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Second Gamani Corea Memorial Lecture

Delivered on 7th January, 2016

at the

Bandaranaike Memorial International Conference Hall

Colombo, Sri Lanka

ENRICHING AND ACCELERATING HIGHER EDUCATION DEVELOPMENT IN SRI LANKA

1. Introduction

I would like to express my gratitude to the various institutions and individuals who have contributed to this lecture. First, I am grateful to the Chairman and Board Members of the Gamani Corea Foundation, Dr. Godfrey Gunatilleke, Dr. Nimal Sanderatne, Dr. Lloyd Fernando, Dr. Indrajit Coomaraswamy, Dr. Saman Kelegama and Ms. Priyanthi Fernando, for inviting me to deliver this lecture. Second, to my colleagues from the World Bank, Ms. Yoko Nagashima, Dr. Kurt Larsen, Dr. Mohan Aryal, Dr. Benoit Millot, Dr. (Ms.) Mari Shojo, Mr. Abdul Hai Sofizada and Ms. Palwasha Mirbacha, for many ideas and discussions on higher education. Finally, I would like to acknowledge Dr. Gamani Corea himself, who closely influenced my thinking on economics, education and the development of countries. I recall many conversations with him on global and national issues over a long period of time with great affection, and with gratitude for the privilege.

Dr. Gamani Corea, in whose honor and memory we are gathered today, was a man of outstanding gifts of intellect and character. He had a career of extraordinary achievement. The roll call of his accomplishments is astonishing. At various times he was a Secretary-General of the United Nations Conference on Trade and Development (UNCTAD); a Chairman of the South Centre in Geneva; a founding member of the Third World Forum; a Permanent Secretary of the Ministry of Planning and Economic Affairs; a Senior Deputy-Governor of the Central Bank; and Ambassador to the European Economic Community (EEC), Belgium, Netherlands, and Luxembourg. He was the founder Chairman of Marga; a Chairman of the Institute of Policy Studies; a Chancellor of the Open University; a President of the Sri Lanka Economic Association; and a member of the National Academy of Sciences. His passion for the economic interests of the Third World transformed the global economic order in many ways, some anticipated and others unexpected, yet always beneficial to developing countries. The influence of his thinking on development has spanned many continents [South Centre (2014)], from the Asian countries surrounding the Indian Ocean, the Malay Straits, and the South China Sea, to the Atlantic coasts of West Africa and Latin America, and the Pacific Coasts of South America and East Asia. Truly a girdle around the earth!

Dr. Corea had an academic career of rare distinction. He was a graduate of two great and famous institutions of higher education, the University of Cambridge, and the University of Oxford. He was the first Sri Lankan to obtain a Doctorate in Economics. He was also the first Sri Lankan to obtain a Doctorate from Oxford University in any subject. Cambridge and Oxford in his time had some of the most famous names in economics in their faculties. Associated with Cambridge was perhaps the most influential economist of the twentieth century, John Maynard Keynes. The role of the state in stimulating countries out of recession and depression, Lord Keynes'

most famous economic contribution, is of enduring importance and highly relevant for us today. The Professor of Economics in Dr. Corea's time as an undergraduate was Sir Denis Robertson, an outstanding monetary economist who coined the term "the Liquidity Trap", an important feature of economies in our own times. There was also Arthur Pigou, who influenced a wide range of fields including welfare economics, public finance and national income accounts, and introduced the concept of "externalities", so important for the economics of education, environmental economics and health economics. There were also academics of the caliber of Richard Kahn, Pierro Sraffa, Maurice Dobb, and Joan Robinson. At Oxford there were famous economists such as Sir John Hicks and Lady Ursula Hicks, the daughter of Sydney and Beatrice Webb (the founders of the London School of Economics) and Dr. Corea's D. Phil thesis supervisor. Later, during his career in government many of these distinguished economists visited Sri Lanka to assist with the preparation of development plans.

In this lecture, delivered to celebrate the life and work of Dr. Gamani Corea, I would like to select one of the most impressive aspects of his many contributions: the forward-looking nature of his thinking on economics and education policy. Higher education was always dear to Dr. Corea's heart. A whole section of his memoirs is devoted to his university days [Corea (2008)]. He often spoke fondly of his memories of university life in post-war Cambridge and Oxford. As always, he had a fund of amusing anecdotes to accompany his narratives. It is appropriate that today's lecture should be on the topic of higher education.

2. The Higher Education Landscape

Higher education is a river that benefits a country through multiple streams and channels. At the macroeconomic level higher education is important for development in the knowledge-intensive global economy of modern times. At the microeconomic level higher education enables individuals to enhance human capital and increase life-cycle earnings. Higher education generates inter-generational economic benefits: increased education achievement in one generation usually results in better education and economic outcomes in the next. Higher education facilitates social mobility by enabling individuals from disadvantaged households to improve their economic and social status over time. Highly educated individuals, especially women, have greater ability to control their fertility and family health: resulting in lower child and infant mortality, reduced morbidity and disease burden, and longer life expectancy. A sound higher education system can contribute to social cohesion by presenting cultural, ethnic, religious, and gender diversity in a favorable light in society. Higher education is also important to create the enlightened citizens needed for a vibrant, modern liberal democracy. The quality of governance is better in countries with more educated representatives in the executive, legislature, and judiciary. Higher education is also associated with lower crime rates and safer communities.

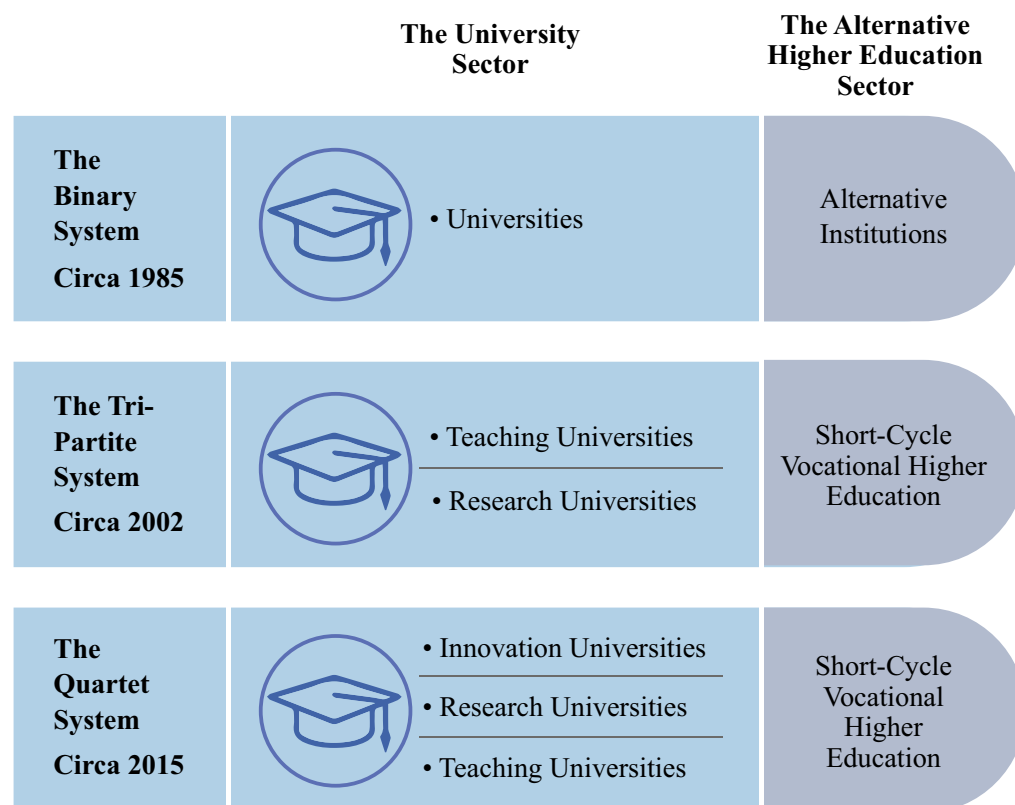
The wide-ranging and varied range of public and private economic, political, and social benefits of higher education are presented in Table 1 below.

Table 1: Benefits of Higher Education

	Economic Benefits	Political and Social Benefits
Public Benefits	More knowledgeable and skilled labor force Greater innovation capacity Faster technology adoption and diffusion Higher national productivity Increased economic output	Higher quality democracy Better governance Good civic participation More political stability Social cohesion Reduced crime Lower state welfare costs
Private Benefits	Greater human capital Better employment Higher earnings More savings and investment capacity	Improved family and personal health Higher life expectancy More responsible citizenship Increased well-being

Source: Author's summary.

Figure 1: The Evolution of Higher Education Institutions, 1985-2015



Source: Author, adapted from Mikhail (2008) and Guimon (2013).

Modern higher education systems are often characterized as containing four groups of institutions. First, teaching universities and degree granting institutions: these normally represent the largest number of higher education institutions in a country. Second, research universities: these are mainly concentrated in wealthy countries and are considered, within the higher education community, as the elite institutions that extend the frontiers of knowledge and generate new ideas and discoveries. Third, entrepreneurial universities which produce commercially viable products and services through research and development activities. Fourth, short-cycle vocational higher education institutions whose mission is to produce highly skilled labor for the economy. This four-way classification of higher education institutions is a relatively recent phenomenon which has evolved over the course of the last three decades [see Figure 1].

There is a clear distinction between universities and short-cycle vocational higher education institutions. Among universities, at least in principle:

- The pursuit of knowledge for its own sake is taken as a worthy occupation.
- Higher education is considered important to cultivate the intellect and enable individuals to contribute constructively to society.
- Education is expected to be guided purely by the goals of knowledge and the principles of intellectual integrity.

Short-cycle vocational higher education institutions, in contrast, are focused purely on producing skilled human resources for the labor market.

Research, teaching, and entrepreneurial universities can and do overlap. Several universities contain elements of two or all three of these types of activities. Many famous research universities engage both in pure academic research as well as in entrepreneurial research and development activities. Universities which are predominantly teaching universities may also have business offices or commercialization centers. Increasingly the lines between these three types of universities are being blurred, especially as universities around the world come under pressure to generate an increasing share of revenue to meet their operating costs and development expenses.

3. Higher Education and Economic Development

The economic returns to higher education have been rising world-wide. Traditionally basic education was seen to enjoy the highest returns. During the last few decades, however, the returns to higher education have been increasing, to the extent that higher education now generates the highest returns [Montenegro and Patrinos (2014)]. In Sri Lanka, too, the economic returns to higher education are substantial [World Bank (2009, 2011), Aturupane *et al* (2014)]. Table 2 provides a fresh illustration. The economic welfare of both male and female headed households rise as the education level of the household head increases.

