



Higher Education in a World Changed Utterly Doing More with Less

13 – 15 September 2010
Paris, France

Discussion Paper

A selection of papers for the IMHE 2010 General Conference will be published in the OECD's Higher Education Management and Policy Journal. The opinions expressed and arguments employed herein are those of the author) and do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

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HIGHER EDUCATION IN A WORLD CHANGED UTTERLY: DOING MORE WITH LESS

OECD/IMHE Conference, Paris, September 2010

DRAFT DISCUSSION paper

Mary-Louise Kearney and Richard Yelland¹

¹ The authors welcome your comments. Mary-Louise Kearney, consultant to the IMHE programme: mary-louise.kearney@oecd.org; Richard Yelland, Head of the IMHE programme: richard.yelland@oecd.org

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EXECUTIVE SUMMARY

To note: The draft Discussion Paper sections link to the plenary panels debates

Introduction

This paper deals with the specific context of the 2010 OECD/IMHE General Conference and the need to consider both responses for enhanced productivity given the lingering nature of the economic crisis and the longer-term goals of tertiary education (*inter alia*, sustainable growth, socially responsible citizens, enhanced co-operation amongst the global community). Reference is made to the 2008 OECD Review entitled *Tertiary Education in the Knowledge Society* which offers a comprehensive framework to countries wishing to modernize their systems.

Economic Realities: Challenges for the Tertiary Education Community

The situation in 2010 is reviewed to assess the socio-economic impact of the global crisis. The IMHE General Conference will seek to compile and analyse a range of effective policies and coping strategies used by governments and by tertiary education institutions to weather the turbulent climate. Immediate challenges such as meeting increased demand, fluctuating research funding and a volatile international higher education market need to be offset by the longer-term vision of the sector where ever stronger alliances with social stakeholders will be essential.

Economic Recovery, Innovation and IT: The Role of Tertiary Education in Building a Sustainable Future

Based on the OECD *Education at a Glance* indicators, tertiary education trends are tabled with a view to reiterating the importance of investment in this sector to help economic recovery. The challenges involved in building knowledge systems are discussed including the special difficulties faced by emerging and low-income economies to establish sound R&D and innovation capacity. Investing in human capital and the complexity of the labour market are evoked along with the benefits for teaching, learning and research offered by IT which has still to reach its optimal potential.

Social Engagement and Tertiary Education: New Imperatives

Social engagement has moved beyond institutional outreach to address the challenges of the 21st century. Engagement is now a mindset ensuring that tertiary education can meet its multiple responsibilities: equitable globalisation, debate on the purposes and priorities of the sector, creating a culture of learning, directing research and teaching to sustainable development and strengthening links with social partners are now an inescapable obligation for institutions. As the current crisis is global, attention should be paid to the special plight of Africa and to supporting the renewal of its vulnerable tertiary education system.

Perspectives for Tertiary Education in a post-crisis world: issues for the OECD and a wider public

The impact of the recession and a difficult economic climate could continue for another decade. Many OECD countries are being forced to revise public policies in the face of reduced revenue. Likely trends in key areas (governance, funding, the measurement of quality and impact, research and innovation and international provision) will be proposed. The legacy of the 2010 OECD IMHE General Conference will reside in the wealth of effective responses provided by a modernized tertiary education sector to resolving current socio-economic questions.

I. INTRODUCTION

“Fostering a job-rich recovery must be the top priority for our governments. It is by learning from each other, by exchanging experiences, by co-ordinating our policies and by putting our minds together to devise innovative policy solutions that we are going to win this battle.”

Remarks by Angel Gurría, OECD Secretary-General at the meeting of the G20 Employment and Labour Ministers, Washington D.C., 20 April 2010

The biennial IMHE General Conference, entitled *Higher Education in a World Changed Utterly: Doing More with Less*, will take place at the OECD Conference Centre in Paris from 13 to 15 September 2010.

Against the background of the most synchronised recession in OECD countries in over half a century, the conference will focus on how the higher education sector – governments, institutions and individuals – can help contribute to sustainable recovery. Capitalising on the OECD’s highly respected evidence base and drawing on analyses and opinions from some of the world’s leading experts, the conference will identify ways to achieve higher quality outcomes at a time of increased demand and fewer resources. Innovative approaches to meeting the challenges of equity and efficiency will be examined. Key topics will include governance, resources, technology, relevance and sustainability. The main goal of the conference is to identify longer-term trends within the global context. National policies will be analysed, institutional case-studies will be presented, and the latest research from OECD and elsewhere will be featured.

Throughout the lead-up phase, there have been strong grounds for focusing the 2010 debate on the crucial “productivity” theme. OECD members and their counterparts in other regions are battling to stave off the nightmares of unstable economies and rising unemployment. This focus could offer a critical window of opportunity to showcase the 2010 IMHE General Conference as part of national solutions for recovery. Labour market linkages figure as a key area of the 2006-08 tertiary education review which resulted in the publication entitled *Tertiary Education for the Knowledge Society* (OECD, 2008g, Table D.7). Such an approach would enhance the image of the modern academy as a vital force in preparing human capital for an ever more complex and volatile workplace.

Yet, to concentrate on short-term productivity would risk omitting discussion about important longer term goals (*inter alia*, sustainable growth, socially responsible citizens, enhanced co-operation amongst the global community). However worrisome the post-recession period may be, ignoring the broader picture would be short-sighted.

This discussion paper is an informal text designed to help spark reflection on the numerous issues to be debated at the 2010 IMHE Conference. Drawing on a wide-range range of international examples, its content is in line with the structure of the agenda. The authors² welcome comments.

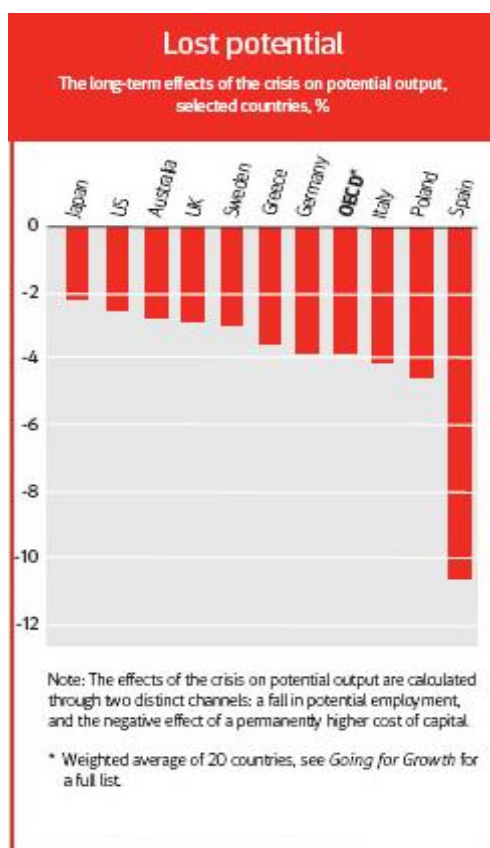
² Mary-Louise.Kearney@oecd.org and Richard.yelland@oecd.org

II. ECONOMIC REALITIES: CHALLENGES FOR THE TERTIARY EDUCATION COMMUNITY

*Background to the Opening Plenary and Panel 1 on 13 September 2010

i) Taking stock in 2010

To what extent has the crisis impacted the tertiary education sector? Is the worst over or are further shock waves yet to come? The OECD, the World Trade Organization and others expect growth patterns to improve from 2011 onwards. Still, economic recovery remains uneven, at best. Indeed the G20 debates hosted by Canada in June 2010, acknowledging that the recession is ongoing, considered that a return to growth will rely heavily on sustainable stimulus measures accompanied by far-reaching financial and banking reforms. Positive results reported in some contexts (e.g. Australia, Brazil, Canada, East Asia and Poland) have contrasted with the acute effects suffered elsewhere (Greece, Iceland, Ireland and Spain). The post-recession world remains alarmingly volatile. Steady governance accompanied by flexible management would seem to be needed by national policy makers, institutional leaders and managers as well as for the academy at large to ensure optimal outcomes for the policies and strategies selected in each country context.



Source: OECD (March 2010), "Lost potential caused by the crisis", *OECD Observer*, No 278, OECD Paris.

The conference title is inspired by the poem of William Butler Yeats, *Easter 1916* which marked irrevocable changes in Irish society. The conference would contend that a world "changed utterly" has

resulted from the current global recession, which started in 2007 and of which the complexities are still unfolding. Post-2010 and of necessity, will the sector move towards confirming the importance of diversified provision to better address the new social and economic dynamics already in play? Some experts already think so. For instance, as reported in the EDU blog of 13 August 2010, Bill Gates believes that on-line universities are the future of education.

The findings of the OECD's 2008 sector review, *Tertiary Education for the Knowledge Society* propose a framework to respond to these salient questions. Comprising 24 countries in its analytical strand and 14 in its country strand, this exercise was a follow up to the meeting of OECD Education Ministers (Athens, Greece, 2006). This meeting reaffirmed the potential of a new framework for tertiary education (described as the "modern academy") which could re-articulate objectives and functions to better drive economic growth and foster social cohesion (OECD, 2006). Consequently, crucial trends and practices have recently been widely documented and analysed for their response to this challenge (OECD, 2008f and 2008g).

The post-2010 scenario already poses certain thorny questions:

- Can the exact damage of the crisis be gauged?
- What positive and negative socio-economic impacts are visible to date?
- Which higher/tertiary education systems and institutions have found resourceful and innovative ways to face these new challenges?
- And which ones are battling to survive the crisis because their chosen policies and strategies may have come too late or lack optimal effectiveness?
- Are certain policy directions favoured to address the challenges?

These questions are of concern in all OECD countries and beyond. The survival tactics that have been adopted will constitute a valuable resource for consultation and eventual adaptation because the crisis is global and its impact significant. These questions also serve to highlight the priority accorded to tertiary education worldwide, from the BRIC countries (Brazil, Russia, India and China) to economies of varying scale (*inter alia*, Chile, Trinidad and Tobago, Tunisia, Kenya, Tanzania, Jordan, the United Arab Emirates, Singapore and Malaysia), many of which are already modernising their systems.

