from within and outside the region. Besides assuring quality in the postsecondary education sector, the new regulatory framework makes provision for the setting up of private universities, branches/centres/campuses of overseas institutions.

In addition, in the local context, many measures could be adopted to promote knowledge. Long school holidays lead to facilities lying idle especially in the period of November and December. These infrastructures could be use for promoting knowledge. Other possible ways in which knowledge could be promoted locally are as follows:

- Easy access to learning facilities e.g. library, computer lab
- Need to develop language, communication and practical skills are important
- Encourage self-learning (learn by themselves)
- Beside post secondary institutions, foreign secondary boarding school should also be encouraged to set up in Mauritius

11.0 International Experiences

Singapore has made significant inroads in the Lucrative and Strategic Education Sector which amounts to 2.2% of its Gross Development Product (GDP); employing 5,000 people and with a market worth of S\$ 3.77 billion. It has invested massively in the infrastructure and made alliances with various world renowned universities and postsecondary institutions (e.g. MIT, University of Chicago Graduate Business School, University of California and University of New South Wales). It has more than 50,000 foreign students and this is expected to double by 2010.

Hong Kong is also developing its knowledge industry along the same lines. The Asian Development Bank (ADB) had identified knowledge as the most important resource in maintaining the region's competitiveness given the rapid change

created by globalization and technological innovation. The project will be funded by an ADB technical assistance grant of US\$ 990,000 with 4-6 knowledge hubs set up over a 2-year period. China, India and Thailand have already expressed interest to host such knowledge hubs. Other countries that are developing knowledge hubs include Australia, New Zealand, Malaysia and United Arab Emirates.

12.0 Fields of Study

The following fields of study might be of importance to Mauritius and the Region:

1. Information and Communication Technology (ICT);
2. Tourism and Hospitality;
3. Sugar;
4. Ocean Industry;
5. Fashion and Design in Textile Industry;
6. Medicine and Allied Health Sciences;
7. Culture and Languages; and
8. Financial Services

Additional remarks:

- Include new subjects like Entrepreneurial Development in the fields of studies. There is a need to encourage people to be entrepreneur and self-employed.
- Knowledge/learning should not only be reserved for highly skilled/professionals/management jobs, learning new skills also important for middle level, skilled and semi-skilled workers e.g. mechanics, employees in the seafood, logistics. This will be more important with the development of the Seafood Hub and ICT

Tuitions fees should be charged for UOM and other similar institutions at competitive rate.

13.0 Costing

On the basis of a previous costing made for a campus for the University of Technology, Mauritius, the cost of providing infrastructural facilities for around 30,000 students with Knowledge Hub facility would amount to around Rs 8.5 billion (preliminary rough estimates). This excludes cost of land but includes buildings (Rs 7.0 billion on the basis of Rs 15,000 per sq mt) and cost of landscaping, infrastructure and other open facilities (Rs 1.5 billion).

In the past, Mauritius did not depend on foreign investment for the development of sugar and tourism sectors as the major investment came from locals. With a proper planning/strategy, the same approach could be adapted for the Knowledge Hub. But in Mauritius, the private sector is very risk-averse.

14.0 Conclusion and the Way Forward

Mauritius possesses several strengths which need to be intelligently exploited, to build itself a comparative advantage in the provision of postsecondary education in the Region. An enabling and conducive environment already exists for investment in postsecondary education. The growing interest expressed by the private sector as well as overseas universities in the Sector bears significant evidence to this. However, to develop into a knowledge hub and a Centre for Postsecondary Education and Training of repute, Mauritius will have to invest massively in the provision of infrastructure (including buildings), provide incentives to attract providers of postsecondary education in the country and market itself as a knowledge hub. It will have to develop a cutting edge over its competitors in terms of capacity and capability, quality of postsecondary education, cost and relevance, use of latest technology and employability of graduates.

In addition to capitalizing on the strengths and opportunities, overcoming the weaknesses and hedging against the threats, the way forward should include the following:

14.1 Regulatory Framework: The development of a Knowledge Hub hinges crucially on a flexible facilitating framework, which fosters innovation, the fluid sharing of knowledge and the creation of linkages among institutions and enterprises. It should first of all be built on areas where existing institutions have acquired a degree of expertise and experience over the years and that have the capability of developing specialized centres of learning either on their own or in collaboration with international institutions of repute.

14.2 Recognition and Accreditation: For this to happen, institutions should be identified, recognised, accredited and their programmes supported. The involvement of the private sector in tertiary education will reduce the pressure on government finances on education and attract foreign students to study in Mauritius thereby earning foreign exchange for the country.

14.3 Quality of Education: Tertiary education and training in Mauritius is fast evolving in line with the global trends. The number of providers of education and training at the tertiary level has increased over the last few years to reach about 50 (Public and Private). If Mauritius wants to succeed in its vision of evolving into a regional hub for high quality education and training it is imperative for it to demonstrate that its education and training system are of enviable quality. There is a need for assuring high quality and standard of services provided by various institutions.

14.4 Infrastructure and Incentives: It is well known that our main pillars have developed thanks to a targeted package of incentives whether it is Agriculture, Economic Processing Zone (EPZ) and Tourism. It is high time to have a targeted package for the Knowledge Hub to create an enabling environment. These may include:

1. Provision of land at concessional rates.
2. Accommodation facilities for foreign students.
3. Incentives for Marketing.
4. Use of grants to support the process e.g. educational grants, IT grants, etc. to providers.
5. Special schemes for promoting Research and Development, both at institution and enterprise levels.

6. Charging of fees in public TEIs and introduction of Scholarship Support Schemes
7. Incentives for linkages.
8. Permits/ visas.
9. The private sector institutions should be provided with loans at special rate of interest.
10. Double taxation relief.

14.5 Feeder System: At present there is about 35% wastage in the transition between primary to secondary levels. This together with wastage at the level of SC and HSC, results in a very low Gross Tertiary Education Rate. It is therefore essential that the feeder system for tertiary education be reviewed.

14.6 Intellectual Property Rights (IPR): It is essential that there is a proper legal framework to protect IPR – to protect the rights of authors, inventors and other intellectual property holders.

14.7 Continuing Performance Development: There is also need for developing a culture for lifelong learning and Continuous Professional Development (CPD) so that the labour market is continuously supplied with up-to-date skills and knowledge.

14.8 Language Improvement: Although it is assumed that Mauritius is multi-lingual, it is important for the development of a Knowledge Hub that appropriate facilities and infrastructure be made available to improve communication skills in different languages spoken in the country.

With the above in place, Mauritius is bound to succeed as a Knowledge Hub.

List of institutions represented at the workshops

Culture and Languages

Ministry of Education & Human Resources
Ministry of Arts and Culture
Mahatma Gandhi Institute
Mauritius Qualification Authority
University of Mauritius
Tertiary Education Commission
English Speaking Union
British Council
Mauritius Council of Social Services
Urdu Speaking Union

Medical Sector

Ministry of Education & Human Resources
Ministry of Health and Quality of Life
Mauritius Institute of Health
Mauritius Dental Association
Cardiac Centre
School of Nursing
University of Mauritius
Clinique de Lorette
Clinique Med-Point
La Clinique Mauricienne
City Clinic