Table 2: Factors Associated with Economic Welfare, 2012/13

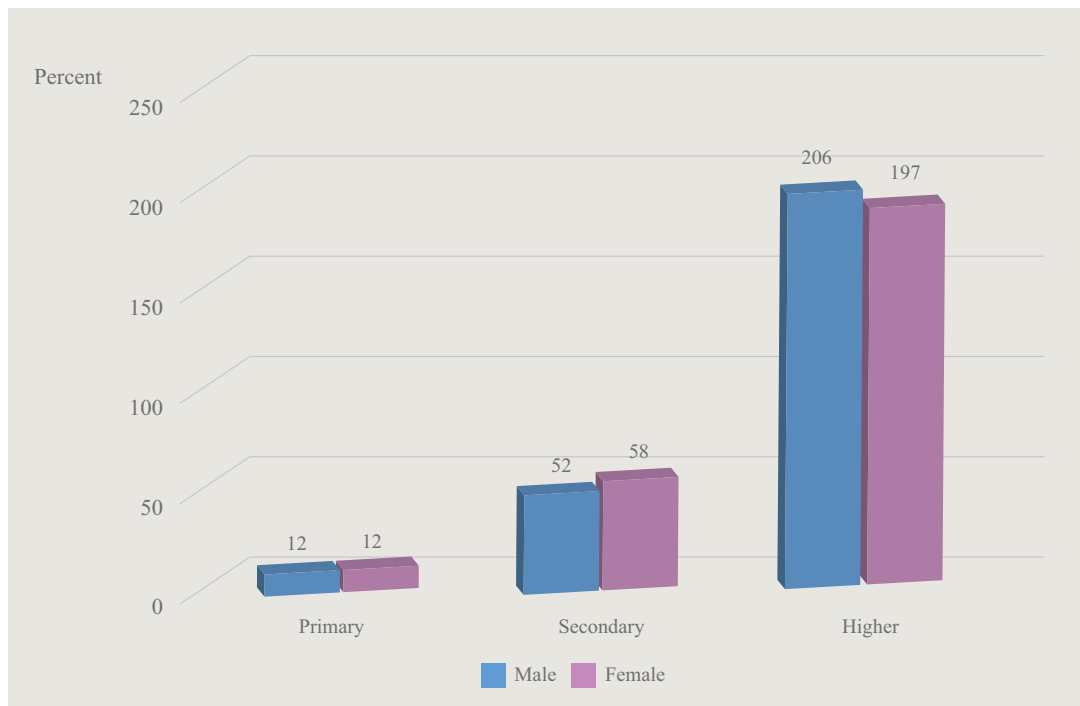
Variables		OLS Male Household Head	OLS Female Household Head
Age		0.00429* (0.00259)	0.0131*** (0.00409)
Age-squared		-1.04e-05 (2.45e-05)	-9.81e-05*** (3.72e-05)
Level of education (Base: No education)	Primary education	0.113*** (0.0355)	0.117*** (0.0339)
	Secondary education	0.421*** (0.0355)	0.456*** (0.0347)
	Higher education	1.120*** (0.0541)	1.088*** (0.0906)
Location (Base: Rural) Province (Base: North Central)	Urban	0.174*** (0.0187)	0.140*** (0.0272)
	Western	0.257*** (0.0332)	0.0514 (0.0523)
	Central	-0.00208 (0.0367)	-0.103* (0.0575)
	Southern	0.0399 (0.0356)	-0.134** (0.0539)
	Northern	-0.133*** (0.0400)	-0.268*** (0.0616)
	Eastern	-0.161*** (0.0364)	-0.224*** (0.0542)
	North-Western	0.0542 (0.0399)	-0.00122 (0.0606)
	Uva	-0.152*** (0.0424)	-0.182*** (0.0642)
	Sabaragamuwa	-0.0892** (0.0383)	-0.164*** (0.0595)
	Constant	8.469*** (0.0808)	8.456*** (0.118)
Observations		15,680	4,854
R-squared		0.204	0.140

Note: Dependent variable is log consumption expenditure per capita. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Estimated from the Sri Lanka Household Income and Expenditure Survey 2012/13.

The association between education and economic welfare grows progressively stronger as the level of education of the household head increases [see Figure 2]. Families with primary educated male and female household heads have economic welfare levels that are approximately 12% above the welfare levels of families with uneducated household heads. Families with secondary educated male household heads have economic welfare levels that are about 52% greater than the welfare levels of families with uneducated male household heads. Families with secondary educated female household heads have economic welfare levels that are about 58% higher than the welfare levels of families with uneducated female household heads. Families with higher educated male household heads enjoy economic welfare levels that are around 206% larger than the welfare levels of families with uneducated male household heads. Families with higher educated female household heads have economic welfare levels that are around 197% more than the welfare levels of families with uneducated female household heads. This shows the substantial economic benefits that accrue to households with higher educated heads.

Figure 2: The Association between Higher Education and Economic Welfare, 2012/13



Source: Calculated from Table 2.

The global increase in the returns to higher education reflects the fact that universities and short-cycle vocational higher education institutions can play a vital role in promoting economic development. This requires a higher education system of adequate size and quality to: (a) meet the human, knowledge and intellectual capital needs of industries and services; (b) expand research and development to support increasingly more sophisticated and complex production processes; and (c)

generate a continuous stream of discoveries and innovations. The higher education system also needs to provide an environment for students and academic staff to enjoy the higher levels of culture and civilization associated with human advancement.

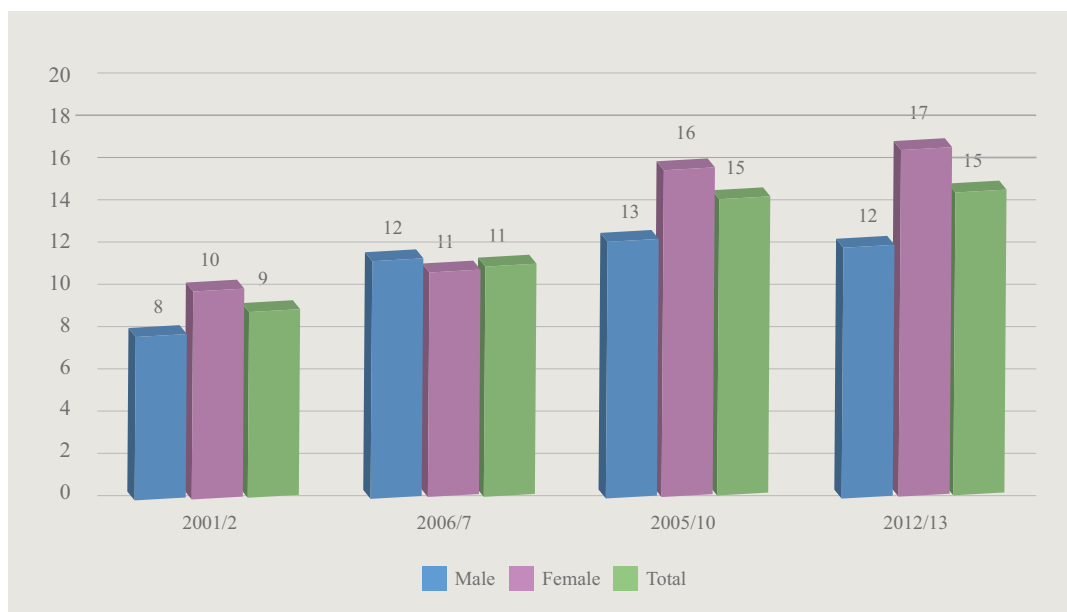
4. Access and Participation in Higher Education

4.1 The Time Trend of Higher Education Attainment

Higher education enrollment has been increasing over time. About 9% of the age group 19-24 years was enrolled in higher education in 2001/2 [see Figure 3]. Higher education enrollment among young women was 10% and among young men 8%.

Over the following decade higher education enrollment increased to 15% in the age group 19-24 years. The gender gap grew over the period, with female higher education enrollment, 17%, now exceeding male higher education enrollment, 12%, by a larger margin than a decade ago.

Figure 3: The Time Trend of Higher Education Enrollment



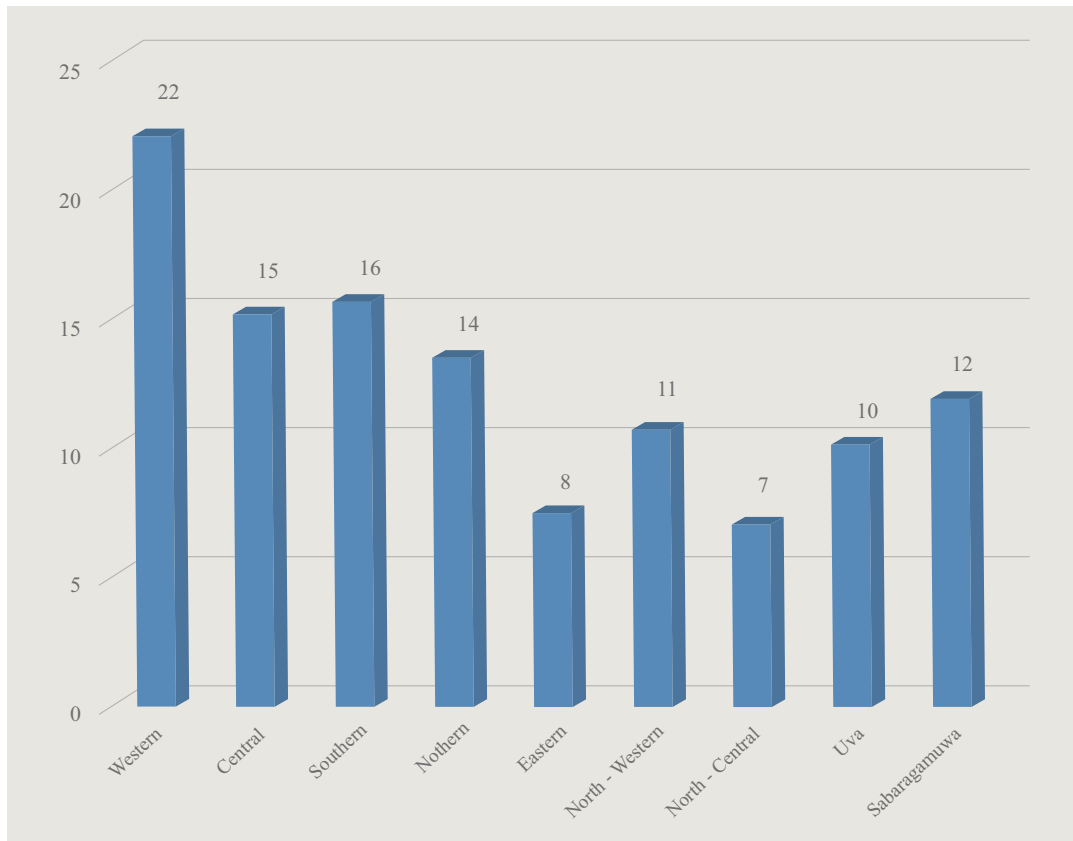
Source: Estimated from Household Income and Expenditure Surveys, various years.