Even the most populous countries that are facing huge social development challenges including basic education (Nigeria, Pakistan, Egypt and Indonesia) are investing in tertiary education in an effort to benefit from the knowledge economy. This objective requires *both* high-level research capacity (assured by a robust university sector) *and* a highly skilled workforce (which can be trained in more diversified institutions and delivery modes).

A truly global process has been underway over the past decade with tertiary education institutions at the centre of this dynamic and with general consensus amongst policy makers and academia on the directions to follow. Countries are shaping policy to take account of the global tertiary education agenda comprising 13 areas: globalisation, massification, governance, equity, access and diversification, internationalisation and student mobility, teaching, learning and curriculum, quality assurance, financing, public/private provision, the academic profession, research, future CIT developments and social engagement. (Source: Altbach et al 2009)

ii) The impact of economic realities

In August 2009, The Economist reported that: “*The world economy has stopped shrinking. That’s the end of the good news.*” A year later, the crisis is not yet over and recovery is not fully confirmed. As the Greek economic drama was playing out in May 2010, there were fears that this crisis could spread. A brief overview of events since 2008 recalls the severe degree of economic shock registered around the globe:

- near implosion of the financial sector causing heated debate amongst leading central bankers as to the best policies to employ to assure adequate economic stimulus of the economy;
- national economic collapse (e.g. Iceland, the International Monetary Fund’s double bailout of Latvia) and serious damage to key industries (e.g. the automobile industry in the US, tourism in Spain, property development in Ireland, financial services in Switzerland and Luxembourg, low oil prices in Mexico) as well as in the global market (e.g. the overall decline in consumer spending, falling or volatile prices for commodities vital to developing economies, etc.), thus launching a call for global financial reform and for a new commitment to business ethics demonstrating social responsibility;
- broadly fluctuating movements in employment as diverse sectors are impacted economically, which raises the eventual notion of a jobless recovery. For example, South Africa lost some 500 000 jobs in the first half of 2009; in the first quarter of 2010, unemployment stood at 20% in Spain and the Euro zone 10 million people were seeking work. Over the 2009-2010 winter, the United States registered an unemployment rate of just under the 10%, although spring brought more positive job creation figures. Youth unemployment averaged 18.8% in OECD countries in 2009 forcing governments to propose urgent training initiatives such as the *Livret Vert* project in France;
- controversial debate among economic experts has begun on how to handle the inevitable results of continued stimulus packages and financial bailouts (usually higher taxes or rising inflation) and mitigate the negative impact for citizens already battered by the crisis;
- progress in important areas of social policy reform has slowed as nations wrestle with high deficits (e.g. United Kingdom and France) and sovereign debt forcing austerity measures (i.e. frozen budgets) to avoid rigour (i.e. higher taxes);
- growing perplexity in OECD countries as other economies seem to deal with the situation with impressive dynamism, thus recalling the fast-changing world economic order (*inter alia*, the growing role of BRIC countries and their massive and methodical investment in human capital via tertiary education in China and Brazil – a trend emulated elsewhere, such as Singapore and Qatar and the United Arab Emirates).

The lingering recession (branded the worst since the 1930s) contrasts with significant growth in Asia (e.g. Japan and Singapore) along with improved performances recently in core OECD economies, like France and Germany, which have helped boost optimism. Overall, many economies have shrunk over the past year, although recent quarterly performance has shown encouraging signs. The recession could well have engendered a feeling of deep-seated malaise with the true social dividend of globalisation in the pre-recession era. What is the legacy left to the coming generation in with regard to the environment and the labour market? Has the earlier period of continuous growth bred a culture of hedonism and greed (or, at least, of chronic acquisitiveness)? Can necessary debate on long-term social issues and their global economic aspects (such as ageing populations and immigration dilemmas) be delayed indefinitely without dangerous consequences? Has the “business-model” approach run its course, requiring a reappraisal of the social and cultural factors shaping human development?

iii) Implications for tertiary education

How is tertiary education holding up in this difficult context? Countries and institutions will have an exchange of views at the 2010 IMHE General Conference on their response strategies and a dual perspective may well underpin their different experiences:

- i) in the immediate, some trends have required urgent attention (e.g. rising demand at undergraduate and graduate levels as students elect to enrol or stay in school, fluctuating research funding, volatility in the international higher education market);
- ii) the long-term challenges for tertiary education will need ever stronger partnerships amongst concerned stakeholders. These alliances could set the future agenda for the next phase of the Knowledge Society and highlight the new imperatives for social engagement within the sector.

III. ECONOMIC RECOVERY, INNOVATION AND IT: THE ROLE OF TERTIARY EDUCATION IN BUILDING A SUSTAINABLE FUTURE

**Background to Panel II on 14 September 2010*

i) Investing in Tertiary Education for economic recovery

Education at a Glance (OECD 2009a) noted that “world attention is focused on the financial crisis and its social fall-out”. Although turmoil continues in 2010, investing in tertiary education for individuals, countries and societies remains important and the benefits of this are well known:

- throughout OECD countries, the net public return from investment in tertiary education is estimated to exceed US\$5000 per student (OECD 2009a, Indicator A8);
- the key role played by skilled human capital in the knowledge society/economy strengthens the case for further private investment in this area (OECD 2009a, Indicator A6);
- educational attainment links to long-term social outcomes such as better health, political understanding and interpersonal trust, thus justifying public spending for tertiary education (OECD 2009a, Indicator A9).

Nevertheless, the sector faces an uncertain socio-economic context over the short-term (2010-2015). To take but one example, the United Kingdom may authorise cuts and higher tuition fees after 2011. Possible contextual challenges may include:

- A volatile job market may encourage students to remain in education institutions (whether academic or vocational) and the demand for credentials may link to sectors where employment is more likely to be employment-oriented (e.g. health administration).
- There may be fewer actual work opportunities as employers face crisis-related pressures. In some OECD countries (Australia, Denmark, Iceland, Netherlands and Switzerland), young people spend nearly four years between the ages of 15 and 29 in programmes combining education and employment (OECD 2009a Indicator C3). The partnership between education and employment must be reinforced to help maintain these job opportunities.
- New incentives are needed to encourage those less qualified to enter tertiary education. This group faces deteriorating work prospects in the knowledge society thus posing a risk for social cohesion.
- Maintaining research funding - whether from public or private sources - could be problematic as both sectors battle the effects of the crisis. By way of example, certain Ivy League universities suffered losses to their endowment funds when Wall Street took the brunt of falling markets. As a result, increased emphasis on criteria such as relevance and priority importance could be expected.
- Lifelong learning may become more essential for older adults who are vulnerable to long-term unemployment. Despite exceptions in Australia, New Zealand and the Nordic countries, less than

6% of 30-39 year-olds in OECD countries are enrolled in tertiary education (OECD 2009a Indicator C1). Meeting the specific needs of adult learners should be given greater attention.

- Today, the niche market of “learning for leisure” amongst senior citizens might generate significant revenue.
- Tertiary education may prove difficult to predict due to changing demographic patterns in OECD and other countries. For instance, less demand is expected in Central and Eastern Europe as well as Russia; however enrolment could increase in Ireland, Israel and Spain. This will link to the budgetary challenges faced by the sector.
- The demand for tertiary education is growing rapidly in some areas : in West Africa, where half the population is under 25 years of age; in Asia, which is home to one third of the world’s population; and in highly populated countries such as Brazil, China, Egypt, India, Indonesia, Mexico and Nigeria). Eventually, more graduates will be seeking employment beyond their national borders and regions as part of a more mobile global labour market. This issue will likely present challenges for OECD countries which are the principal destinations for international students (Australia, Canada, France, United Kingdom and United States). For some of these, international tertiary education is already a major source of revenue.

In OECD countries, education expenditure as part of national GNP has been relatively high e.g. 6.1% collectively and over 7% in Denmark, Iceland, Korea and the United States (OECD 2009a Indicator B2). Moreover, in better times, there was a hefty share of total public expenditure in education (e.g. an average of 13.3% in 2006 in some countries with growing economies investing more, i.e. 22% in Mexico).

In the post-crisis era and perhaps to deal with sovereign debt or high deficits, public policy investment in every sector will be severely scrutinised. For example, France has already announced a budget freeze until 2013 and new British coalition government has embarked on a major austerity plan. Education at all levels will be considered a vital component of national recovery strategies but must explicitly demonstrate its benefits in this respect. This might entail: making adjustments within the sector to meet priority needs, emphasising visible contribution to national productivity and growth and achieving these results with fewer (or static) public resources in the short-term.

For tertiary education institutions, this could present challenges to further specialise their mission and profile, to negotiate mergers for better economic viability, and to expand their outreach and alliance strategies as well as their commitment to social engagement at various levels. In short, necessary investment will continue but the criteria involved will be stricter.

ii) Building and understanding knowledge systems

Post-crisis, building a sustainable recovery will concern tertiary education in relation to four critical areas: i) equitable knowledge systems; ii) investing in R & D and national innovation systems; iii) nurturing skilled human capital; and iv) strong communications and information technology (CIT) capacity.

Equitable knowledge systems

With globalisation, knowledge has undergone a profound transformation emerging as the main driver of development. The many aspects of knowledge are all important: production, organisation, management, accessibility, the impact of teaching, learning, training and research, collection and sharing of data, good practices and information. Countries and their populations can benefit from the knowledge dividend when these aspects operate effectively. As a major knowledge provider, tertiary education has been profoundly affected by the speed and dynamism of this process.

As a result of this transformation, countries throughout the world have had to improve their knowledge management capacities. Demand for knowledge continues to rise although the vast differences in the political, socio-economic and cultural contexts determine the effectiveness of national responses. As knowledge-oriented institutions are key actors, countries are hurrying to modernise their tertiary education systems to secure their place in the competitive global environment. These challenges are a priority for OECD and BRIC countries alike. However, this process is particularly daunting for middle and low-income countries, thus increasing the risk of their further marginalisation.

Managing knowledge systems is a complex process involving many strategies and mechanisms. Elements range from traditional upstream aspects such as governance, policies and investment to downstream management of knowledge institutions and workforces with respect for their necessary interaction and adaptation as well as for specific cultural and ethical values.

With knowledge as one specific base for sustainable economic recovery, there are three prominent long-term obligations on the post-crisis recovery agenda: i) capitalising on knowledge (including high-level scientific knowledge in support of development); ii) converting knowledge, in all its forms, into value via applications; and iii) assessing impact and sharing good practices to ensure widespread benefits.

