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The 'Brain Drain'

Academic and Skilled Migration to the UK and its Impacts on Africa

Report to the AUT and NATFHE

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Preface

This report by Alex Nunn, is a key element in a joint project on the effects of Brain Drain by the AUT and NATFHE, funded via the Trades Union Congress by the Department for International Development (DfID). The newly created Mini Learning Fund enables trade unions to develop work on international development education. Eleven unions are currently benefiting from this funding.

The 'Brain Drain' project has its origins in an international conference on higher education organised by the teachers' global trade union federation, Education International, and hosted by the Senegalese teachers' unions, in Dakar, Senegal, in November 2003. At that conference university teachers unions from Africa, Asia and the Caribbean described the difficulties their education systems faced in respect of migration of teachers to the industrialised world. They outlined the complexities and range of phenomena which lay behind the term 'Brain Drain.' Also they were concerned to emphasise that the phenomenon arose from many individual, rational and justifiable decisions, but in the context of conditions and policies which in many cases exacerbated the problems faced by universities, education systems and the societies for which they were vital to economic development.

There is a recognised need to find a balance between the rights of individuals and the mediation of the adverse effects of 'Brain Drain' on countries which are losing an expensive and scarce resource. For example, this is the approach adopted by the Commonwealth Teacher Recruitment Protocol - which the National Union of Teachers (NUT) was instrumental in bringing about. The protocol recognises the right of teachers to migrate internationally on a temporary or permanent basis in furtherance of their careers, but also the need to protect the education systems of poor countries and prevent exploitation of scarce human resources. At the same time, it is clear that 'Brain Drain' remains a sensitive issue and these sensitivities need to be openly addressed as part of the debate. The argument that the free movement of capital must be matched by the free movement of labour is not comparing like with like, in terms of the relative power of capital and labour in developing countries. Nor are national rights included in this pseudo-equation. While some have difficulties with the term 'Brain Drain', it is both the most widely used and recognised term, but one which as the Dakar conference showed, masks a number of different trends and issues which need to be better understood. The issue is also a subtext to the achievement of the Millennium goals for education, and is likely to play a part in the global community's failure to meet Millennium targets.

The issue was taken up in a motion passed by the EI World Congress in Porto Alegre in July 2004. AUT and NATFHE agreed to work together on the issue at that time, recognising that the UK had a particular responsibility as a key player in the 'Brain Drain' phenomenon, and took advantage of the TUC / DfID project financing becoming available at the right time.

The project is aimed at raising the awareness of NATFHE and AUT members about the issues associated with 'Brain Drain' particularly as they affect education systems and societies which are exporters of skilled labour. It is hoped we will extend and deepen the debate among our members on globalisation, international development and the marketplace in higher education and research which has developed in recent years. We also hope it will contribute to the wider debate in the United Kingdom and to the debate at the world level being conducted under the auspices of EI. It is very much a 'work in progress' and a contribution to a debate in which we readily acknowledge, the expertise is widely dispersed. Our project, though focussed on higher education, has resonances for education more generally and also for the health service which is at least equally subject to the phenomenon of 'Brain Drain.'

Finally we would like to thank Alex Nunn for his report, and Gemma Freedman and the TUC for their active help throughout the project and DfID for their financial support. The outcomes of the report are the responsibility of AUT and NATFHE.

Executive Summary

Background and Aims

In December 2004 the Association of University Teachers and the College and Lecturers Union NATFHE jointly commissioned research to review some of the literature on 'the Brain Drain' with a specific emphasis on developing countries in Africa and on academic labour in the UK. This report is the culmination of that research.

The project aimed to review some of the available literature on the 'Brain Drain', to locate this in debates and contemporary approaches to international development and to consider especially the impact of the Brain Drain on Africa, where possible drawing reference to the impact on higher education. The report also considers the scale of migration to work in UK higher education and suggests ways in which AUT/NATFHE might work together and with others to offset the impact of Brain Drain factors and to build the capacity of higher education, and those working in it, in developing countries.

Migration is an emotive issue and debate in this country is often shaped by populist and right-wing arguments, sometimes with racist and xenophobic undertones. This project aimed to develop a more progressive approach to the debate on migration, explicitly addressing the motivations behind migration decisions. This project was shaped by a background understanding that the UK undoubtedly benefits enormously from skilled labour migration, economically, socially and culturally. However, the project is also shaped by a concern to ensure that individual choices to migrate are taken freely, not as a result of political repression, a lack of life chances or vocational opportunities. The project also aimed to assess the extent to which skilled labour migration, and the unequal relationships between rich and developing countries which drives it, is further embedding that inequality. Failing to address these issues, risks leaving the debate on migration to those that seek to use the issue to generate a regressive and dangerous politics of fear and difference.