4.2 The Regional Pattern of Higher Education Enrollment

There are considerable geographical variations in higher education enrollment. The largest enrollment is in the Western Province, 22%, followed by the Southern Province, 16%, and the Central Province, 15% [see Figure 4]. The lowest enrollment is in the North-Central Province, 7%, followed by the Eastern Province, 8%. This pattern of regional variations in higher education enrollment partly reflects the relative levels of economic and general education development of the country. The Western, Southern and Central provinces have wealthier and more educated households than

the North-Central and Eastern Provinces, and also have more advanced school systems. The regional variations could also reflect the variations in higher education opportunities available in the different provinces, with more higher education institutions located in the Western, Southern and Central provinces and fewer higher education institutions located in the North-Central and Eastern Provinces. This would especially apply to the availability of private higher education institutions.

Figure 4: The Province-Wise Pattern of Higher Education Enrollment

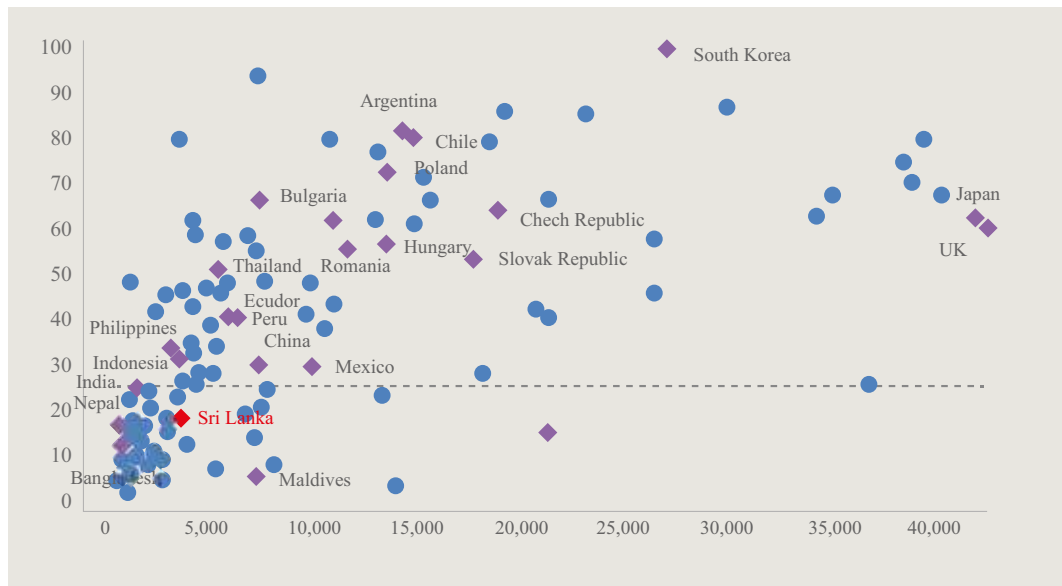


Source: Estimated from Household Income and Expenditure Surveys, various years.

4.3 International Comparisons of Higher Education Attainment

Higher education enrollment in Sri Lanka is low by international standards.

This is a point that has been made repeatedly in the recent development literature [Gunatilleke (2015), Aturupane (2015)]. Participation in higher education is considerably below East Asian countries such as China, Indonesia, Philippines, Malaysia, Thailand, and of course Japan, South Korea and Singapore [see Figure 5]. It is also significantly lower than Eastern European countries such as the Czech Republic, Georgia, Hungary, Poland, Romania, the Slovak Republic and Bulgaria; and Central and South American countries such as Argentina, Brazil, Chile, Ecuador, Mexico, Paraguay and Peru. The two main reasons for the low higher education enrollment in Sri Lanka have been the difficulty of financing large scale enrollment in public sector higher education institutions and the cautious approach to private sector provision of higher education.

Figure 5: Higher Education Enrollment in International Perspective, 2012-2014

Source: World Bank Education Statistics. The date is for 2013 or the nearest year.

5. Expansion and Diversification of Higher Education

Participation in higher education can be increased through multiple policy measures. There is considerable pent-up demand for higher education so that increasing the supply of higher education spaces in existing public sector institutions, or setting up new institutions, can increase participation. The scope for such expansion, however, is limited for a resource-constrained government. An additional and important option is to create a favorable climate for private sector investment in higher education. This would require establishing a suitable regulatory framework for the registration, quality assurance and accreditation of private higher education institutions.

Enhanced enrollment in higher education should be strategically oriented towards economic and human development. The economic relevance of higher education is essential when enrollment expands. There are a variety of initiatives to increase the relevance of the higher education system.

- a) Enrollment increases can be prioritized for directly labor-market relevant degree programs. These would mainly be in the Sciences, Technology, Engineering, and Mathematics (STEM). In-take capacity in existing degree programs in these STEM areas can be expanded. In addition, new industry relevant degree programs can be introduced.
- b) Curriculum reforms can be undertaken by degree programs to increase economic relevance. Employer feedback can be obtained to improve the attributes of graduates for their workplaces. New skills can be taught and new technology introduced into degree programs.

- c) The alternative higher education sector or Short-cycle Vocational Higher Education (SVHE) sector can be expanded. SVHE institutions are meant to be labor-market oriented and graduates from these could be employed in industries and high-end service organizations.
- d) Fourth, the promotion of private higher education institutions would be relevant for the economy. Private higher education institutions, which are mainly for-profit entities, need their graduates to be employable if they are to thrive and prosper. In consequence, the study programs offered by such institutions are usually directly job-oriented.

6. Innovative Teaching-Learning in Higher Education

The majority of universities and higher education institutions, through history and world-wide, have been predominantly centers for teaching and learning. The main mandate of teaching universities and higher education institutions, the production of high-quality graduates for the economic and social needs of a country, is of vital importance for developing countries including Sri Lanka. This is especially necessary in the context of the world-wide massification of higher education and the increasingly sophisticated demands of the global knowledge economy [Altbach (2015)].

The quality of graduates is multi-dimensional. Graduate quality includes knowledge of their subjects; the skills and capabilities required for the labor market; and the values and behavior needed to be a good citizen in society. The output of high-quality graduates from universities depends on a variety of factors, including the socio-emotional skills and knowledge of the entering students; the quality of curricula, teaching and assessment in higher education institutions; teaching-learning resources such as ICT centers, science and engineering laboratories, libraries and reading material; and the physical facilities of the university.

6.1 Outcome-Based Education and Student-Centered Learning

The global trend in teaching-learning among modern universities and higher education institutions is to move away from input-based education and teacher-centered methods to Outcome-Based Education (OBE) and Student-Centered Learning (SCL). OBE provides a constructive framework for the integration of curricula, teaching-learning activities, and assessment methods to produce the desired outcomes of study programs. SCL is an active learning process where students directly interact with their study material and engage among themselves, with academic staff members mainly playing a guiding role. The impact of SCL on student learning is considered to be stronger and more enduring than traditional teacher-centered methods.

Student-centered learning can be used to implement outcome-based education. SCL could involve, depending on the study program and the outcomes sought, methods such as small group discussions, group work and team exercises, problem-

based learning, assignments, case studies, concept mapping or mind mapping, just-in-time learning, inquiry-based learning, computer simulations and games, writing with peer review, group tests and quizzes, random calling, debates, snow balling and syndicate groups, buzz groups, fish bowls, and team learning. Assessment methods would need to be aligned with these teaching- learning approaches.

Student-centered learning is also redefining learning spaces in universities. The traditional large lecture theatres and halls are being complemented and supplemented through a range of learning spaces that seek to promote collaborative and team-oriented learning. Concepts such as greater use of light and air, circular or oval tables, flexible seating, individual and personalized spaces for students and staff, and smaller, open learning spaces for group-based learning are increasingly emphasized.

Box 1: The United Kingdom: National Teaching Fellowship Awards

The U.K. National Teaching Fellowship Awards (NTFS) celebrate outstanding teaching and learning in higher education. Academics from England, Scotland, Ireland and Wales are eligible to apply. Applications are made by individual academics, with support from their institutions. Each higher education institution can nominate up to three academics.

The awards can be used by the winners for professional development in teaching and learning. Award winning individuals receive recognition within the U.K. and overseas, as these are highly competitive. The awards also open new opportunities for career development and progression. Award winners also become part of a community of professionals who are passionate about higher education teaching.

Higher education institutions, too, benefit. The NTFS awards are “increasingly used as a model to develop and extend university-wide schemes, aiming to raise the status of teaching and instill pride in the profession and student learning” and “can enable staff to cross boundaries, collaborating with colleagues in other disciplines and forging links with universities abroad” (NTFS).

The NTFS scheme has been in operation for 15 years. At present there are over 640 NTFS fellows from more than 40 academic disciplines.

Source: The Higher Education Academy, England and Wales.

Some Sri Lankan degree programs do follow OBE and SCL. However, a substantial number of study programs still need to make the transition into these modern teaching-learning methods. A variety of initiatives are needed to implement SCL and OBE universally in the higher education sector. First, academic staff would need to be trained in the concepts and methods of OBE and SCL, and the utilization of SCL to achieve OBE, through appropriate professional development programs. Second, curricula, pedagogy and assessment systems would have to be modernized for OBE and SCL. Third, the teaching-learning material, equipment (particularly ICT) and

physical facilities (especially for group projects and team-based work) required for SCL and OBE would need to be developed in the university system.

Fourth, an appropriate quality assurance framework, at both the program level and the institutional level, will have to be developed. In addition, the government could consider setting up an award scheme for high-quality teaching and learning for universities. An example of such a scheme in the U.K. is outlined in Box 1 above.