Investing in R & D and national innovation systems

R & D and university research

Developed and progressive countries have achieved development through the benefits accrued from their investment in knowledge. Figures for OECD countries show that investment is a tripartite process comprising R & D, higher education and CIT capacity, although the actual balance amongst these three elements may vary. For instance, the United States supports all three fairly equally, while Greece and Portugal invest less in CIT.

Looking at this issue globally and apart from the major emerging economies, many middle and low-income countries have often failed to invest sufficiently in knowledge. Although their capacities in indigenous knowledge are well-recognised, their scientific and related knowledge systems are often extremely weak. There has been a general reluctance to support research in low-income countries for various reasons. For example, other areas such as basic education and health care require more urgent attention. Moreover, it is frequently suggested that problems will be solved by adapting and using strategies that worked in other contexts. Though there are some success stories, the real underlying issues are not adequately addressed through this method.

Every country needs its own a solid research community which brings important benefits:

- contacts with international research
- provision of local analysis and advice
- identification of relevant research agendas
- critical thinking in higher education
- evidence-based criticism and debate for policy-making
- capacity to train future generations of researchers
- the stimulation of national innovation systems.

Systemic strength comes from the quantity and quality of knowledge generated and its dissemination. In developing countries, national research capacity may be confined mainly to universities (sometimes even to a single institution of higher learning) which must then assume a wide range of complex tasks including fostering a national commitment to research; promoting a culture of enquiry; assuring the acquisition of research skills; developing the capacity to utilise external research and knowledge; participating in the national budget allocated for research; and forging linkages with the international research community.

In middle and low-income countries, well-known factors tend to weaken the chances of building a basis for research:

- the dilution and redirection of possible resourcing for research
- the need to rapidly expand tertiary education to meet increasing demand
- fragmented activity where basic research loses out to contract or project-driven analysis which privileges immediate returns rather than the long-term investment which is essential for sustainable growth.

For all countries, the crisis has meant frequent reference to the familiar catch-words of “relevance” and “utility” but these need to be treated with caution. Relevance is very important but truly useful knowledge can be discovered in many ways. Often great inventions are a spin-off of an ongoing research exercise such as the Internet, derived from the advanced physics research of Tim Berners-Lee while he worked at CERN in Geneva; and the Google search instrument invented by Sergei Brin and Larry Page while they were studying at Stanford University.

Useful (i.e. relevant) knowledge can be the outcome of lengthy research such as:

- patterns of bird migration for determining the sources of avian flu
- mapping geological structures when seeking solutions to store nuclear waste
- the history of world religions to elucidate the understanding of global and ethnic conflicts.

Research has an intrinsic monitoring and regulatory function which can help prevent catastrophic situations. In this regard, climate change analysis in the Pacific helped build an early warning system to prepare for natural disasters. Independent research is also vital such as that undertaken by Professor Nouriel Roubini of New York University who, as early as 2006, reported the impending housing and financial market crisis to the International Monetary Fund (IMF) although this event rocked the world economy two years later.

These perspectives illustrate the inter-connectedness of social development issues and why investment in high-level research must be maintained.

Furthermore, research co-operation should be fostered at all levels. Global research co-operation facilitates the interaction and sharing of benefits of investigation undertaken at regional and national levels. These perspectives gained from specific situations permit wide and varied analysis, thus reaching conclusions based on broadly collected evidence. The advantages of research co-operation have facilitated the emergence of universities which focus on promoting regional and local excellence in collaboration with concerned government, business and community partners. Examples are the Universidade Federal do Rio Grande do Sul in Brazil that has received public funding for sector-specific research often related to energy and advanced technologies; Liverpool John Moores University in the United Kingdom, aiming to be a knowledge hub for growth in the north-east of England; and Waikato University in Hamilton, New Zealand whose Law School specialises in Maori social institutions.

While national research structures are broader than those found in the higher education sector alone, academic research remains a prime source of a country's knowledge base. Over the past decade, most industrialised countries have striven to address the dual challenge of providing greater access to post-secondary education and training and of ensuring adequate investment in high-level research. This duality is proving to be a delicate balancing act which demands visionary policies and a more diversified funding base.

There are continuing challenges for universities which want to improve their research reputations. Today, some 22 of the world's elite 25 research universities are located in the United States. While American higher education deserves full credit for the breadth and resourcing of this sector, this monopoly cannot be expected to meet international research needs. For this reason, support for research universities has become an important priority in OECD countries. The rise in the status of the Shanghai Jiao Tong rankings attests to this situation. Though often viewed as controversial, these and similar instruments attempt to propose criteria that recognizes excellence in academic research.

Social justice would require that middle and low-income countries cannot be allowed to fall behind in the knowledge stakes. Investment in research is increasing in emerging economies with Brazil, China, Singapore and South Africa being pertinent examples. Post-graduate education and training has assumed new importance to underpin this policy approach.

Qatar: Investing in Higher Education and Scientific Research

Qatar leads the Gulf States for spending on higher education and scientific research, investing 2.8% of its GNP in the latter area.

The private sector (banks, companies and philanthropists) is a major partner in this endeavour, supporting scholarships, loans with marginal interest and student mentoring.

Source: Dr El-Kaffas, May 2007 "Higher Education Funding in the Arab States" paper presented at the Seminar of the UNESCO Forum on Higher Education, Research and Knowledge, Rabat, Morocco.

However, the situation of research universities in low-income countries remains bleak and in need of rapid and effective solutions. For example, 80% of PhD graduates in Latin America and the Caribbean are concentrated in four countries: Argentina, Chile, Brazil and Mexico. Even the poorest nations require research capacity to progress and so support for a research university in these contexts is more urgent than ever before. Attaining this goal and maintaining the quality and relevance of these essential institutions requires national commitment and also must remain a major objective for international co-operation in the years ahead.

In 2010, major challenges face the research sector and its environment. Equity, quality, relevance, ownership and international networking lie at the heart of this debate. An ever growing number of countries have given priority to developing their knowledge base through higher education and research, as well as to committing the necessary resources to this end. Success stories are becoming more common in all regions. These are characterised by specific indicators:

- innovative policies in higher education, research and STI
- the intention to improve and profile the necessary infrastructure including universities
- efforts to train, retain and attract highly skilled human capital
- increased levels of investment in research and in higher education.

A clear example of this process is the significant rise in Singapore's research scientists and engineers (RSEs) from 4329 in 1990 to 11 596 in 2004 (*Source: UNESCO Forum Special Initiative Asia Report 2008:89*).

According to Jamil Salmi of the World Bank, the role and contribution of research universities are characterised by top graduates, leading edge research and vigorous technology transfer. Critical aspects are a concentration of talent, abundant resources and favourable governance combined to assure excellence in graduate education and research output (*Source: UNESCO 2008 c*). In contrast, when countries lose their base for academic excellence through outdated policies, neglected institutions, the exodus of their best graduates and inadequate investment in university research, their competitiveness in a global knowledge society will dwindle and finally disappear. For example, an estimated 47% of Ghanaian doctors work outside of their country and 50% of Colombia's science PhDs are abroad. There must be new incentives for professionals to stay in their country and origin and to circumvent the brain drain.

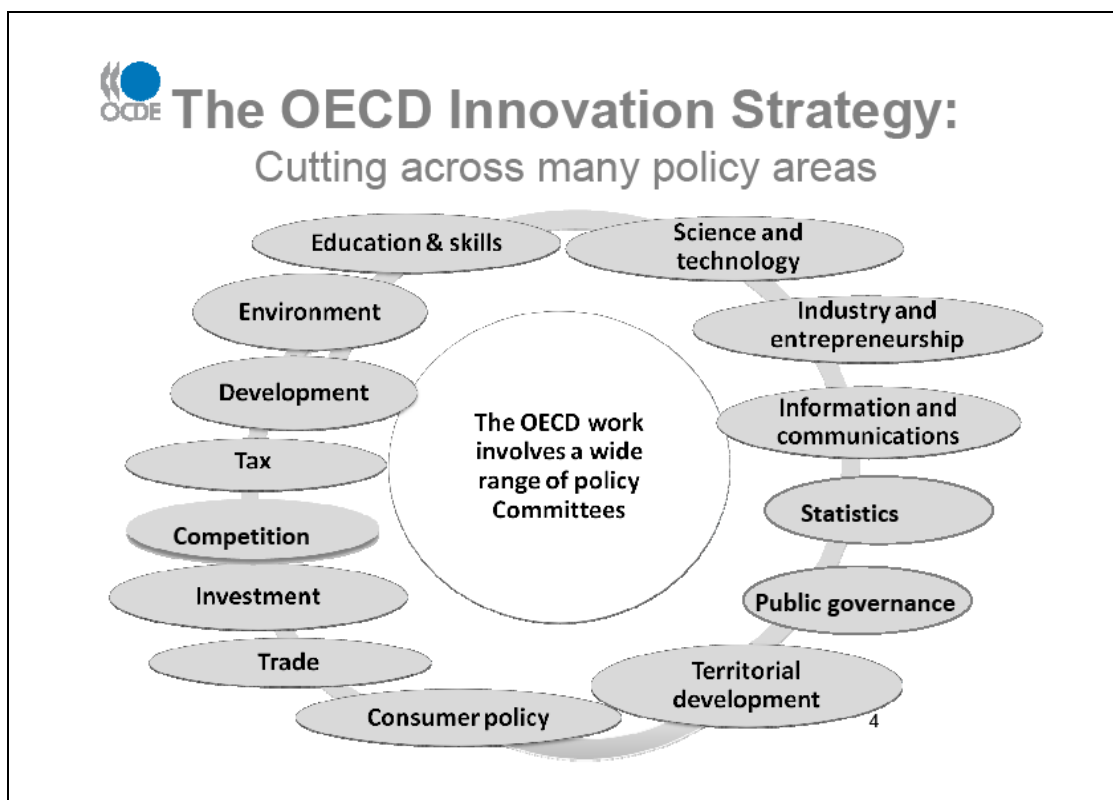
National innovation systems

Innovation systems, which are essential for economic growth, may be regional, national and local in scope and depend on organisations and institutions:

- *organisations* are the formal structures created with an explicit purpose and are thus the principal players involved;
- *institutions* can be the framework of norms, rules, legislation and routines which constitute the defined rules.