The Importance of Skills and Education for Development and the Importance of the 'Brain Drain'

The contemporary development context is dominated by strategies to reduce poverty in the least developed countries of the world. These strategies are framed by the overarching Multilateral Development Goals to eradicate poverty and hunger, achieve universal primary education, promote gender equality, reduce child poverty, improve maternal health, combat disease and promote environmental sustainability. It is now widely acknowledged that human, social and institutional capacity are central to successful development, with education being a key component in building this capacity. In this context, skilled labour is of crucial importance for developing countries to overcome the social and institutional barriers to successful development. In addition to this, most contemporary economic theories of growth highlight the key importance of skills to economic performance and development potential.

In this context, the loss of skilled labour is of vital importance for development and development potential. The loss of teachers undermines the ability of schools and education systems to function, the loss of nurses impairs efforts to deliver even basic healthcare and public health programmes and the loss of other skilled professionals acts as a barrier to institutional capacity building, the efficient utilisation of external assistance and private sector growth. The 'Brain Drain', as the flow of skilled professionals out of developing countries has become known, thus marks a potentially serious barrier to economic growth, development and poverty reduction.

Finally, education is important not just in relation to its impact on economic growth but as a social good in its own right. It is a process of re-learning the collective knowledge of society for each successive generation and learning from social and political mistakes. It is thus a core mechanism in cultural reproduction and historical social learning and development. As such, the loss of highly *educated* individuals is a loss of collective social knowledge vested by society in them. It is also a loss to individual families and communities who become separated from individual migrants. While 'economic' migrants may choose to move away from these important social ties, these choices are made as a result of complex pressures (see below).

Why the Academic Brain Drain is Particularly Important

If skilled labour in general is important, academic labour is doubly so, providing a variety of crucial functions:

- Pure research.
- Innovation.
- The translation of research and innovation into useful or commercially exploitable ideas, products and organisational development.
- Building the capacity of others through teaching but also teaching and training other key professionals including teachers and healthcare workers.

Thus while the loss of all skilled labour to migration is of fundamental importance to the development potential of developing countries, the loss of academic labour is even more crucial still.

Factors Causing the Brain Drain

The 'Brain Drain' is a contentious subject and the very term has been challenged in recent years, with some preferring more politically neutral terms 'Brain Exchange' or 'Brain Circulation'. To understand the scale and impact of skilled labour migration from developing countries, it is necessary first to understand the factors driving it. These can be usefully categorised as 'push' and 'pull' factors. Pull factors are those factors that attract skilled labour from developing countries and relate in the main to conditions in countries that receive skilled migrants. These include:

- Higher wages.
- Job opportunities.
- Relatively good working conditions.
- Freedom from political instability or oppression.
- The use of selective immigration policies designed to attract high skilled workers, while deterring others seen as less economically beneficial to receiving countries.

In the case of academics, these are augmented by access to research funding and facilities and the potential to collaborate with other researchers.

Push Factors include:

- A lack of life chances.
- Low living standards.
- Political and social instability or repression.
- A lack of opportunities to utilise skills.
- Natural disasters and environmental or ecological deterioration.

A major feature of African economies and societies over the last 20 years has been the imposition of debt-induced structural adjustment including dramatic cuts in government budgets. While development orthodoxy now places significant emphasis on social and institutional capacity building, structural adjustment has had a particular and lasting effect on the working environment of academics in Africa. It constituted a prominent push factor in relation to the loss of academic labour from developing countries to other developing countries and from developing to developed countries.

Factors which might offset the Impact of the Brain Drain

While the loss of skilled professionals, and academics in particular, may be an important barrier to development, there are a number of factors associated with migration generally, and in some cases with skilled migration specifically, which may offset any negative impacts. These include:

- **Education inducement effects** – the idea that the example of migrants and the higher pay or other benefits that might accrue to them (as well as potentially higher wages at home resulting from skill shortages) offer an incentive for others to undertake education. However, while this might be the case in some circumstances, for the most part there is no lack of demand for education in developing countries. Rather, what are important are institutional and social barriers to participation such as ill-health, inability to release time or afford user fees (on the demand side) and problems with provision due to lack of resources or teachers (on the supply side).
- **Technology and knowledge transfer** – the idea that migrants will either return to their country of origin after a period in the receiving country during which their skills and knowledge were enhanced (e.g. students) or that migrants will establish networks between developed and developing countries for the transfer of knowledge and technology to their home country. However, there are limitations to these effects. Where students (their governments or other sponsors) pay tuition fees the skills and knowledge transfer has been bought and thus an equal and opposite financial transfer has taken place. Moreover, the evidence on the number of people who do return is patchy, with some suggestion in the literature that return is less likely for the higher skilled who find it easier to integrate in recipient countries. In addition, evidence over the extent of technology and knowledge sharing networks was also scant, questioning the extent to which this takes place. Finally, any transfer that does take place needs to be weighed against the opportunity cost that would not have been incurred if the migration had not taken place.
- **Remittances** – the main factor cited as offsetting the Brain Drain is that migrants send large financial transfers back to their home country. There is substantial evidence that this is indeed a major offsetting factor. In some countries remittances are the main source of foreign earnings, dwarfing development assistance and research for the Department for International Development suggests that remittances from the UK amount to £2.3bn or 70%-80% of the UK's Overseas Development Assistance. However, as important as the scale of remittances are the use to which it is put. Here the evidence and theory over the importance of remittances becomes less clear and there are important arguments to suggest that remittances might also create problems unless they are more effectively channelled into productive and social investments in developing countries.

Whether or not the impact of skilled labour migration is negative will depend then on a small number of factors (or determinants) which include whether or not the lost labour could be usefully employed in the home country, whether or not and how skilled migrants remit and what purpose remittances are put to and whether or not skilled migrants subsequently return or engage in knowledge and technology transfer activities.

The Brain Drain and Africa

Africa acts as a perfect case study for the general thesis about development, skills and the Brain Drain. The continent has witnessed decades of wasted development potential and, in

places, suffers problems of extreme poverty and lack of both human and institutional capacity. Even relatively developed African states, like Nigeria, demonstrate a lack of capacity to meet demand for education. In 2000, Nigerian universities could accept only 12% of applicants. The loss of skilled labour and academic staff in particular is thus an acute problem. Across the continent, this has been driven variously by inadequate salaries, poor working conditions, inadequate research and teaching facilities, the budget cuts and social unrest generated by structural adjustment and political repression.

A prominent and important feature highlighted in the literature is that the success of earlier developmental phases – especially in the immediate post-independence phase – may have actually exacerbated the problem as the graduates produced during this period subsequently left. This is a key issue because high skilled labour does not migrate from the poorest places but from those places that have achieved some level of development – enough to put in place a relatively strong education system. A further key issue highlighted in the literature is that competition for academic labour is neither new, nor does it come solely from the developed world. The literature on academic migration in Africa shows that there has been considerable movement of skilled professionals within Africa as well as from Africa to the developed world. It also shows that relatively developed states in the continent – such as South Africa – have begun to wake up to the competitive logic of contemporary immigration policies and have begun to eschew the traditional race politics in relation to immigration in South Africa and pursue a more economically determined approach to attracting skilled labour from abroad.

The Brain Drain and Higher Education in the UK

The UK has for several years operated differentiated immigration policies designed to attract some skilled workers and recent announcements suggest that these will be strengthened. In terms of the general scale of migration to work in the UK, Home Office figures show that in 2002 119,000 people entered the UK on Work Permits.

During the same year there were roughly 34,000 foreign nationals working as academics in UK higher education, about 23% of the total. This is slightly up on 1995/6 when the proportion was just over 21%. The largest group of these staff had nationalities of other EU states. Chinese and Indian nationalities are also well represented as are US nationals. However, there is also data to show significant numbers of academic staff working in the UK who are nationals of some of the poorest countries in the world. While the numbers of staff working in UK higher education from developing countries are relatively small and insignificant in the context of the UK labour market, the effect of their loss to developing countries might be much more substantial because of the scarcity of skilled labour there.

Suggestions for Policy Development

There are several areas in which AUT/NATFHE may want to develop their response to the Brain Drain. These are set out in the main report as a series of potential action points to:

- Promote development and the reduction of poverty and inequality, with increased spending on education and higher education being one component in strategies to achieve this.
- Promote the development of international protocols on recruitment, similar to those which already apply to the NHS with regard to the recruitment of healthcare workers from the developing world. This would help to manage the negative impact on developing countries and to prevent disreputable recruitment practices.
- Promote debate on compensatory mechanisms. While preventing labour migration has potentially negative implications, compensation for the loss of skilled labour is one method of offsetting the negative effects of the loss of this labour to developing countries. Such options are often associated with a migration tax and because of this are summarily dismissed.

However, a broader and more sophisticated approach, linked to global efforts at poverty reduction or debt relief, may be viable.