7. ICT in Higher Education

Information and Communications Technology (ICT) is essential to support and enhance teaching, learning and research in a dynamic and rapidly evolving global environment. Some of the trends in higher education, commencing in high-income countries and flowing down to middle-income countries, include the following:

- a) **Mobile Learning and One-to-One Computing.** The swift expansion of mobile telephony has revolutionized ICT technology over the last decade. Smart phones and tablet devices are widespread in higher educational settings. The trend in universities around the world is to create learning environments that assume universal access to ICT and the Internet, including providing every student with IT equipment (or expecting each student to own a personal device that can access the Internet).
- b) **Personalized Learning and Open Courseware.** There is an enormous quantity of higher educational resources now available through the Internet. As a result, academics are increasingly providing links to video lectures and texts by which students can build on their level of prior preparation and follow their personal interests. For instance, in the Khan Academy there are lessons in algebra designed to fill gaps in the learning of some students and enable them to reach the level of their peers.
- c) **Teacher-generated open content.** Organization for Economic Cooperation and Development (OECD) higher education systems are increasingly empowering academics and university staff teams to identify and create learning resources that are found to be the most effective. Several online textbooks allow teachers to edit, add to and customize material so that their students receive a tailored copy that precisely matches the style and pace of the study program. Such activities are often supported through non-traditional notions of intellectual property and copyright, such as Open Courseware and Creative Commons Licenses.
- d) **Teacher Managers or Mentors.** The role of academic staff in the lecture hall is being transformed from a “guru” or “font of knowledge” to an instructional manager whose role is to help guide students through individualized learning pathways, identifying relevant learning resources, creating collaborative learning opportunities, and providing academic insight and learning support both during formal class time and beyond the designated lecture period.

- e) **Cloud Computing.** ICT applications are increasingly moving from the stand-alone desktop or laptop computer and onto servers in internet accessible data centers. This enables cheaper devices that do not need the processing power or size of the PC. The main challenge for developing countries is to provide the volume and scale of connectivity required for tens of thousands of staff and students to access the information sitting in the “cloud” in real time.

The Internet and access to digital resources increasingly need to become integral features of teaching and learning in the university system. Globally, even the distinction between campus-based learning and e-learning is losing relevance and becoming “blended” learning, whereby ICT and the Internet are integrated into curriculum development, course management and content delivery for campus-based courses. At international levels, the headlines highlight ground-breaking innovations such as Massive Open Online Courses (MOOCs), the Khan Academy, or Open Courseware (MIT) and Open Learning Initiatives (Carnegie-Mellon). In addition, campus teaching and learning incorporates online video lectures, e-journal access, and searches in engines such as Google Scholar, Bing and Wikipedia. These resources are so extensively used by students that anti-plagiarism software programs have now become a regular tool in assessment processes. Individual students need guidance to access these educational resources. In addition, universities can use technologies like group videoconferencing to bring rare expertise to entire classes of students. The main need for Sri Lankan universities will be resources to transform the campus teaching-learning environments with the required learning spaces, equipment and technology, and internet access. Academics generally are able to use ICT in teaching and learning. However, the widespread use of technology for tens of thousands of students will require substantial investment in ICT equipment and technology, as well as band-width and internet access.

8. Enhancing Socio-Emotional Skills of Graduates

Socio-emotional skills are among the most important determinants of economic performance over the life-cycle. The main socio-emotional skills, also known as soft skills or employability skills, needed in the labor market include problem solving, resilience, achievement motivation, control, teamwork, initiative, confidence and ethics [Guerra *et al* (2014)]. Higher education institutions are increasingly placing emphasis on the development of these socio-emotional skills among students. These skills are especially important in arts, commerce, humanities, management, natural science, and social science degree programs, where students are not trained for a specific occupation, but may work in a wide range of occupations. There are a variety of strategies that can be adopted to develop these socio-emotional skills. These include the following:

National level

- Encouraging universities and higher education institutions to develop and implement strategic plans which encompass and combine curricular, co-curricular and extra-curricular activities to enhance socio-emotional skills.

- Supporting communities of practice and networks of academic staff for socio-emotional skills and employability development at institutional and national level.
- Recognizing and rewarding high impact initiatives and educational practices on socio-emotional skills and employability of students. This could, for instance, be a set of award schemes.
- Promoting research and evaluation of measures that impact the socio-emotional skills and employability of university students.

Institutional Level

- Integrating the development of socio-emotional skills into curriculum design and pedagogy, promoting assessment of learning outcomes that are aligned with soft skills and employability, and including work-related learning tasks and work-based learning opportunities.
- Creating ‘academic champions’ for socio-emotional skills and employability development in universities, faculties, and departments.
- Enhancing induction training and continuous professional development of academic staff on pedagogy for socio-emotional skills and employability development. The Staff Development Centers (SDCs) of universities can be used to facilitate such activities.

Table 3: PRACTICE Skills, Sub-Skills, Big Five Traits, and Biological Foundations

PRACTICE: Skills for Success	Sub-Skills (Skills, Attitudes, Beliefs, Behaviors) identified by employers	Related Big Five Personality Traits	Neuro-Biological Foundations
Problem-solving	Social-information processing skills Decision-making Planning skills	Conscientiousness	Executive attention systems—ability to focus attention and to inhibit negative emotionality
Resilience	Stress resistance Perseverance Optimism Adaptability	Conscientiousness (Grit) Neuroticism	Biological system focused on preventing harm

Achievement Motivation	Mastery orientation Sense of purpose Motivation to learn	Conscientiousness (Grit) Openness to experience	Biological tendency to seek out new environments Orienting sensitivity—tendency to respond to sensory stimulation
Control	Delay of gratification Impulse control Attentional focus Self-management	Conscientiousness	Executive attention systems—ability to focus attention and to inhibit negative emotionality Self-Regulatory System—delay of gratification
Teamwork	Empathy/ Prosocial Low aggression Communication skills Relationship skills	Extraversion Agreeableness	Biological system promoting active approach and exploration—tendency to enjoy social interaction and positive moods
Initiative	Agency Internal locus of control Leadership	Conscientiousness Openness to experience	Biological tendency to seek out new environments Orienting sensitivity—tendency to respond to sensory stimulation
Confidence	Self-efficacy Self esteem Positive identity	Neuroticism	Biological system that is focused on preventing harm
Ethics	Honesty Fairness orientation Moral reasoning	Conscientiousness	Biological system promoting active approach and exploration—tendency to enjoy social interaction and positive moods

9. Research, Innovation and Development

9.1 Pure Academic Research

Basic research or fundamental research is often a public good, generating wide and varied social benefits. These include knowledge creation, new discoveries, international knowledge flows and exchanges, and the rapid acquisition and transmission of new ideas and learning. The development of fundamental research requires a range of norms and practices that are important for good quality research. These include a high degree of autonomy for research, such as ideological neutrality in the selection and pursuit of research themes and problems; scholarly publication based on peer review; and linkages between teaching and research, typically through postgraduate education.

The promotion of academic research is extremely important for Sri Lankan universities to gain international recognition as centers of knowledge excellence. Excellence in research plays an important role in international rankings of universities [Millot (2014), (2015)]. The government has already taken several significant steps to promote academic research. The universities award substantial importance for research publications in the promotion of academic staff. The grant of a research allowance is a further incentive and reward. Within the academic community research records contribute to the esteem and honor in which a lecturer or professor is held, as in most university systems. However, there are also constraints to research, especially a shortage of funds for equipment and material, and physical distance from major global centers of research.

High-speed internet connections and relatively inexpensive IT equipment has transformed the global and national research environment. There is increasingly greater research collaboration among academics across universities, countries and even continents. An example of a high-level initiative to promote research collaboration among Japanese higher education institutes is described in Box 2 below. ICT enables academics from developing countries to collaborate with global peers and access expensive instruments and large data sets. In addition, few universities can afford the high cost of ownership of instruments such as supercomputers, electron microscopes, astronomical telescopes, medical imaging, and simulators. As a result, typically arrangements are made to lease time on such equipment and access them through high-speed networks. These developments have opened up new opportunities for academics from lower-middle income countries to undertake basic research. Over time, it would be encouraging to see rising numbers of Sri Lankan academics making use of such opportunities. The government could encourage such activities, especially by helping academics to network with wealthier universities and engage in research collaborations.

Box 2: The Japanese Inter-University Research Institute Corporation

The Inter-University Research Institute Corporation is an innovative institutional model promoting cutting edge joint research among Japanese academics from both public and private universities. The Corporation provides large-scale facilities, enormous quantities of data and academic material, and a core facility for networked collaborative research and for pioneering new research fields. The four main institutes that constitute the Corporation are:

- The National Institute of Natural Sciences (NINS), containing the National Astronomy Observatory of Japan, the National Institute for Fusion Science, the National Institute for Basic Biology, the National Institute for Physiological Sciences and the Institute for Molecular Science.
- The Research Organization of Information and Systems (ROIS), which contains the National Institute of Polar Research, the National Institute of Informatics, the Institute of Statistical Mathematics and the National Institute for Genetics.
- The Higher Energy Accelerator Research Organization (KEK), containing the Institute of Particle and Nuclear Studies, the Institute of Materials Structure Science, the Accelerator Laboratory and the Applied Research Laboratory.
- The National Institute for Humanities (NIHE), which contains the National Museum of Japanese History, the National Institute of Japanese Literature, the National Institute for Japanese Language and Linguistics, the International Research Center for Japanese Studies, the Research Institute for Humanity and Nature, and the National Museum of Ethnology.

The Corporation seeks to promote research and postgraduate studies, collaborations across universities, and between Japanese universities and overseas universities.

Source: Inter-University Research Institute Corporation, Japan.

9.2 Research for Innovation and Development

Research and innovation are at the heart of economic development in modern advanced countries. The most spectacular success story of university-industry research and innovation linkages is the relationship between Stanford University and Silicon Valley. The innovations produced through this collaboration include the laser, the microprocessor, the personal computer, the integrated circuit, video and sound recording, aerospace and office automation, high-energy physics, video-game technology and recombinant-DNA. Companies located in Silicon Valley and which are now household words include: Apple Inc., Cisco Systems, E-Bay, Facebook, Google, Hewlett-Packard, Intel, Oracle Corporation and Yahoo!

The role of universities in generating growth through research, innovation and development linkages with industry is of major importance for public policy. Typically, the technological sophistication of industries, the capital available to firms, and the governance framework for innovation means that the challenges for

greater industry-university collaboration vary between developed and middle-income countries [Table 2].