Critical activities in these systems include: R & D investment, capacity building, new market products, quality assurance mechanisms, the promotion of entrepreneurship, the networking of markets and institutions, the creation of enabling mechanisms (e.g. IPR and tax laws), incubation facilities, processes

for commercialisation and the assurance of technology transfer. (Source: *Centre for Innovation Research and Competence in the Learning Economy, CIRCLE*, Lund University, Sweden.)



Source: OECD (2010), *Innovation Strategy: Developing an innovation Policy for the 21st Century*, Andrew Wyckoff, OECD / STI, Tokyo.

Countries with robust innovation systems encourage research in various contexts which include universities and a thriving private sector. Over the past decade and to deal with the changing external environment, OECD governments have placed unprecedented emphasis on research as a key driver for national development. This has led to new challenges for research management, including greatly expanded research linkages between universities and industry, commerce and the public sector. Similar action is taking place in other regions. For example, there is the MIT/Tsinghua University arrangement for joint research appointments and laboratories and the accelerated investment in research capacity in the Gulf States (e.g. the Masdar Eco-City project in the United Arab Emirates and Qatar’s allocation of 2.8% of GNP to scientific research); and in Saudi Arabia, there is the new King Abdullah University for Science and Technology (KAUST) that is preparing for a post-oil economy.

Investing in innovation is crucial for a lasting recovery from the current economic ills. The OECD Strategies for Innovation and for Green Growth have been designed to assist governments worldwide in their post-crisis economic plans to boost productivity and growth. Both strategies privilege the role of high-level knowledge generated by cutting-edge research. Consequently, independent and entrepreneurial universities and research institutions which can interact on a global scale are key forces in this dynamic. Thus, research and innovation must remain priorities for all countries to provide for their sustainable future.

Investing in skilled human capital

Economic recovery will certainly need the talents of a skilled national workforce adaptable to the changing labour markets. The economic crisis has cost the United States some 7.4 million jobs with serious loss in the middle-class bracket) and hovered around the 10% mark in 2009. Bright young bankers found themselves unemployed within 24 hours. Skilled blue-collar jobs were lost as firms retrenched and moved production abroad. Much debate was generated as governments sought to avoid the prospect of jobless growth. These anecdotes have important implications for tertiary education and training.

As this system has always been a vital factor in assuring a skilled workforce, it has a vested interest in following labour market trends to adjust and optimise its response as the main supplier of “knowledge workers”. But, many countries now have massified tertiary education systems with an ever broader choice of credentials offered to learners (e.g. the plethora of Masters’ degrees and the MBA market). Skilled human capital will always be essential yet what type of people and credentials are included in this term? Some deeper thinking is needed about the complex issues related to work and tertiary qualifications today.

There are some questions for strategic thinking:

What are the lessons to be drawn from research on employment trends?

Work remains a highly culturally determined domain which differs greatly according to geographical context. Career success depends on multiple factors and talents. Therefore, broadly educated people tend to handle this reality more easily. To help prepare competitive and skilled national workforces, tertiary education now links very closely with employers to exchange viewpoints and understand the needs of the labour market. Graduates (apart from those who study for specific professions) may be disappointed with their work experiences because their expectations and the employment reality do not match. In this regard, career orientation is more than ever a vital service inside institutions.

Moreover, the greatest growing concern is how to avoid a jobless future. According to Richard Florida, of the Rotman School of Management at Toronto University, governments should devote much greater attention and resources to supporting service industries since these employ close to half the workforce.

The US Bureau of Labour Statistics predicts that 15 million new jobs could be created over the coming decade with 50% of these in the lower-skills sector. Sustaining these jobs will need investment and training such as business planning, marketing and communication. The tertiary education sector could play a vital role in the latter aspect. Unless this is done, these jobs will often be transient in nature and the impact on employment could be disastrous. Governments currently ignore service industries compared with their very generous support to the STI and R & D fields. (Source: *Florida 2010*)

What is the value of a degree today?

Beyond the personal benefits of a degree, young people can rightfully expect competent guidance concerning the choice of qualification and its eventual employment prospects. Often they expect to acquire at least a Master’s degree, perhaps two, for employers to be interested. Students considering a doctoral education need to understand the value of this investment for their future career choices.

What types of jobs require tertiary education?

In today’s knowledge economy, tertiary education has become an expectation rather than an exception. However, more research is needed on the range of graduate jobs and the work involved. New

types of work, often linked to technology or to the Green Revolution, are constantly appearing. Some require substantive knowledge of a general nature or of specific domains. Others necessitate kinds of skills which may be innate (e.g. interpersonal skills) or can be gained through specialised training. Work skills are not the same as academic skills although there are certain key linkages such as analytical capacity.

Furthermore, in times of crisis, today's students may opt for pragmatic solutions. A changing paradigm may already be happening. For example, although the United Kingdom's UCAS reports that enrolments have reached a record 660.000 for Autumn 2010, apprenticeships/traineeships in industry and business are oversubscribed by young people who prefer direct entry into the workplace rather than via tertiary studies. (Source: *The Guardian*, 13 August 2010)

Will volatile and mobile job markets become the norm?

In a fast-changing global economy, volatile and mobile job markets are increasingly likely and offer pros and cons to prospective job seekers. Dynamic economies (e.g. China's export boom) need skilled workers and should offer special opportunities for those with entrepreneurial capabilities. Lower labour costs in some countries have led to outsourcing and production transfer (e.g. credit card services and the automobile industry). Public sector employment is experiencing an economic decline. People who are comfortable in multicultural and multilingual contexts are well-equipped for mobile careers and actively seek such openings as they can understand a new work culture very quickly and adapt to its demands.

To what extent should tertiary study be linked to work?

In a recent interview, Hans Wijers, CEO of the industrial giant AksoNobel and a former Dutch Minister for Economic Affairs, claimed that universities still lack competitiveness (Source: *The Financial Times* 26 April 2010). Despite this emphasis on increased productivity, some believe that academic tertiary study should be propelled primarily by interest and equip the learner with a broad education, not for a specific job. This view has much support from a large section of the student population who believe that intellectual curiosity should be satisfied as part of tertiary education and that the employment challenge can be addressed at another stage.

How can demand for work-related credentials be met?

The demand for work-related credentials has accelerated with changing labour market trends. People are now likely to develop "portfolio careers" in terms of the number of job changes and types of work that they will undertake during their years of employment. Training and often re-training will be required and the range of learner profiles will tend to be older. Only diversified systems can cater adequately to this demand by providing multi-profiled institutions able to supply the skilled workers needed. As the learner clientele can be very demanding, programmes conserved a sound investment for employment have become fiercely competitive. A frequently cited example is the American Community College system that addressed a specific niche in the education and training market.

Can trades be recognised for their employment-related value?

Technical and vocational education, which is a part of the tertiary education sector, is driven by the constant demand for services and by self-employment opportunities. Technology is ever more present in this type of work therefore education and training have become more sophisticated. A related field is artisan training where long-standing areas of expertise (e.g. tile making, stonemasonry) based on complex skills can offer an attractive career path.

Can entrepreneurialism be taught?

Many successful entrepreneurs have no formal education. Their natural energy, curiosity, special talents (such as sales skills) and risk adversity have helped them succeed. Entrepreneurial graduates are a desirable breed but to what extent can these skills be taught or acquired? IGOs can assist by providing current and evidence-based policy advice. For instance, the OECD's Local Economic and Employment Development Programme (LEED) focuses on this crucial issue by identifying and disseminating innovative ideas for local government, governance and the social economy. LEED offers policy advice to both OECD and non-member economies which seek to boost employment creation and economic development through locally-based initiatives.

Does the modern academy offer attractive careers?

This has some areas that are obviously attractive. For example, students interested in academia and research careers tend to naturally lean towards these areas. Advanced academic credentials are required for these careers and are pursued with a clear purpose in mind. Gifted young researchers are usually identified early and guided towards the institutions and qualifications considered optimal for their talents. Furthermore, the retirement of the baby boomers has caused significant shortages notably of teaching faculty. While this latter area has opened up employment opportunities, the trend towards contracted faculty and the difficulties of securing tenure continue to discourage able graduates from choosing this path.

Baby Boomer Retirement: A Crisis for Academia

It is estimated that 20-33% of the academics in OECD universities will retire between 2000 and 2010. Some 40 % of academics are aged 55 years and over in Australia, Austria, France, Germany, the United Kingdom, the Netherlands and Sweden.

Forecasts show that the UK will need approximately 19,000 by 2020 to meet teaching demand, while Canada will have to recruit 3000 per year over the next decade to provide the faculty required.

Source: Dr Tremewan C., (2008) *Presentation at the Seminar on Trends in Doctoral Education*, sponsored by the UNESCO Forum on Higher Education, Research and Knowledge, Ireland.

How to promote teaching excellence?

Responding to many of the above-mentioned questions and issues will require a new emphasis on teaching excellence. As the labour market changes, new profiles of faculty are essential. Teaching must be redefined to attract not just new graduates but people with skills and experience in a particular type of work. Awards to recognise teaching excellence are a step in the right direction but these need to be matched by attractive salary schemes. Beyond this aspect, excellence also means giving graduates the capacity to be globally competitive. For this reason, it is necessary to find ways to assess and evaluate the quality of teaching and compare internationally what students have learned.³

³ The OECD's AHELO study is the most promising initiative.

iii) Realising the potential of Communication and Information Technology (CIT)

For two decades CIT and open learning have been viewed as the solution to the burgeoning demand for tertiary education by a wide range of learner clienteles. These two modalities have had separate development paths although CIT is increasingly used in open learning today. Technology, now accompanying the education, research and institutional management processes, continues to evolve rapidly. Its benefits are well known but so are its costs and far from equitable global applications. Analysing this domain in a report for the 2009 *World Conference on Higher Education*, Philip Altbach noted that the early promise of CIT has not yet been fulfilled (Altbach *et al* 2009).