- Accentuate the potentially beneficial effects of skilled labour migration, by promoting measures to facilitate the transfer of resources, technology and knowledge back to developing countries. Many such measures could be taken up by individual higher education institutions and contributed to by local trade union representatives such as the facilitation of opportunities for return migration for those who wish to return, student and staff exchanges, the sharing of research findings, facilities and teaching materials, the development of HEI partnerships between developed and developing countries (akin to 'twinning'), the development of research and diaspora networks.
- Promote and protect core labour standards, trade union rights and academic freedom in an international context.
- Promote debate and awareness of the 'Brain Drain'.

1. Introduction

1.1 Background and Objectives

In December 2004 the Association of University Teachers and the College and Lecturers Union NATFHE jointly commissioned research to review some of the literature on 'the Brain Drain' with a specific emphasis on developing countries in Africa and on academic labour in the UK. This report is the culmination of that research.

The research project had a number of objectives:

- To review some of the available literature on the Brain Drain.
- To locate this in debates on international development and poverty reduction, with specific reference to progress toward the United Nations' Millennium Development Goals.
- To relate the Brain Drain and development debates to approaches to economic development and under-development.
- To consider the impact of the Brain Drain on Africa, with specific reference, where possible on the impact on higher education.
- To consider and where possible quantify the scale of Brain Drain-type migration to the UK.
- To suggest ways in which AUT/NATFHE might pursue work in relation to the Brain Drain as part of their work domestically and in solidarity with academic and education trade unions across the world.

1.2 Structure of the Report

The structure of this report is shaped by these objectives. **Chapter one** considers the Development Context, reviewing the implementation of the Millennium Development Goals and the shift in emphasis that they represent toward human capital and institutional capacity building as part of an overall agenda of 'poverty reduction' in the developing world. This development agenda is related to some contemporary approaches to development and under-development. In particular, the contemporary focus on human capital and the role of education is drawn out, as is the need for skilled workers in the developing world in order to overcome human and institutional capacity barriers to development. The chapter concludes that academic labour is particularly important in this context as it provides a variety of functions that are vital for overcoming these barriers such as the development of human capital, teaching education and health professionals, innovation and through translating innovation into social, commercial and organisational development.

Chapter two considers theoretical debates related to skilled labour migration and in particular highlights estimates of the overall Brain Drain. It also critically reviews a series of 'feedback' and mitigating factors identified in the recent literature on skilled labour migration which some commentators identify with changed emphasis from Brain 'Drain' to Brain 'Gain', 'Circulation' and 'Exchange'.

Chapter three identifies the factors affecting the impact of skilled labour migration from developing countries. These include the initial reasons for migration – the so called ‘push’ and ‘pull’ factors -, the scale and various ways of estimating the cost of lost labour and skills. The chapter also considers important mitigating factors which might offset the loss of skilled labour such as education inducement effects, technology and skills transfer back to the developing country and perhaps most importantly of all the flow of financial remittances back to developing countries from expatriates living and working abroad. The scale and impact of remittances on development is the subject of some considerable academic and policy debate and this issue is considered in detail.

Chapter four briefly summarises some of the literature on skilled labour migration, with a particular focus on South Africa, a country that has often been associated with both aspects of the Brain Drain, simultaneously drawing in skilled labour from other parts of Africa and sending doctors, teachers and nurses in particular to the developed world and specifically to the UK. However, despite this common assumption, recent academic thinking on the evidence suggests that while the latter is still true, the former may not be, and even that South Africa is a net loser of workers to other parts of Southern Africa. In addition to South Africa there are also more superficial references to the effects of Brain Drain on Zimbabwe, Cameroon, Senegal, Nigeria, the Gambia and Ghana.

Chapter five reviews the general scale of migration to the UK and includes a specific focus on the scale of foreign nationals working in higher education. The chapter also highlights some potential explanatory dynamics for the scale of skilled migration to the UK such as the changing structure of the UK economy and changing UK migration policies.

Chapter six considers arguments in the literature concerning policies to address the negative impacts of the Brain Drain. Following an analytical model developed in this literature it considers policies related to the six ‘Rs’ of Reparation, Restriction, Return, Resourcing, Recruitment and Retention. In doing so, it both reviews and critically analyses different types of policies categorised in this way.

Chapter seven develops some suggestions for AUT/NATFHE. These are not recommendations as such. Rather, the discussion suggests different areas in which AUT and NATFHE may want to develop policy and suggests some action points to take these forward.