Table 4: A Typology of University-Industry Links, from Higher to Lower Intensity

High (Relationships)	Research partnerships	Inter-organizational arrangement for pursuing collaborative Research and Development (R&D), including research consortia and joint projects.
	Research services	Research-related activities commissioned to universities by industrial clients, including contract research, consulting, quality control, testing, certification, and prototype development.
Medium (Mobility)	Shared infrastructure	Use of university labs and equipment by firms, business incubators, and technology parks located within universities.
	Academic entrepreneurship	Development and commercial exploitation of technologies pursued by academic inventors through a company they (partly) own (spin-off companies).
	Human Resources training and Transfer	Training of industry employees, internship programs, postgraduate training in industry, secondments to industry of university faculty and research staff, adjunct faculty of industry participants.

Low (Transfer)	Commercialization of Intellectual Property (IP)	Transfer of university – generated IP (such as patents) to firms (e.g., via licensing).
	Scientific publications	Use of codified scientific knowledge within industry.
	Informal interaction	Formation of social relationships (e.g., conferences, meetings, social networks).

Source: Adapted by Guimon (2013) from Perkmann and Walsh (2007).

The degree of intensity of collaboration between universities and industry varies, from high-intensity relationships through medium-intensity linkages to low-intensity relationships [see Table 3]. Sri Lankan universities benefit from some high-intensity relationships such as contract research, consulting, testing and certification; and some medium-intensity relationships such as training of industry employees and internship programs for students. However, this is on a limited scale, and requires considerably greater scale and scope across universities and among industries to make a significant contribution to economic growth.

Table 5: Priorities for University-Industry Partnerships at Different Stages of Economic Development along the three Missions of Universities

	Most developed countries	Least developed countries
Teaching University	<ul style="list-style-type: none"> • Private participation in graduate programs • Joint supervision of Ph.D. students 	<ul style="list-style-type: none"> • Curricula development to improve undergraduate and graduate studies • Student internship
Research University	<ul style="list-style-type: none"> • Research consortia and long-term research partnerships to conduct frontier research 	<ul style="list-style-type: none"> • Building absorptive capacity to adopt and diffuse already existing technologies • Focus on appropriate technologies to respond to local needs
Entrepreneurial University	<ul style="list-style-type: none"> • Spin-off companies, patent licensing • Entrepreneurship education 	<ul style="list-style-type: none"> • Business incubation services • Entrepreneurship education

Source: Guimon (2013).

There are several policy initiatives to promote research and innovation, especially through university-industry linkages targeted at growth promoting activities:

- The creation of intermediary organizations, such as science parks, technology transfer offices and business incubators.
- Grants to universities and firms for collaborative research and development projects.
- Support services to match firms and universities for research and development activities.
- Outreach activities to promote networking and create awareness of the benefits of collaboration.

10. Private Higher Education

The private sector has been playing an increasingly important role in the financing and delivery of higher education services in the twenty-first century. Part of this is due to the opening of former communist countries, such as China and many Eastern European nations, to the private sector. Another reason has been the realization of states that the demand for higher education cannot be met only from public funds, and that private resources, too, need to be invested. The country with the largest share of private sector participation in higher education is South Korea [see Box 3]. This has been the result of deliberate government policy over a long period of time.

Private higher education institutions consist of two broad types: non-profit higher education institutions and for-profit higher education institutions [see Figure 6]. Non-profit private higher education institutions own their assets and facilities, and their staff are not government officials: however, they may receive state funding for students and research, and be subjected to government regulation.

Box 3: The Private Higher Education Sector in South Korea

There are about 359 higher education institutions in South Korea, with an enrollment of around 3.3 million students. Out of the country's 222 four-year colleges, 180 are private. Among the 149 two-year and three-year junior colleges, 140 colleges are private. Overall, approximately 85 percent of higher education enrollment is in private institutions.

In South Korea, as in the United States, private higher education institutions are held in high esteem. The oversight, quality assurance and accreditation of South Korea's higher education institutions is the responsibility of the Ministry of Education, Science and Technology. The Ministry "controls the establishment of institutions and academic departments, curriculum and degree requirements, and student quotas". The Ministry recognizes seven different types of higher education institutions: (a) colleges and universities; (b) industrial universities; (c)

universities of education; (d) junior colleges; (e) broadcast and correspondence universities; (f) technical colleges; and (g) other miscellaneous institutions.

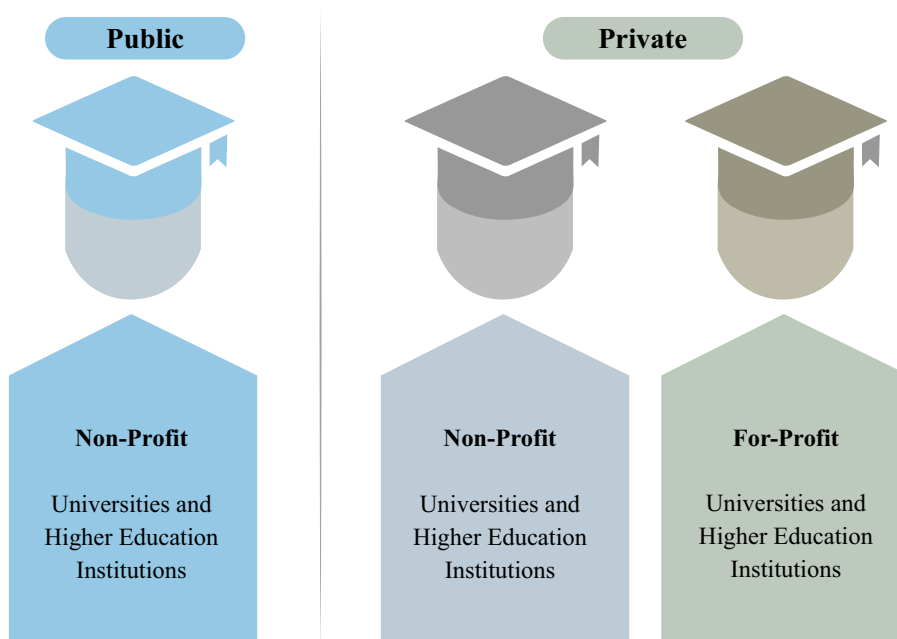
The accreditation of universities is the responsibility of the Korea Council for University Education (KCUE). The accreditation of programs is conducted by specialist agencies recognized by the Ministry. There are around 200 universities accredited by KCUE.

Source: Ministry of Education, Science and Technology, South Korea.

Non-profit institutions have historically played an important role in the higher education sector. Many of the modern world's most famous universities, such as Harvard, Stanford, Princeton and Yale in the U.S.A., and Cambridge and Oxford in the U.K., are non-profit and non-state universities. Non-profit private higher education institutions were often originated by, and may sometimes still be linked to, religious institutions. For example, ancient South Asian higher education institutions such as Nalanda and Taxila were centers of higher learning associated with Buddhism and Hinduism. Many of the oldest European universities, including Bologna, Oxford, Salamanca and Cambridge, were associated with the Christian Church. The promotion of private non-profit higher education institutions can be of great benefit to developing countries. However, they depend on the existence of a sufficiently wealthy charitable organization or philanthropist who is willing to invest enormous resources to develop a higher education institution. This is rare in developing countries, although not entirely absent, as seen from the case of Aquinas College, established by the Catholic Church, in Sri Lanka.

Private for-profit higher education institutions have rapidly proliferated in modern times. This has partly been the result of swiftly increasing demand for higher education, and partly the outcome of countries opening their higher education systems to private sector participation. The presence of private higher education institutions has several advantages for a country.

Figure 6: Classification of University Ownership



10.1 Benefits of Private Participation in Higher Education

Private higher education institutions increase investment in the higher education sector and raise the volume of resources available for expansion and development. This is especially important because the unit cost of higher education services is typically larger than the unit cost of primary and secondary education services. Expanding participation in higher education is vital for advancement and development as a country ascends to higher peaks of economic development. The demand for higher education increases steeply as a country develops, and the cost of creating adequate in-capacity in the higher education sector rises sharply. Even many high-income countries, in consequence, have introduced policy initiatives to increase private sector participation in higher education in recent times.

Private higher education institutions usually have greater flexibility and can respond to changes in student demand or the economic environment more swiftly than public higher education institutions. This is particularly the case for private profit-making HEIs, whose very existence depends on being able to match the supply of degree programs and courses to the demand from students. Public higher education institutions, in contrast, normally have less flexibility in changing academic staff and the menu of degree programs and courses provided.

Private higher education institutions increase the quantity and diversify the range of institutions that provide higher education services. A country with multiple providers and a variety of higher education institutions offers a broader range of programs. This enables students to choose courses and select programs more closely linked to their circumstances and preferences. The country can benefit from

the presence of graduates who have a wide and varied range of higher education experiences than a more narrow and limited set of higher education backgrounds.

The presence of private higher education institutions generates competition. Competition can lead to improvements in the quality of both public and private higher education institutions. Also, competition can result in cost reductions as the institution seeks to expand enrollment and market share. Competition can also spur innovations in higher education services, including the introduction of new, market-oriented programs and courses.

Private higher education institutions can also make an important contribution to economic growth. This is particularly the case if Sri Lanka can become a hub for overseas students. Private higher education institutions, due to their greater adaptability and flexibility, are able to attract foreign students. For instance, where private higher education institutions are in-country franchise operations of reputed higher education institutions in developed countries, international students from other countries, especially in Asia, can be attracted to Sri Lanka. The presence of university campuses generates demand in the neighborhood for a wide range of goods and services, including food and accommodation, social and cultural activities, and ancillary services.

Private higher education institutions can produce employment opportunities for bright young academics and researchers, as well as university managers and administrators. The private higher education sector usually relies heavily on public sector academics. However, over time private institutions increase the share of academics who are full-time employees. This creates jobs for well-educated and qualified individuals seeking academic careers. In addition, private higher education institutions require managerial, administrative and clerical staff for their institutions. With the growth of the private higher education sector jobs in these institutions also expand.

10.2 Limitations of Private Higher Education Institutions

Private higher education institutions especially when they are new, normally do not deliver courses and programs that have high set-up costs. Degree programs in, for instance, heavy engineering do not usually attract private higher education institutions. Also, for-profit higher education institutions do not provide courses and programs where student demand is low, but which are important for the intellectual and cultural life of the country. For example, many programs in the arts, humanities, and social sciences, and even the physical and biological sciences, rarely attract sufficient private investment.

Private higher education institutions, particularly profit-making institutions, may offer programs and courses of weak quality. Private higher education institutions, in their drive to reduce costs and generate profits, can operate with inadequate physical capital, especially facilities and equipment. This has not been a major problem in Sri Lanka thus far, mainly because there are a small number

of private higher education providers, nearly all of whom focus on a limited range of programs. But it could become a problem as the private higher education sector expands in the future. The optimal policy response is to establish a competent quality assurance and accreditation agency to safeguard standards and facilitate the entry and operation of good quality private higher education providers.