Since 2000, CIT has opened exciting new vistas for tertiary education through the delivery of social media and its applications for teaching, learning and research. I-campuses, open courseware, Internet-mediated teaching, virtual classrooms and borderless education are just a few of the current terminology. There is much hope for this domain with demand from middle and low-incomes countries (MICs and LICs). Before this can occur, some challenges must be faced. For example, the digital divide is a hard fact when, together Africa, the Middle East, Latin America and the Caribbean constitute only 17.2% of internet users. Moreover, the significant costs of purchase and upkeep pose major problems for many countries where CIT could lead to progress. More recently, the OER (Open Educational Resources) movement has been gaining ground. First adopted at UNESCO's 2002 *Forum on the Impact of Open Courseware for Higher Education in Developing Countries* funded by the William and Flora Hewlett foundation, OER embraces learning content, tools and implementation resources. This opens the way to re-mix, improve and redistribute educational materials and resources. In recent years, OER and its partner OEL (open Educational Licences) have been the topics of increased debate to ensure that potential is matched by equity of access and benefit.

Altbach *et al.* contend that this disconnect between potential and *status quo* results from some erroneous premises, *inter alia*, that the positive applications of CIT would be relevant in all sorts of contexts; that accessing information and generating knowledge in tertiary education are basically the same process; that CIT time and space-related issues are identical everywhere in the world; and that CIT providers could easily adapt their products to economies of scale to assure profits.

Bioinformatics: Symbiosis between academic research and technology transfer

Bioinformatics is a CIT-assisted interface discipline focusing on data management systems of life sciences (e.g. molecular biology, genomics). Where is this knowledge available?

Region	Universities offering Bioinformatics Courses
Africa	8
Asia	49
Europe	57
Middle East	5
North America	153
Australia/New Zealand	16
Latin America	3
Online courses	13

Source : www.nslj-genetics.org/bioinfraining/

In contrast, distance/open education with its original delivery modalities of mail, radio and television was deemed a more reliable supply source for middle and low-income countries including small islands and their special geographical challenges. Nevertheless, as CIT has evolved, its more sophisticated media have been quickly welcomed by providers. Today some 24 mega-institutions catering to over 100,000 students can be found throughout the world e.g. the Indira Gandhi Open University, the Shanghai TV University, UNISA and the African Virtual University, Spain's National Distance Education University and the University of Phoenix in the United States. The undeniable advantages of this provision satisfy demand and guarantee considerable revenue.

Some risks and problems have emerged during this evolution. For example, there are issues of quality assurance, the danger of mass credentials from "degree mills" and fraudulent practices amongst some for-profit providers. Multi-cultural concerns include course content which is largely North-driven and criticism of English as the predominant language of instruction. Last but not least, the very weak capacity in low-income countries in terms of poor connectivity, inadequate teledensity and too few qualified support staff has meant that technology has limited applications. Consequently, experts monitoring CIT progress feel that this has not been leveraged for optimal impact in tertiary education. Its full benefits regarding wider access, reduced costs and creative teaching and learning have still to be achieved.

What about the future? The next wave of CITs will break new ground with modalities such as dual-mode institutions, consortia, digital learning platforms, M-learning via mobile phones and immersive education using virtual and simulation technology. It is important to monitor the impact of CIT on tertiary education despite the difficulties posed by fast-changing delivery. CIT has spawned numerous mechanisms to support research (e.g. virtual libraries, creative commons licences and tag clouds) but more needs to be explored regarding its use in teaching and learning. Furthermore, there is current debate on the real value of the Open Society where unbridled access to CIT-based data can become e-babble rather than a solid source of knowledge. Much is still expected from CIT but it needs to be more cost-effective and context-

relevant. In this regard, the CIT industry (*e.g. Autodesk, Ericsson, Nokia and others*) deserves special mention as an essential social and economic partner to support the educational process through cutting-edge technology. Current initiatives achieving this objective include Cisco's contribution to the 2010 Shanghai World EXPO which has educated a vast public about living and working in cities of the future and IBM's Africa Academy and Makoka Minds projects which provide advanced IT support for university research. Realising the full potential of CIT will ultimately depend on further consolidating this partnership.

IV. SOCIAL ENGAGEMENT AND TERTIARY EDUCATION: NEW IMPERATIVES

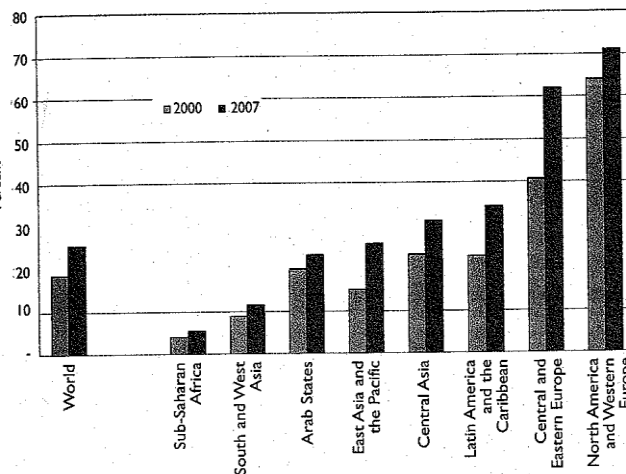
**Background to Panel III 14 September 2010*

i) Defining social engagement in the Knowledge Society

Social engagement has moved beyond the basic idea of university outreach to various partners and communities. Engagement has become a multi-faceted mindset which serves to remind us that the age of the ‘ivory tower’ is definitively over. Moreover, it is the natural complement to strategies for economic growth.

In recent years, the concept of the Knowledge Society and the accompanying social engagement has rapidly evolved so that it now defines the entire orientation of tertiary institutional policy and practice. This has served to highlight the numerous obligations of tertiary education to a fast changing society. Indeed, meeting the increased demand for this provision constitutes a major social responsibility in itself.

Rising Demand for Tertiary Education 1990-2025



Source: Altbach Philip et al. (2009), “Trends in Global Higher Education: Tracking an Academic Revolution”, UNESCO.

Contributing to enhanced productivity and finding the best ways to reach this objective are now simply part and parcel of the social engagement mindset. As the role of tertiary education has steadily become more important with globalisation, its capacity to constructively address immediate and emerging societal questions has become an essential component in the search for sustainable solutions. This challenge has been called the “battle for the soul of higher education” noting that the traditional societal mission of academic higher education is facing heavy pressure from the growing commercialisation of the sector (Altbach et al. 2009). However, an extensive earlier debate already documented the logic for engagement and instances of emerging good practice (Bjarnason and Coldstream 2003). This debate contended that institutions have much to gain when the public is firmly convinced of their relevance and

essential contribution to socio-economic progress at all levels. In 2010, engagement has become a core value for institutions.

The post-crisis agenda presents a unique opportunity for institutions - whatever their mission or profile may be - to seize the high ground in the social debate. Post-2010, in every country, all major actors will have high expectations of the recovery process. Governments, especially those facing elections in the near future, understand that they need to deliver good news to their citizens.

Tertiary education institutions cannot disappoint. Universities are hubs for generating knowledge, creative thinking, social debate, policy advice and educating citizens who are well informed and capable of critical and dynamic partnerships with industry and commerce. Other types of tertiary education institutions, which focus on specialised training, assure the production of skilled human capital ready to adapt to the needs of a fast-changing and often volatile labour market. Equitable access should be assured for all wishing to pursue their chosen tertiary studies. Thus, the right to education will be respected and the danger of losing valuable talent through social exclusion can be avoided.

Institutions, whatever their profile, are now being judged by the variety, vitality and impact of their interactions with society. Indeed, it has been suggested that this is how they should judge themselves. While basic research remains a foundation stone, its application to innovation is growing in importance. Concurrently, teaching and learning at all levels must conserve and advance expertise to keep pace with a world where technology now accompanies virtually every field of activity. Ranking systems attest to the reality of social judgements, though there is wide consensus that current approaches (notably the Shanghai Jiao Tong Academic Ranking of World Universities) are too narrowly oriented towards science and technology. The multiple aspects of social engagement could constitute an alternative and equally valid index and would provide a different perspective on institutional commitments and their impact. In this respect, the research led by Frans van Vught for the European Commission on appropriate indicators for the European tertiary education landscape has been timely. (*Source: van Vught 2009*)

ii) The many aspects of social engagement

Striving to resolve social issues has impacted on governance approaches (including commitment to gender equity in management and faculty posts), institutional mission statements, strategic planning, research directions, teaching and learning policies and access strategies. It also reinforces the status of tertiary education as a public good where government investment must remain adequate even though cost-sharing will be necessary. While tertiary education institutions remain justifiably relevant, they must remain vigilant in ensuring that their attributes are constantly demonstrated to society at large. Their obligations are challenging: rigorous, pertinent and objective enquiry through research must be preserved; students need to gain skills both for their future working life and for responsibilities as leaders and citizens in the future; a culture of lifelong learning has to be nurtured to support people wishing or needing to enter or re-enter education and training at various stages of their careers.

Thus, engagement becomes a contract between institutions and partners. The latter may be global, regional, national or local in character with activities that are encouraged and often directly supported by national policy makers because the outcomes of this interaction are both desirable and necessary. The new requirements for engagement discussed below imply dialogue and practical co-operation. Both areas must be well thought through and dynamic.

Contributing to more equitable globalisation

As evoked in Section III, globalisation has accelerated yet without equitable benefits. In 2010, many segments of low socio-economic populations have been lifted out of severe poverty (notably in Asia and

Latin America). However, huge discrepancies remain in education, health, income levels, access to food and water and CIT. Immigration and refugee populations have swelled. Fragile democracies are preventing some countries from achieving inclusive development policies. The effects of climate change and frequent natural disasters have mobilised humanitarian efforts of the international community.