Private profit-making higher education institutions may be “footloose”, and could close down leaving students stranded in mid-program. This has not been a major risk in Sri Lanka thus far. Some degree of risk, however, needs to be recognized. The best policy response, once more, is to ensure that all private higher education institutions operate under the umbrella of a quality assurance and accreditation agency.

The services provided by private for-profit higher education institutions may not be equitable. Normally the institutions cater to students from affluent homes, while bright and qualified students from less wealthy families may be unable to pay the fees required by these institutions. Countries respond to this limitation in many ways. Governments can make means-tested scholarships available for poor students. Also, private higher education institutions can be requested to provide a percentage of places at a subsidized cost for poor students. In addition, the government could take the position that the public higher education institutions will take care of the less affluent students, so that at the national level there is equity of access and opportunity.

A further criticism levied against the private sector, in some countries where higher education is either solely or nearly a public monopoly, is that the private higher education institutions can offer better benefit packages and attract the best academics away from public higher education institutions, weakening the latter. This fear is usually unwarranted in practice. When countries open up to the private higher education sector at first, some academics in public higher education institutions do teach part-time in the private institutions: but there is no mass outflow of staff from public to private institutions. Academics prefer to stay in the public sector for many reasons, including greater job security, and time for research and other activities. Over time, as the private higher education institutions become better established and if their employment terms and conditions are favorable, some public sector academics may move to the private sector. This process, however, creates opportunities for intelligent and well-educated young individuals to become academics, leading to an overall increase in employment opportunities for academics in the country.

10.3 Policy Options to Promote Private Sector Participation in Higher Education

The state can promote the development of private higher education institutions through a variety of policy initiatives, as outlined below.

The provision of a subsidy for students attending private higher education institutions. This could be in the form of scholarships, student loans or vouchers. There are several advantages to this initiative. The cost of higher education will be reduced

for students due to the scholarships and vouchers or deferred through loan schemes. It can also promote competition among higher education institutions if students can carry the financial benefit to whichever institution they select. Competition can be extended to public universities if students become entitled to this financial benefit in either public or private higher education institutions, and are free to select between either set of institutions. Student loan systems have been successful in countries such as the U.S.A. and Australia.

Student loan schemes also have important limitations. Student loans are difficult to administer in countries that have not acquired the culture of borrowing to meet the costs of higher education. Two important conditions for success are that the government should be able to track the incomes of graduates accurately and have an effective collection mechanism. Where these two conditions are not met, repayment rates are usually poor. It is unclear whether Sri Lanka has the ability to design and implement effective tracking and collection mechanisms.

Scholarship schemes can also be inequitable if they are awarded on the basis of performance at public examinations, rather than economic need. Voucher systems are promising but require a drastic change in the culture of higher education institutions, especially public universities. In consequence they can be difficult to implement fully, or except over a lengthy period of time. With voucher schemes it is also important that weaker institutions receive substantial capacity building.

The award of financial grants towards the capital costs of constructing university buildings and purchasing equipment. Such grants would provide substantial incentives for higher education institutions as the capital costs of facilities and equipment can be very high. Non-profit private higher education institutions could particularly benefit. In order for the full benefits to be realized, the land on which the buildings are constructed or refurbished would need to be either owned freehold or on a long lease by the institutions.

Grants of land for private higher education institutions. Developing a large and landscaped university campus can be an expensive undertaking. The provision of land, for example through long-term leases or freehold ownership, can be an attractive incentive for private higher education institutions. However, if land is available only on short-term leases, these institutions would face considerable investment risks, and may be reluctant to invest substantial resources in construction and fixed equipment.

The provision of research funds to private higher education institutions. Academics from private institutions could be allowed to compete for research grants on the same terms and conditions as academics from public universities. Research funding can stimulate research activities, which in turn are positively related to the quality of teaching, as active researchers are more likely to be up-to-date with their academic knowledge than non-researchers. It can also encourage some higher education institutions to be centers of excellence. The research output may also benefit the government through the contracting of policy research from academics, and to private sector firms. A high-quality research system in specialized niche areas

could also attract foreign researchers and grants to the country, as well as contracts from overseas private firms over the long-term.

These different policy options are not mutually exclusive or in competition. The government could choose to implement more than one, or even several, of these options. The adoption of different options could also be phased in at different stages. The sequencing of reforms would have to be undertaken strategically. The policy response of governments to the issue of low quality of some private higher education institutions is to develop sound quality assurance and accreditation mechanisms, dealt with in the next section.

11. Quality Assurance and Accreditation

Quality assurance and accreditation systems have seen rapid growth and development world-wide over the last twenty years. There are several factors that have caused this expansion. First, as higher education has moved from small elite systems to mass systems there has been a concern that quality standards have been experiencing downward pressure. Second, as the global economy has become increasingly knowledge-intensive employers have been demanding greater labor market relevance from higher education institutions. Third, fiscal restrictions have tightened funding for growing higher education systems, resulting in greater pressure from governments to deliver results. Fourth, the quantity of higher education institutions has rapidly expanded, resulting in growing attention by policy makers to quality. Fifth, stakeholders, especially students, have been increasingly searching for indicators of quality when selecting institutions. Developments in quality assurance and accreditation in Europe are presented in Box 4.

Box 4: Institutional Quality Assurance in Europe

The most important transformation in quality assurance in Europe in the 21st century has been the development of quality assurance processes. A survey of 222 higher education institutions in 36 countries in 2010 confirmed that the majority of IQA processes were introduced after the adoption of the European Standards and Guidelines for Quality Assurance in the Higher Education Area (ESG) in 2005. An increasing quantity of higher education institutions have institutional quality assurance policies and processes which are utilized for planning and quality improvement. A large proportion of institutions (63%) have institution-wide policies and processes. A further 13% have policies and/or processes at the faculty level. Overall, 99% of higher education institutions have a QA policy or system or both. Quality assurance is particularly strong in countries such as Austria, Belgium, Finland, Hungary, Ireland, Norway, Spain, Switzerland and the United Kingdom.

Sri Lanka has a quality assurance process developed over the last decade under the leadership of the University Grants Commission. The various elements of a good quality assurance system have been developed, including protocols, guidelines and processes for institutional and program reviews, a pool of well-trained quality assurance reviewers in the country, and the creation of Internal Quality Assurance Units (IQAUs) in universities. Over 600 study programs have been reviewed across the public universities. In addition, all universities have benefited from at least one, and in most cases two, institutional reviews. Quality assurance reviews of private higher education institutions have also been conducted, chiefly at the request of these private institutions.

There are several next steps in the development of the quality assurance and accreditation framework in Sri Lanka.

The government could move towards the establishment of a semi-autonomous Quality Assurance and Accreditation Agency covering both public and private higher education institutions. Globally, there has been a movement in this direction [Salmi (2015)]. For instance, in Malaysia the Ministry of Higher Education combined the National Accreditation Board, which had jurisdiction over private institutions, with the Quality Assurance Department, which oversaw public institutions, into a single Quality Assurance Agency covering both public and private higher education institutions. This was seen as a measure to level the playing field between the public and private sectors. In 2012, Ireland merged the Further Education and Training Awards Council, the Higher Education and Training Awards Council, the National Qualifications Authority of Ireland, and the functions of the Irish Universities Quality Board, into a single entity: Quality and Qualifications Ireland (QQI). Austria in 2014 established a new entity, the Agency for Quality Assurance and Accreditation Austria (QA Austria), which combined the two previously separate quality assurance entities for universities and polytechnics.

The government could also link quality assurance with the funding of public universities. This would provide an incentive for the universities to undertake and act on the findings of quality assurance reviews. Such linkages between quality assurance and the mechanisms for university financing are seen in several countries. In the Netherlands, universities in which students complete their degrees in time are rewarded. In countries such as Austria, Chile and Spain universities enter into contracts with the government to fulfill specific national objectives, including quality improvement, and receive additional funds for good performance. The U.S.A. has over thirty states where universities have performance-based contracts with the state governments. The main objective of these contracts is to increase the proportion of students who complete high quality degree programs.

12. Internationalization of Higher Education

Internationalization is one of the most significant developments in higher education systems in modern times. There are large and rising flows of students across borders for university education. Countries with internationally reputed universities, such as Australia, the U.K. and the U.S.A., receive considerable numbers of foreign students. Overseas higher education students are a substantial source of income for many universities in these countries, including Australia and the U.K. In fact, countries such as Australia and Malaysia explicitly seek to attract foreign students as sources of revenue. Universities in the developed world are also setting up satellite campuses overseas to expand their enrollment and earnings. In addition, partner higher education institutions in different countries are now combining to establish institutions in either one of the countries or in a third country. The internationalization of higher education is consistent with Dr. Corea's vision of a new international economic order which benefits both developed and developing countries [see Sanderatne (2014) for a recent discussion of Dr. Corea's vision for a New International Economic Order].

The broadening of higher education opportunities overseas is a positive benefit at the individual level. If these students return to Sri Lanka after graduation and enter the labor market, the knowledge and skills brought can benefit the economy. In addition, if students during their studies overseas acquire political and cultural attitudes that are favorable towards a multi-ethnic and multi-religious democracy, or greater gender sensitivity, this would be a positive social benefit. However, if students migrate after graduation, and large sums of resources are spent on overseas higher education, there is a loss to the country. Against this, though, remittance flows from well-educated individuals living overseas can make an important contribution to the economy. In addition, nationals living overseas may engage in industrial and commercial collaboration with domestic industries and firms. The knowledge, technology and capital provided by such individuals can be a substantial source of benefit to the country.

The global mobility of academic staff is an important aspect of internationalization. Universities and research institutions in developed countries are increasingly acquiring international staff. In some cases, the overseas staff members commence as graduate students in foreign universities and then continue onto academic and research jobs overseas. In other cases, academics from one country, usually a poorer nation, move into academic and research jobs in richer countries. For countries such as Sri Lanka, the emigration of academics counts as brain drain and an economic loss. However, to the extent that the overseas academics remit income or contribute their knowledge to local academic, industry or services, there would be economic benefits.

International collaboration in research is a rapidly growing phenomenon world-wide. The availability of modern communications technology has greatly facilitated collaboration among universities and research institutions located in different countries, and even across continents. As a result, cross-border academic teams are increasingly engaged in research, development and innovation activities.

The internationalization of research is a clear benefit to developing countries such as Sri Lanka. University academics and researchers are able to access resources, especially expensive equipment and technology, and keep abreast of evolving global knowledge in their disciplines, in ways that would not be possible without international collaboration and the use of modern communications technology.

International quality research and development centers could become magnets for foreign investment. Overseas industries and firms may source Sri Lankan universities for research and development activities, if the country has the intellectual capital and an adequate supporting institutional environment. Such research and development services may be undertaken singly within a university or in collaboration with other national or foreign universities and research centers.

13. Sri Lanka As a Hub for International Students

The internationalization of higher education provides an opportunity for Sri Lanka to attract foreign students and contribute to economic growth. Foreign students would increase the incomes of domestic higher education institutions. The presence of foreign students on campuses would also benefit Sri Lankan students, as it would broaden their range of cultural contacts and be socially enriching. However, given that the demand for university places in Sri Lanka greatly exceeds the supply, opening public universities to foreign students beyond a small percentage would be highly contentious. Creating an enabling environment for private higher education institutions which cater for both domestic and foreign students could, however, be extremely useful. High quality Sri Lankan private higher education institutions may be able to attract students from other developing countries, including neighbors from South Asia. Such a strategy, if successful, would be an important source of income for the country. There are a number of initiatives that the government could implement to promote Sri Lanka as a hub for international students [Fielden *et al* (2011)].

The Ministry of Higher Education and Highways could establish a dedicated division to implement policies that promote Sri Lanka as a higher education hub. This division would be responsible for activities such as:

- Commissioning market research among potential students on the image of the country compared to competitor countries;
- Identifying the most promising overseas markets;
- Devising strategies for the recruitment of full-time undergraduate and postgraduate students;
- Creating a brand for Sri Lanka as an international student hub;
- Producing promotional and public relations material to stimulate interest overseas;
- Training diplomatic staff in High Commissions and Embassies overseas to promote Sri Lankan higher education institutions;
- Developing partnerships with overseas recruitment agents;

- Establishing recruitment offices overseas in major target countries;
- Developing relationships with tourism promotion agencies;
- Promoting Sri Lanka as a major destination for international academic conferences;
- Conducting research into pricing, competitive behavior and student satisfaction.

The overall supporting environment for foreign students needs to be strengthened.

The country has already made enormous progress in making Sri Lanka a tourism-friendly visa environment. Student-friendly immigration policies need to be instituted to enable foreign students to live in Sri Lanka for extended periods of time. These could be supported by Codes of Good Practice for international students which could be a requirement for accreditation of higher education institutions seeking to attract overseas students. The Ministry of Higher Education and Highways also needs to work with institutions such as the Board of Investment to implement policies that attract foreign higher education providers, recognizing that there can be long lead times for such projects to break even. An example of how Malaysia is seeking to become a hub for international students is presented in Box 5 below.

Box 5: Malaysia as an International Hub for Students

Malaysia has an innovative and effective long-term strategy to attract foreign students. The country commenced as a center for overseas universities to enter into twinning arrangements with local universities in the mid-1990s. Credit transfer programs with foreign universities were developed subsequently. Over time, Malaysia has become a center for overseas universities to set up branch campuses. The number of international students has increased from about 70,000 in 2008 to around 150,000 in 2014. Currently Malaysia facilitates foreign students to enter the country for higher education through the Malaysian Education Promotion Council. This is a non-stop centre which provides information on the Malaysian education system and other relevant details. The Council provides assistance in a range of areas, including information on government-approved universities and colleges; entry requirements for the various programs; application for entrance into universities admission timetables; financial aid and scholarships; guidance on admission tests, applications for visas; health requirements and procedures; and pre-departure information.

The Educity in Iskandar Malaysia is a new multi-dimensional economic free trade zone neighboring Singapore. The objective of Educity is to provide high-quality education and to produce a highly skilled workforce for foreign companies in the commercial zone of Iskandar. Several overseas universities have opened branch campuses. These include the University of Southampton, Newcastle University, Netherlands Maritime Institute of Technology and the University of Reading. These support a range of intellectual service industries such as tourism and leisure, health care and wellness, and the creative arts.

Kuala Lumpur Education City is another innovative education project combining commercial and residential operations with branch campuses of foreign universities and local higher education institutions. The Government of Malaysia is seeking greater penetration of large regional markets for higher education such as China, Indonesia and India. The objective is to establish Malaysia as a regional center of excellence and the central hub for a network of international higher education institutions, companies and services.

Source: Fielden *et al* (2011).

14. Financing Higher Education: Options and Choices

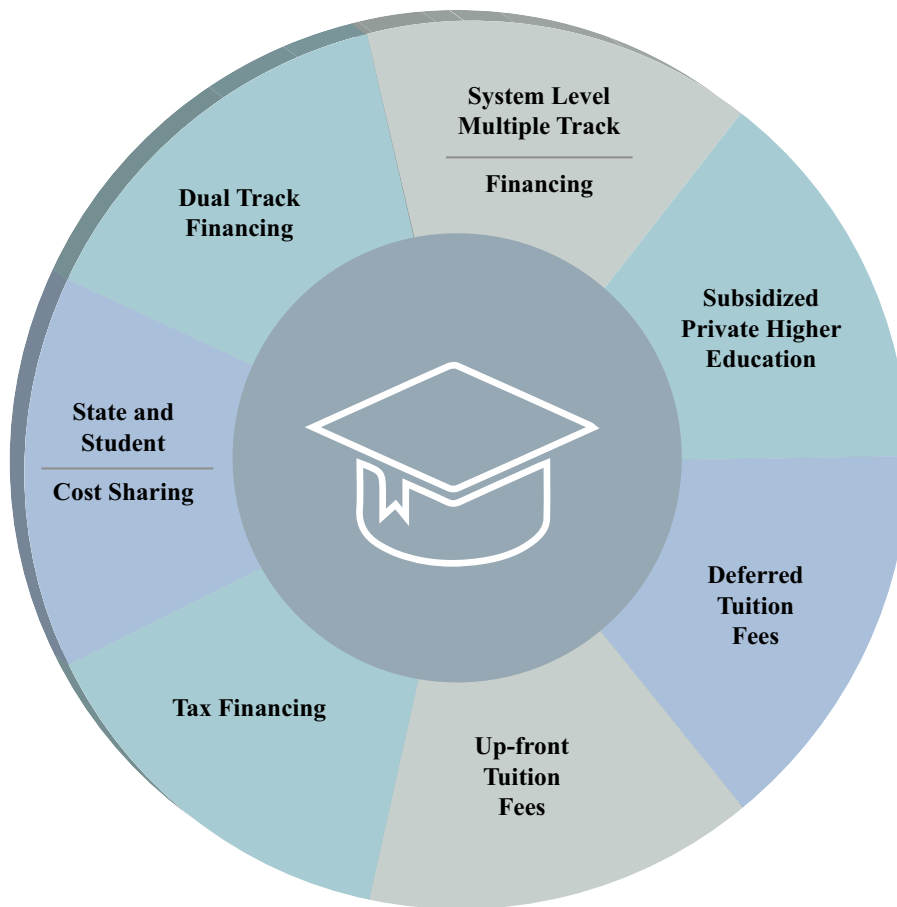
Higher education systems are financed through a variety of models in the modern world. A graphical typology of these models is presented in Figure 7 and described below.

Model one: tax financing. Higher education institutions are financed solely or predominantly through tax revenue. In this model, public higher education institutions provide degree programs free of tuition fees to students. In some variations of this model universities levy earmarked fees, such as registration charges and examination fees, and/or for board and lodging in university hostels, but provide free tuition. This is the predominant model followed for undergraduate degree programs in Sri Lankan public universities. The model is commonly found in countries of continental Western Europe and in Scandinavia. It was also followed in the U.K. for much of the second half of the twentieth century, and influenced the university system in Sri Lanka.

Model two: cost sharing between the government and students. In this model, students pay fees: but the fees are less than the full cost of their education. The government meets the difference through a grant to the public universities. The degree of cost sharing varies among countries, and even within countries. This is the predominant model in the state higher education systems of the U.S.A. Students enrolling in state universities in their home states receive a subsidy, with the degree of subsidy varying from state to state. Other countries where the government and students share the costs of attending public universities through a subsidy include the U.K, India and Nepal. The Open University of Sri Lanka follows this model, with a share of expenditures financed through student fees.

Model three: dual track financing. In this model there are two sets of positions available in public universities. One set of seats is available free of tuition fees. The second set of seats is available for students who have the minimum qualifications for entry, but have insufficient marks to gain a free place and can pay a fee. This model exists in several former communist countries, such as China, the Czech Republic, Hungary, Poland and Russia. It is a radical difference to the model that existed in these countries during their communist period, when all university seats were tuition free for students.

Figure 7: Models of Higher Education Financing



Model four: a combination of free and fee-levying higher education institutions and programs at the system level. In this model certain public higher education institutions and programs offer positions to students free of tuition fees, while other public higher education institutions and programs charge fees. The latter set of institutions and programs typically offer more market-oriented degrees and programs whose graduates have excellent employment prospects. This model is followed in countries such as Mexico, Nigeria and China. Sri Lanka follows this model for postgraduate education, where some postgraduate and research degrees are offered free, while other postgraduate and research degrees charge fees. In addition, Sri Lanka has public higher education institutions which offer fee levying higher education programs, such as Sri Lanka Institute of Information Technology (SLIIT) and National Institute of Business Management (NIBM).

Model five: subsidized private higher education. In this model the government provides students subsidies, typically as vouchers, stipends, or scholarships, to attend private higher education institutions. Alternatively, the government may provide direct financial support to private higher education institutions, usually as capital grants or grants for operational and maintenance expenditure, up to a designated

number of students. Many states in the U.S.A. follow this model which is also known as demand-side financing (e.g., the State of Colorado – where it is associated with a performance-based allocation mechanism), as well as countries as diverse and varied as Chile and Poland.

Model six: the use of deferred tuition fees, where students meet the cost of their higher education after they have completed their studies and entered employment. Several countries, including Australia, New Zealand, the U.K., and the U.S.A, utilize this model of higher education financing. However, the model can be difficult to adopt in developing countries where students do not have a culture of repayment, and it is hard to track graduates to enforce cost recovery. In addition, moving from a tuition free higher education system to a deferred fee model can be politically contentious, as in the case of the U.K. when this shift was made.