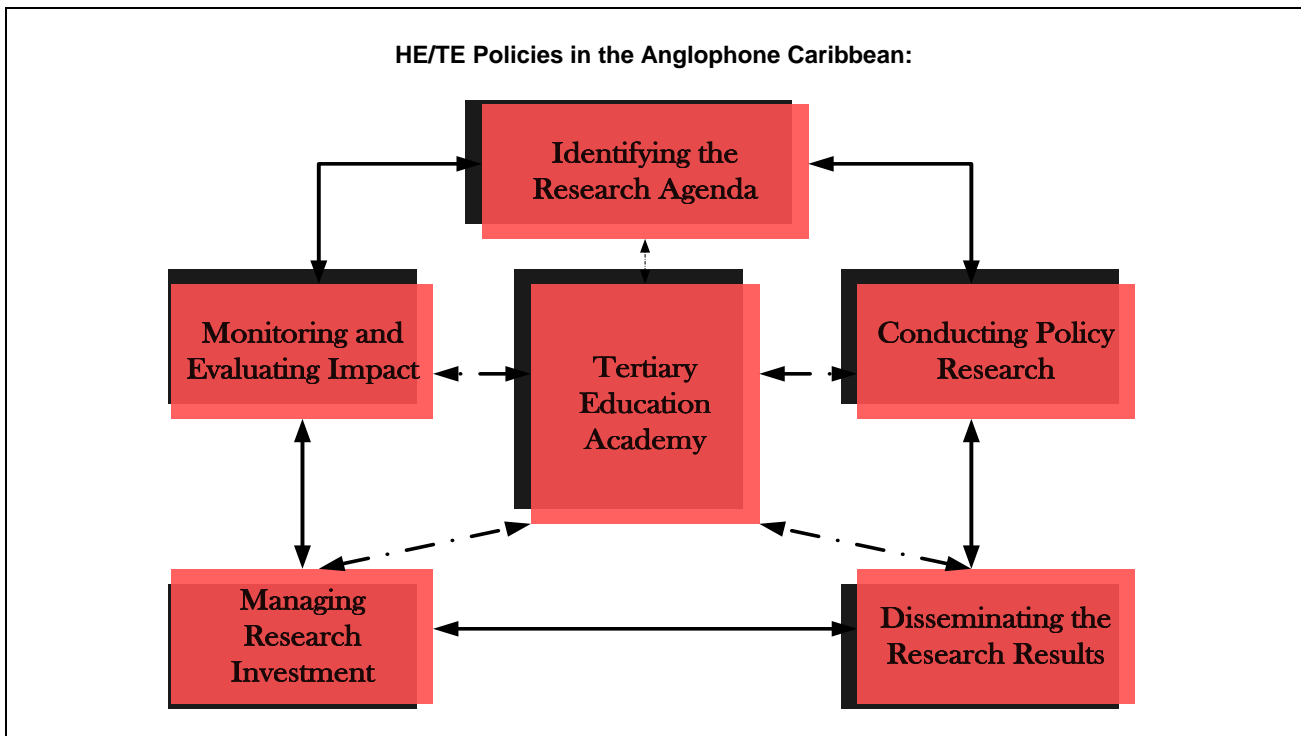
Multilateral initiatives remind us that globalisation involves social responsibility. However, as long as poverty and similar scourges afflict humanity, this process continues to operate at two inequitable levels. Therefore, the UN now focuses its concerted action on the Millennium Development Goals (MDGs). It has encouraged both civil society (*via the 2001 Cardoso Report*) and the private sector (*via the 2000 Global Compact*) to engage more actively to achieve fair and equitable globalisation.

Moreover, regionalism has emerged as a powerful force within globalisation as it permits organisations to collaborate for maximum benefits. Many of these bodies devote significant attention to tertiary education concerns: APEC, the Lisbon Process, SADD, the Gulf States, the Euro- Mediterranean Community, CARICOM, NEPAD, the African Union, the Indian Ocean Community and the Pacific Forum. International debate on the purposes and priorities of tertiary education take place in more selective entities (such as UNESCO, the OECD, the Commonwealth, the European Union and the African Union) as well as in international NGOs comprising various constituencies (*inter alia*, IAU, IAUP, WFTU and IUS). Through these exchanges, a broader public is apprised of the seriousness and extent of worldwide tertiary education problems. Moreover, the local ramifications of globalisation become evident thereby rendering this process more comprehensible. Last but not least, this interaction helps build social capital via networking and co-operation.

Tertiary education has a key role to play in this dynamic. The academy's contribution to international problem-solving is illustrated by initiatives such as the Millennium Project at Colombia University's Earth Institute and by the research carried out by the United Nations University. Essential research for long-term sustainable solutions to these issues must be ground-breaking and multi-disciplinary to tackle the complexity involved. There are already steps in this direction. For instance, the recent decision by the MacArthur Foundation to support a new interdisciplinary Master's programme in Development Practice (MDP) involving ten universities in eight countries recalls the earlier proposal to shift to Mode 2 Knowledge combining theory with the complexities of practice (Source: *Gibbons et al 1994*). Another example is the recent conference on ACU Universities and the MDGs (Cape Town, 2010) which explored how academia can help resolve long-term problems. Concurrently, low and middle-income countries urgently need diversified tertiary education to produce the skilled human capital needed to build innovative economies with strong medium and small business sectors since these provide a vital employment pool for most populations.

Fostering national debate on purposes and priorities

At national level, tertiary education institutions now expect to discuss their missions and strategies with their principal beneficiaries (i.e. governments, employers and specific stakeholders) in appropriate fora such as councils, review committees and open meetings. These exchanges focus on tertiary education strategy, research policy and financing as well as the participation of institutions in local and regional development and global initiatives. This debate benefits all concerned since needs and optimal provision can be defined.



Source: Mr. Ali, (2007), Seminar, Trinidad-Tobago.

Governments and the labour market seek a competent and adaptable workforce with diverse skills. Professions, including teaching, need intellectual rigour and a broad general culture. Scientific and medical sectors require excellent researchers able to help transfer knowledge into practice. The development of cities as well as regional and local communities can be greatly enriched by the wide array of expertise provided by tertiary institutions. Young people constituting the traditional student cohort must be assured of education and training to prepare for their future. As the OECD/IMHE Regional Review process demonstrates, this dialogue can be usefully replicated on other scales (e.g. regional and local communities) within national borders.

The social, economic and cultural aspects of these reviews are diverse. In addition, the political aspects can be especially significant with the complexities of federal systems (Brazil, United States) or the challenges presented by exit from civil conflict (Iraq, Kyrgyzstan) or natural disasters (Indonesia, Haiti).

Creating a culture of learning for the 21st century

Addressing the consequences of the revolution in learning over the last decade now dominates tertiary education policy. In 1998, the OECD publication, *Redefining Tertiary Education*, forecasted the future landscape of this sector. Burgeoning demand and various profiles would change dramatically in relation to age, gender, and work/study arrangements. Learners would come from much wider cultural backgrounds due to increased international mobility and migratory movements. Significantly increased demand for lifelong learning was already expected. These new learners would require an educational environment suited to their requirements. Creating new learning spaces would be an institution-wide challenge affecting the academic profession, the curriculum and the teaching and learning process. Progress in information and communication technology would accompany this evolution. Convened by UNESCO, the 1998 *World Conference on Higher Education* encouraged an international debate on the approaching transformations and demonstrated that there were great differences in national, regional and intra-regional capacity to deal with the changes. Thus, the risk of inequality was signalled and would require extreme vigilance.

This was prescient, but the speed of change and the range of resulting pressures for tertiary education institutions were perhaps not fully anticipated. Together, economic globalisation and the rapid advances in CIT have reshaped the world, notably the labour market and the social interaction of its populations. In 2010, society changed beyond recognition with dynamic emerging economies dominating the markets and ever more sophisticated communication tools. Because the Knowledge Society operates within this context, education must inevitably evolve at all levels to meet the requirements of new publics. Education now has new opportunities to create interaction along with greater social responsibilities.

The current learning culture in tertiary education institutions serves diverse publics. The traditional student cohort of future societal leaders is the E-generation which is fully attuned to an internationalised world. Other learners, seeking to combine work with training or re-training opportunities, adopt a more instrumental approach to study. Lifelong learning is a desirable attitude and now attracts a curious senior public. Can everyone be satisfied? Obviously, only diversified tertiary education systems where institutions are more specialised in their mission can meet the needs of this learning culture. Moreover, its new imperatives cannot succeed without the social engagement of those involved:

- greater understanding is needed of the learning process through educational research. In this respect, the research undertaken by OECD/CERI on topics such as assessing adult learners, innovative learning environments, brain research and the social outcomes of learning provide essential upstream data for policy makers facing changing educational needs;
- high priority should be given to excellence in teaching with prestigious recognition and rewards;
- frequent curriculum reviews can ensure that content is relevant and innovative to equip learners for their social and professional lives;
- faculty, learners and society should interact more closely (e.g. external practitioners as teachers, work-related or community service internships as course credits) ;
- exploring the potential of CIT and of OER should continue to facilitate individual learning and study patterns as well as to make knowledge more accessible through learner-friendly technology. As the Vice-Chancellor of the United Kingdom's Open University recently remarked, the primary challenge for today's learners is to know how and where to locate knowledge.

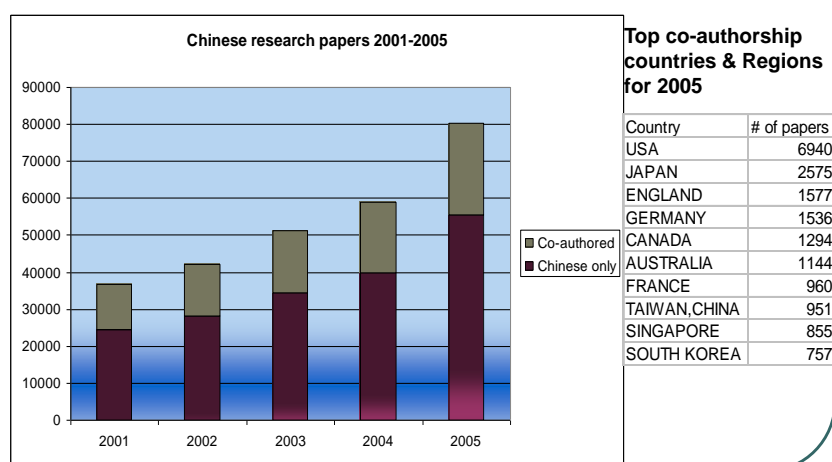
Linking theory with practice in research and training

The gulf between theory and practice has to narrow yet further for knowledge to have optimal impact. Interaction between researchers and research users can achieve this. Discoveries in science and medicine will always be vital for industry and the health sector which wholeheartedly supports intellectual enquiry. It is now crucial that research improves the quality of people's lives and that its applications are comprehensible and appreciated. Dialogue between theorists and practitioners helps advance the process and impact of knowledge generation.