Model seven: the payment of upfront tuition fees to higher education institutions. A large number of countries, such as Australia, China, England, the Netherlands, New Zealand, South Africa, the U.S.A. and Vietnam utilize this model. This model provides universities substantial autonomy, including the ability to appoint staff at the discretion of the university and to set faculty salaries. It also provides considerable flexibility in terms of introducing new degree programs and courses. It is, of course, the principal model used by private higher education institutions, and provides the private sector the flexibility to react quickly to evolving conditions in the market. However, in the context of public universities that historically provided tuition-free education, the introduction of fees can be highly controversial. It also has the disadvantage of making higher education less accessible to poor students.

There are a large variety of models in the modern world. Further, there are different models used even within one country [Aturupane (2012)]. Sri Lanka obviously should develop the best model for itself, depending on the country's higher education policy objectives, and the economic and political context of higher education reform and development. The chief reason for the higher education models that are not fully tax financed, but where some type of cost sharing exists, is the fact that the tax financed model is extremely expensive on a per student basis. When the demand for higher education increases and the cost of improving quality and relevance rises even wealthy countries find it difficult to meet the needs of the higher education sector solely through tax financing. This has been seen in recent times in many developed countries, including Australia, Canada, and the U.K., as well as former communist countries such as China and Russia. Ultimately, Sri Lankan policy makers may need to use a combination of these models to increase investment in higher education. If Sri Lankan policy makers explore cost sharing options in the future, however, it is extremely important that intelligent students from poor households should be provided with financial assistance to access higher education.

15. Performance-Based Funding

Performance-based funding of higher education systems has become popular in OECD countries. In the U.S.A., more than half the states use performance-based funding for their state higher education systems [Dougherty *et al* (2014)]. The objective of performance-based funding is to improve the performance of higher education institutions in line with national objectives. Two types of performance-based funding: (a) PF 1.0 programs where the state provides a bonus over and above the normal grant for achieving certain specific outcomes; and (b) PF 2.0 programs where performance-based funding is integrated into the overall funds provided by the state. The State of Tennessee introduced a PF 1.0 program in 1979, the first in the U.S.A. The State of Ohio introduced PF 1.0 programs in 1995 and 1997. The State of Indiana introduced a PF 1.0 program in 2007. Subsequently, Ohio and Indiana also introduced PF 2.0 programs in 2007, followed by Tennessee in 2010.

Performance-based funding instruments are based on the economic and political science discourse on principal-agent theory, and organizational learning and behavior. There are four broad types of performance-based funding instruments.

- provision of financial incentives for performance;
- communication of national higher education goals to university officials and academics;
- provision of information to higher education institutions on their outcomes, particularly in relation to other higher education institutions with whom they identify as peers or rivals; and
- capacity building of higher education institutions to improve performance through organizational learning and behavioral change.

Each type of instrument has strengths and limitations. Also, these are not mutually exclusive but can be used as complementary policy initiatives.

Performance-based funding can also have unintended negative consequences [Reddy *et al* 2014]. For instance, it can focus attention narrowly on the performance indicators, to the neglect or detriment of other important aspects and features of university teaching, research, and community services. It is important, in consequence, that performance-based funding mechanisms should be carefully and appropriately designed, and higher education institutions assisted to achieve the broad range of outcomes that are important for them.

16. Higher Education and Culture, Politics and Society

Higher education institutions, particularly universities, are of vital importance for the cultural, political and social life of a country. Universities strongly influence the world-views of individuals and the value systems of societies. In consequence, they can play a vital role in creating the enlightened citizens needed

for modern participatory democracy. This aspect of higher education is especially important for countries such as Sri Lanka, which have experienced increasingly authoritarian rule. The arts, humanities and social sciences have a key role to play in developing the values, attitudes and behavior required for ethical social intercourse and civilized political behavior. Graduates and academics in the sciences, medicine and engineering, too, need to contribute to the promotion of good citizenship and civic values and behavior.

The higher education sector should lead in the creation of a favorable environment for a peaceful, multi-ethnic, multi-religious and multi-cultural Sri Lanka. One of the most important challenges facing Sri Lanka is to build a society in which individuals from different ethnic and religious groups can live and interact together; in peace and with trust and dignity; and in all areas of the country. The universities can contribute to the creation of such a society through a variety of avenues. First, the content of academic programs and research activities, especially in the arts, humanities, and social sciences, can clarify, expound and highlight the positive characteristics of multi-ethnic and multi-religious societies, and the requirements for respect for diversity and cohesiveness in such societies. Second, all the higher education institutions contain a rich combination of ethnic and religious groups among the students and staff. This creates a highly favorable environment for collaboration and cooperation among the different ethnic and religious groups. Third, universities engage in intellectual, cultural, and sporting activities among each other. This enables students of different ethnic and religious communities from different parts of the country to interact and engage in activities together. Fourth, universities provide a climate for collaborative research among academic staff from different religious and ethnic groups.

The higher education sector needs to play a prominent role in the creation and promotion of the enlightened citizens needed for a well-functioning democracy. It is vitally important to expand and develop a citizenry that values and rewards good character and ethical behavior in political leaders, and despises and punishes falsehoods, violence, and dishonesty. Universities through their teaching, research and advocacy activities need to enhance and strengthen the values and norms that are at the heart of such high-performing political democracies.

17. Conclusion

The preceding analysis outlines a deep and wide-ranging agenda for the development of higher education in Sri Lanka. The higher education sector can play a leading role in the economic, cultural and social transformation of the country. There are several dimensions of higher education development, and Sri Lankan higher education institutions need to advance swiftly and over a broad front. The presence of a government committed to developing education provides an exceptional opportunity for the higher education community.

In the spirit of the life and work of Dr. Gamani Corea, the role of higher education institutions should transcend national borders and continental boundaries. Universities are the crown jewels of a nation's education system. They should be able to offer services to society, firms, researchers, and students around the globe. They should also be able to attract knowledge, technology, and investments from across the five oceans and the seven continents. This would enable Sri Lankan higher education institutions to realize Dr. Corea's vision of a world where North and South interact with, and relate to each other, on terms of parity and to their mutual benefit.

References

- Altbach, Philip. (2015). "Massification and the Global Knowledge Economy". *International Higher Education*, No: 80, pp 4-5.
- Aturupane, Harsha. (2012). "Economic Benefits and Options for Financing University Education in Sri Lanka". *Sri Lanka Journal of Advanced Social Studies*, Volume 2, No. 1.
- Aturupane, Harsha. (2015). "Accelerating Education Development for Economic Prosperity and Social Well-Being". Paper presented at the *Annual Conference, Sri Lanka Economic Association, Colombo, Sri Lanka, 2015*.
- Aturupane, Harsha, Yevgeniya Savchenko, Mari Shojo and Kurt Larsen. (2014). *Sri Lanka: Investment in Human Capital*. SASHD Discussion Paper Series, 69, World Bank South Asia Human Development Unit, Washington D.C., U.S.A.
- Corea, Gamani. (2008). *My Memoirs*. Colombo, Sri Lanka.
- Dougherty, Kevin, Sosanya Jones, Hana Lahr, Rebecca Natow, Lara Pheatt and Vikash Reddy. (2014). *Implementing Performance Funding in Three Leading States: Instruments, Outcomes, Obstacles, and Unintended Impacts*. Working Paper Number 74, Community College Research Center, Teachers College, Columbia University. New York, U.S.A.
- Fielden, John, Jane Knight, Harsha Aturupane and Benoit Millot. (2011). *Sri Lanka as an Education Hub for International Students*. SASHD Discussion Paper Series, 50, The World Bank, South Asia Human Development Unit, Washington D.C., U.S.A.
- Guerra, Nancy, Kathryn Modecki and Wendy Cunningham. (2014). *Developing Social- Emotional Skills for the Labor Market: The Practice Model*. Policy Research Working Paper 7123, The World Bank, Washington D.C., U.S.A.
- Guimon, Jose. (2013). *Promoting University-Industry Collaboration in Developing Countries*. Policy Brief, The Innovation Policy Platform, The World Bank, Washington D.C., U.S.A.
- Gunatilleke, Godfrey. (2015). "A Vision for Sri Lanka 2025 and 2035: Pre-Requisites for Very High Human Development". Paper presented at the *Gamani Corea Foundation – Marga Lecture Series*, Colombo, Sri Lanka.
- Mikhail, Samih. (2008). *The Alternative Tertiary Education Sector: More Than Non-University Education*. Education Working Paper Series, HDNED, the World Bank, Washington D.C., U.S.A.
- Millot, Benoit. (2014). "Top Universities or Top Higher Education Systems". *International Higher Education*, No. 75, pp 7-8.

Millot, Benoit. (2015). “International rankings: Universities vs. Higher Education Systems”. *International Journal of Education Development*, 40(2), pp 156-165.

Montenegro, Claudio and Harry Patrinos. (2014). *Comparable Estimates of Returns to Schooling around the World*. Policy Research Working Paper No. 7020, The World Bank, Washington D.C., U.S.A.

Perkmann, M. and K. Walsh. (2007). “University-Industry Relationships and Open Innovation: Towards a Research Agenda”. *International Journal of Management Reviews*, Volume 9, Number 4.

Reddy, Vikash, Hana Lahr, Kevin Dougherty, Sosanya Jones, Rebecca Natow, and Lara Pheatt. (2014). *Policy Instruments in Service of Performance Funding: A Study of Performance Funding in Three States*. Working Paper Number 75, Community College Research Center, Teachers College, Columbia University, New York, U.S.A.

Salmi, Jamil. (2015). *Is Big Brother Watching You? The Evolving Role of the State in Regulating and Conducting Quality Assurance*. CIGQ Publication Series, Council for Higher Education Accreditation, U.S.A.

Sanderatne, Nimal. (2014). “Gamani Corea’s Thinking and Contribution towards a New International Economic Order”, in Khor, Martin, Vincente Yu III and Adriano Timossi (editors), *A Tribute to Gamani Corea: His life, work and legacy*. pp 137-146. South Centre, Geneva, Switzerland.

South Centre. (2014). *A Tribute to Gamani Corea: His life, work and legacy*. South Centre, Geneva, Switzerland.

Sursock, Andree. (2015). “Trends 2015: Learning and Teaching in European Universities”. European University Association, Brussels, Belgium.

World Bank (2009). “The Towers of Learning: Performance, Peril and Promise of Higher Education in Sri Lanka”. The World Bank, Washington D.C., U.S.A. and Colombo, Sri Lanka.

World Bank (2011). “Transforming School Education in Sri Lanka: from Cut Stones to Polished Jewels”. The World Bank, Washington D.C., U.S.A. and Colombo, Sri Lanka.