In recent years, linking theory with practice in research and training has become a fertile ground for innovative strategic alliances built around emerging common interests for research and its impact on teaching. New NGOs such as APRU, WUN, LERU, IARU and Universitas 21 exemplify this trend by attesting to changing geo-political alliances and regional priorities.

These new partnerships are a further source for strengthening social capital as they offer academics networking opportunities which are relevant and forward-looking.

Scientific Research in China: Global Collaborations



Source: Thomson Web of Science data cited by Dr Tremewan C., (2008) *Presentation at the Seminar on Trends in Doctoral Education*, sponsored by the UNESCO Forum on Higher Education, Research and Knowledge, Ireland, (UNESCO 2008 C).

This linkage is important for graduate employment. The volatile post-crisis labour market could constitute a responsibility for faculty who can and should become involved in the areas in which their graduates find career openings. In a world in which public sector employment is shrinking and entrepreneurship is the buzz word, social engagement could be most challenging. Through dialogue with employers on subjects such as doctoral education, graduate jobs and the skills acquired via tertiary studies (i.e. the focus of the OECD's AHELO initiative), faculty can better understand the outcomes of their teaching and improve performance. Excellence in teaching and research should be matched by recognition of relevance and transferability. Here, effective quality assurance standards can help ensure the high calibre of both substance and delivery.

Achieving equality of access and opportunity

Much can be said about inequality both amongst different countries and regions as well as within national borders. As previously mentioned, OECD countries remain the top destinations for international study while African universities are barely mentioned in international league tables. Poor schooling can exclude able students from lower socio-economic areas of the community to gain access to tertiary institutions especially the most prestigious. In September 2009, the United Kingdom Employment Secretary, Lord Mandelson, challenged British universities to reverse this trend as part of their responsibility for equitable access. In some contexts, the mix of public and private financing schemes may not extend to cover all types of social needs. Groups such as migrants, linguistic minorities and refugees may suffer exclusion due to inadequate levels of preparation for their tertiary studies.

Such situations deny the individual's right to equal opportunity. Moreover, exceptional talent can be wasted or lost which impedes the advancement of knowledge and its social applications. For these reasons,

the OECD Review, *Tertiary Education in the Knowledge Society*, devotes particular attention to issues and strategies to achieve social equity. Policy makers should be advised to heed the evidence gathered to correct these aspects of inequality.

Promoting citizenship and community action

All learners are first and foremost citizens so their studies should help hone their civic attributes. There are many opportunities if faculty are creative and innovative. The humanities offer fresh perspectives in this regard. For instance, some MBA programmes now use Shakespearean tragedies to illustrate human failings in Business Ethics courses. The increasing social mix in many populations offers immediate and domestic opportunities to contact and understand other nationalities and their cultures. This local diversity should be celebrated for its rich contribution to social fabric. Understanding global and local issues through discussion and encounters with external experts, drawing lessons regarding social responsibility from a diverse curriculum, study credits for work experience linked to course content and recognition for volunteer activities in the community and abroad are just a few ways to enrich the learning experience.

Graduates should terminate their studies feeling that they have evolved as individuals, members of their communities and informed world citizens. High-calibre and relevant tertiary education can help satisfy this legitimate expectation.

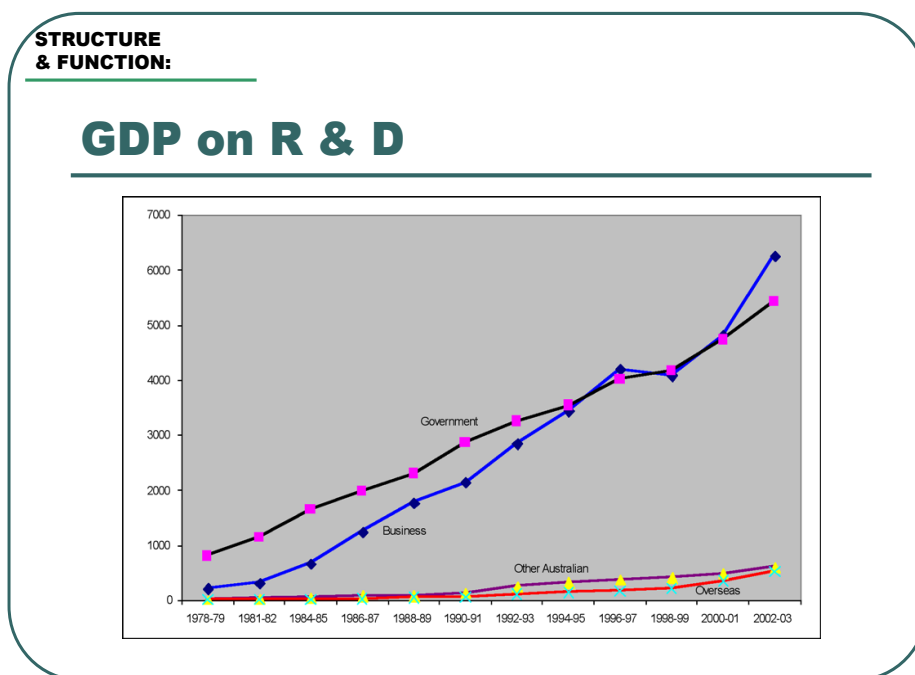
Further strengthening partnerships and stakeholder dialogue

The OECD policy review, *Tertiary Education in the Knowledge Society*, lists government recommendations that affect all social stakeholders. This now opens the way for improved interaction in which the actors (policy makers, institutions, learners, employers and community groups) can strengthen formal and ongoing dialogue to exchange data on expectations, needs, experiences and good practices. For example, the views of the private sector on its needs and expectations from graduates are just as important as its philanthropic activities. More widely, regional and international bodies can accelerate their efforts to promote dialogue and partnership. Generally, people respond well to opportunities which contribute to their own future prospects and well-being by addressing issues in their local communities or by playing a significant role in large-scale national or international socio-economic development. Importantly, this encourages a climate of greater citizen contentment because those involved feel “part of the solution”.

Furthermore, given the high demand for education, a new dialogue with learners should become comprehensive exercise which is fully in keeping with the breadth and differentiation of tertiary provision. Could learners help shape the next stage of change within the sector? Throughout the past decade of evolving policy reform and institutional change, their voices have been heard but are often not taken into sufficient account.

Last but not least, strengthening engagement through partnership and dialogue is perhaps the best way to enhance the image of “the tertiary education brand” as a key motor of socio-economic development.

GNP on R & D in Australia – the private sector and government as equal investment partners



Source: Australian Research Council, (2006).

With OECD's extensive experience in the field of partnerships and stakeholder dialogue, a solid foundation has been laid. Perhaps the strategic focus on improved productivity to deal with post-crisis challenges (especially ways to increase employment opportunities) may open new avenues for co-operation and broaden the range of voices involved.

iii) African Tertiary Education: a global social responsibility

Africa has lagged behind as global development has accelerated and countries in other regions, previously considered poor, have managed to achieve significant social and economic progress. The economic crisis has fanned fears that essential donor aid could be reduced. For this reason, the OECD supported the *2008 Accra Agenda for Action* to improve aid effectiveness.

Africa faces daunting social development challenges: populations in sub-Saharan African countries such as Angola, Mozambique and Madagascar have literacy rates of 50% or less with female illiteracy a continuing problem; over 300 million people do not have access to safe drinking water and some 500 million lack adequate sanitation; 66% of arable land is affected by degradation, energy from the biomass is causing deforestation and health hazards; social problems include rapid urbanisation and large-scale migration as a result of political conflict; governance issues are often plagued by corruption and the private sector remains underdeveloped. Due to this volatile context African populations are at even greater risk as sustainable knowledge systems (i.e. policies, infrastructure, human capital, public investment, CIT capacity) to remedy and prevent these ills are fragile or do not exist at all.

On the other hand, Africa has abundant natural resources: oil in very poor countries such as Angola, Chad and Equatorial Guinea; important mineral deposits and great potential in improved agricultural

production; energy from solar, wind and hydraulic sources; and accelerated economic development as demand increases from growing numbers of urban consumers. Moreover, the economic news is encouraging. China's trade with Africa topped \$55 billion in 2006. Private capital flows in 2007 were estimated at \$50 billion with increasing interest from investors in Asia and the Middle East. Throughout 2008, the global commodities boom swelled economic growth rates which averaged 6.6 % throughout sub-Saharan. In 2010, African diamonds are in high demand as China is expected to take 16% of the world market by 2016.

Both political (e.g. Ellen Sirleaf Johnson of Liberia) and business leaders (e.g. Nicky Oppenheimer of De Beers) believe that good governance and sustainable economies rather than aid are vital for Africa's future (Source: *International Herald Tribune*, 30 August 2008). The new *African Governance Initiative*, led by former UK Prime Minister Tony Blair, seeks to follow up on pledges to Africa made at the G8 summits in recent years. In this vein, one suggestion is to create economic sub-blocs of African states with common interests to stimulate stronger growth. Aid will remain essential but should be for the poorest populations and for emergency assistance. However, the greatest potential for sustainability is economic innovation measures which will revitalise national economies and their private sector. African business must face high labour costs for capital, labour, taxes, transportation and communications and excessive government regulation. Such factors deter entrepreneurship and impede productivity. One notable exception is Benin's thriving textile industry which is managed by women. Furthermore, the knowledge-base required for this productivity, educated leaders and decision makers, sound scientific research communities as well as skilled workers are the long-term key to sustained progress. Only the positive tension amongst government, the economy and civil society can attain this objective.

Along with these socio-economic challenges, can tertiary education be strengthened to help Africa take part in the global economic recovery process?

The dramatic decline of African universities starting in the 1980s, due to investment focused on basic education, has had severe consequences. Although demand for advanced study increased in the region (as elsewhere in the world), the chances of a young sub-Saharan African to reach post-secondary education were roughly 18 to 20 times lower than those born in industrialised countries. Various bodies (UNESCO, the United Nations University and the Association of African Universities) repeatedly warned of the long-term harm from this approach.

By the late 1990s, policy analysis then shifted direction to deal with the demands of the knowledge society and the CIT revolution. Africa was advised to prepare itself for the increasing role of market forces in tertiary education through a greater role for private higher education institutions as well as for the associated risk of increased brain drain resulting from favourable global employment opportunities for mobile human capital.

In 2010, the problems (governance, brain drain, financing and the digital divide due to high costs) remain acute. Africa now faces several challenges:

- to address the multiple demands of tertiary education which requires diversified provision
- to ensure that research deals with the EFA agenda where issues such as literacy, teacher training, TVET and non-formal learning need in –depth analysis for sustainable progress
- to regain an adequate level of high level research notably in STI fields. This is especially daunting given the legacy of low investment in scientific research which has led to the predictably disastrous

state of scientific publications (e.g. research papers from North Africa have increased but the output from South Africa and the rest of the region has generally remained static). There are few scientists in African populations (less than 5%); and the exodus of highly qualified graduates from the region continues to be problematic. For example, more than 20.000 highly skilled citizens of Mauritius, Mozambique and Tanzania are abroad and this figure rises to over 50.000 for Ghana, Kenya and Tunisia (Source: *Thomson Scientific Data 1987-2006*).

Policy advice recommends renewed attention to higher education and the brain drain in Africa. For example, the World Bank launched its Science and Technology Forum in 2007. Science, engineering, technology and innovation (SETI) is a priority for the New Partnership for African Development (NEPAD). The Sida/Sweden-funded UNESCO Forum for Higher Education, Research and Knowledge (2000-2009) devoted special attention to strengthening African capacity notably by commissioning the design of indicators suited to measuring the reality of research conditions and output in this socio-economic context. Nevertheless, the challenges for African scientific research in the immediate future should not be underestimated. Long-term political will is needed for any progress. A critical mass of top African researchers remaining in the region must be assured. Data collection and storage is needed urgently to ensure that policy making will be based on current evidence. The major dilemma comes from the systemic perspective in which African science to help resolve the region's development issues will depend on sound national research systems. At the same time, the very nature of top level science (i.e. Big Science) is international in character. Can African research attain the required excellence in both directions?

Despite the hurdles ahead, support for African knowledge capacity cannot be abandoned. Indeed, the spring 2010 meetings of the World Bank and the IMF reiterated this view. Positive experiences are emerging (*inter alia*, the powerhouse role played by South African tertiary education, the reforms launched in various countries including Nigeria, Rwanda, Tanzania and Madagascar and recent thrusts in south-south co-operation linking African nations with Brazil. Finally, this is a social responsibility for the global tertiary education community in co-ordination with other stakeholders and must be met through more active engagement especially in times of crisis.

V. PERSPECTIVES FOR TERTIARY EDUCATION IN A POST-CRISIS WORLD: ISSUES FOR THE OECD AND A WIDER PUBLIC

**Background to Panel IV 15 September 2010*

i) Acknowledging the crisis in public confidence

The impact of the recession is likely to be felt more acutely from 2010 onwards and a difficult economic climate could continue for another decade (i.e. to 2020).

Whatever the underlying economic reasons (and economists are far from united about this point) public perceptions of crisis are hard to dispel. Fragile signs of recovery will not easily alter the “recession” mentality or rapidly banish scepticism and fear amongst the wider public. A clear example is public disfavour of attempts by the banking sector to reinstate previous super-bonus arrangements and exorbitant salary packages for business personalities. The popular mood can swing quickly and Governments have to pay attention to opinion.

On the social front, there is growing concern that the economy-focused GNP index falls short of measuring genuine human well-being and desirable values in 21st century society. Nobel laureates Joseph Stiglitz and Amartya Sen are currently advising the OECD on more relevant indicators to measure progress which will be more equitable and recognise important factors such as family, environmental action and leisure time⁴.

Many OECD countries are being forced to revise public policies which had been based on forecasts made on the assumption of better economic conditions. Challenges may include:

- paying the post-recession bill (for instance, through increased taxation or higher inflation);
- regaining investor confidence in the banking sector and financial markets;
- addressing the needs and consequences of ageing populations in OECD countries;
- rethinking immigration policies;
- dealing with volatile labour market conditions including alarming levels of youth unemployment;
- continued priority for the education and health sector but with new costs to be met;
- honouring pledges for enhanced green policies to better manage climate change and responding effectively to humanitarian disasters as these befall segments of the human family.

⁴ <http://www.stiglitz-sen-fitoussi.fr/en/index.htm>

ii) Setting the post-crisis agenda for tertiary education

Increased government regulation of the sector is anticipated, at least in the short-term. Moreover, clear conclusions for the tertiary education sector may be hard to draw in this situation because national responses will vary.

Will the IMHE General Conference conclude that the comprehensive framework proposed by the 2008 OECD Review, *Tertiary Education for the Knowledge Society*, remains the valid basis for the post-recession response? Or, could a re-arrangement of priorities be necessary?

Whatever the scenario, the post-crisis debate on tertiary education must highlight the voice of the modern academy speaking with renewed vigour and authority. Some relevant questions may be:

Governance

- Are governments and institutions partnering to steer national policy and to take account of specific country specificities (such as multicultural populations and adult learner demands)?
- How is governance addressing changing patterns in the academic cross-border mobility of both professors and students (notably in research) and the need to protect domestic intellectual capital?
- If institutions become increasingly demand-driven, how will this affect core missions and management?

Sustainability of the Tertiary Education sector

- How can countries better attune the sector to national development objectives? What lessons can be learned from the experiences of other countries with quite different contexts?
- How can the priorities of access and quality be assured given competing spending priorities for public funding?
- Do gender equity policies exist to ensure that female academics play their full role in management and faculty?

Funding

- Can policy resolve the mismatch between who pays and who benefits from tertiary education?
- How can costs be more fairly addressed for lower socio-economic groups seeking entry to this sector?
- What are the pros and cons of the "user pays" principle (*i.e.* the individual)?

Measuring quality and impact

- How should teaching and research be assessed and by whom?
- Are students and other stakeholders being adequately advised regarding their choice of provision and its likely longer term outcomes?

- How can quality assessment processes be significantly improved?

Research/innovation in the global knowledge society/economy

- How can tertiary education systems and institutions contribute more effectively to this area and what policies are required for their success?
- Can national policies enhance recognition for national and international research excellence?
- How is relevant and applicable research fostered by governments, institutions and other stakeholders?

Efficiency and effectiveness

- Pressures for institutions to specialise so as to focus on research or teaching will inevitably grow and may be part of the process of creating a much more coherent and vibrant tertiary education sector. Will we see a greater degree of specialisation of institutions, with far fewer attempting to conduct both research and teaching in a wide range of disciplines?
- Will the apparent trend towards mergers and rationalisation of provision accelerate?
- How can delivery change to meet demand more effectively? What impact will technology and open education have on the productivity of the sector?

The international tertiary education context

- How can various alliances further contribute to capacity-building and shared good practice?
- How can students be better advised in the field of their international higher education choices?
- In non-OECD countries (facing chronic brain-drain and whose students often opt to study in OECD countries), how can ministers of higher education maximise the benefits of international higher education study in relation to national needs?

Improving the quality, relevance and effectiveness of tertiary/higher education

- How can effectiveness (quality, relevance and outcomes) be better measured in terms of the knowledge and skills needed for today's world?
- How can persistent inequalities that impede access be better addressed?
- How can institutional differentiation and equality be encouraged to avoid competitive and unproductive hierarchies?

In the post-recession world, a new global order may already be emerging. Governments will depend on able and ready partners to implement hectic survival agendas as they strive for a sustainable recovery. The world is changing fast and new indicators are needed to measure this process. The legacy of the 2010 OECD IMHE General Conference will reside in the wealth of effective responses provided by the modern academy to the complex socio-economic questions at hand.

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GLOSSARY

AAU	Association of African Universities
Accra	Agenda for Aid
ACU	Association of Commonwealth Universities
Africa	Governance Initiative
AHELO	The OECD Assessment of Higher Education Learning Outcomes
APEC	Asia Pacific Economic Cooperation
AUF	Association des Universités Francophones
AULP	Association des Universités de la Langue Portugaise
BRIC Nations	Brazil, Russia, India, China
CARICOM	Caribbean Community
CEO	Chief Executive Officer
CERI	The OECD Centre for Educational Research and Innovation
CIT	Communication and Information Technology
GNP	Gross National Product
G8	The group of eight of the leading world economies (Canada, France, Germany, Italy, Japan, Russia, United Kingdom, USA)
IARU	International Alliance of Research Universities
IAU	International Association of Universities
IAUP	International Association of University Presidents
IBM	International Business Machines
IMHE	The OECD Programme for the Institutional Management in Higher Education
IPR	Intellectual Property Regulations
KAUST	King Abdullah University for Science and Technology, Saudi Arabia

LAC	Latin America and the Caribbean
LERU	League of European Research Universities
Lisbon Process	An action and development plan for the European Union between 2000 and 2010 to promote a knowledge-based economy in the region. (Also known as the Lisbon Agenda and the Lisbon Strategy)
Livret Vert	A set of policy proposals for youth in France co-ordinated by Martin Hirsch in 2009
MDGs	United Nations' Millennium Development Goals
Millennium Project	An action plan to achieve the MDGs commissioned by the UN to the Earth Institute at Colombia University and led by Professor Jeffrey Sachs
MIT	Massachusetts Institute of Technology
NEPAD	New Partnership for Africa's Development, established in 2001
OECD	Organisation for Economic Co-operation and Development
OECD Green Growth Strategy	A strategic vision including the creation of necessary policy frameworks to guide national and international policies so that the potential of green growth is realised for all countries. This strategy will be presented to the OECD Ministerial Council Meeting in 2011.
OECD Innovation Strategy	A set of principles for fostering innovation in people (workers and consumers), in firms and in government. The scope of innovation as well as its modalities and locations are analysed so as to help governments formulate far-reaching policies for their national contexts.
R & D	Research and Development
SADCC	Southern African Development Coordination Conference
SETI	Science, Engineering, Technology and Innovation
STI	Science, Technology and Innovation
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISA	University of South Africa
Universitas 21	An international network of leading research –intensive universities in thirteen countries
UNU	United Nations University
WFTU	World Federation of Trade Unions
WUN	World University Network