1.3 Methodology and Limitations

The research for this report was in the main part conducted over eight days in December 2004. Use was made of academic research databases to source literature on the Brain Drain. A substantial debt is also owed to the work of Lindsay Lowell and Alan Findlay and associates who produced a range of useful outputs in a major research project for the International Labour Office, funded by the UK Department for International Development (DfID). Particularly useful was an annotated bibliography developed as part of this project. While this proved a useful source the project is obviously limited by the resources available, which means that some of the suggested areas for action will require further research before full development.

2. The Development Context

2.1 The Millennium Development Goals

At the turn of the Millennium, United Nations Secretary General Kofi Annan produced *'We the Peoples': The Role of the United Nations in the 21st Century* (UN, 2000) in advance of the Millennium Summit convened by the General Assembly to discuss the future of the UN. The report sketched the picture of the need for global action to ensure that the benefits of 'globalisation' are spread widely:

"There is mounting anxiety that the integrity of cultures and the sovereignty of states may be at stake. Even in the most powerful countries, people wonder who is in charge, worry for their jobs and fear that their voices are drowned out in globalisation's sweep. Underlying these diverse expressions of concern is a single, powerful message: globalisation must mean more than creating bigger markets. The economic sphere cannot be separated from the more complex fabric of social and political life, and sent shooting off on its own trajectory. To survive and thrive, a global economy must have a more solid foundation in shared values and institutional practices – it must advance broader and more inclusive, social purposes." (UN, 2000:10).

The report went on to identify the specific dangers presented by unmanaged globalisation, including institutional weaknesses at global and domestic level (9-17, 67-75), inequality between and within states, poverty and exclusion from integration in the global economy (19-25), failing legitimacy (23-40, conflict and war (43-53) and environmental degradation (55-65).

In order to tackle these threats to international stability, Annan suggested a programme of action in four areas:

- **Tackling poverty** with suggested targets with regard to poverty itself and also contributory factors such as universal primary education, halting the spread of HIV/Aids, improving slums, generating employment, institution building around this agenda, action on market access for exports from LDCs, sovereign debt cancellation and increased development assistance. The need for a specific focus on Sub-Saharan Africa was also emphasised.
- **Tackling war and conflict** by strengthening international law and its enforcement, extending the remit and capacity of the UN itself.
- **Action on environmental sustainability** was also suggested including the promotion and widespread ratification of the Kyoto Protocol, more extensive use of 'green accounting' in national accounts and support for the Millennium Ecosystem Assessment.
- **Reform of the UN** was proposed, specifically with regard to the composition of the security council, increased resources, managerial reform of the Secretariat and increasing engagement with NGOs (77-80).

These four areas were to be tackled by policies and initiatives broadly consistent with certain universally held values and principles including freedom, equity and solidarity, tolerance, non-violence, respect for nature and shared responsibility.

The September 2000 Millennium Summit endorsed action broadly consistent with this agenda in the form of the *Millennium Declaration*:

“We believe that the central challenge we face today is to ensure that globalization becomes a positive force for all the world's people. For while globalization offers great opportunities, at present its benefits are very unevenly shared, while its costs are unevenly distributed. We recognize that developing countries and countries with economies in transition face special difficulties in responding to this central challenge. Thus, only through broad and sustained efforts to create a shared future, based upon our common humanity in all its diversity, can globalization be made fully inclusive and equitable. These efforts must include policies and measures, at the global level, which correspond to the needs of developing countries and economies in transition and are formulated and implemented with their effective participation.” (UN, 2000a: 1).

The declaration accepted fully the shared principles but expanded the areas for action to seven in number (see Box 1). While broadly consistent with the agenda set out by Secretary General Annan, a number of areas received additional emphasis, including arms control, combating terrorism and transnational crime, minimizing the civilian effect of sanctions, enhancing individual rights (with a focus on women and children), media freedom and a more detailed focus on the problems of Africa.

Box 1: The United Nations Millennium Declaration Areas for Action	
Pre-Conference Report	Millennium Declaration
1. Free our fellow men and women from abject and dehumanising poverty.	1. Peace, security and disarmament
2. Free our fellow men and women from the scourge of war.	2. Development and poverty reduction
3. Free our fellow men and women, children and grandchildren from the danger of living in a planet irredeemably spoilt by human activities.	3. Protecting the environment
4. Make the United Nations a more effective instrument.	4. Human rights, democracy and good governance
	5. Protecting the vulnerable
	6. Meeting the special needs of Africa
	7. Strengthening the United Nations

United Nations (2000), *We the Peoples' The Role of the UN in the 21st Century*; United Nations (2000a), *Millennium Declaration*.

The Millennium Declaration has since received further institutionalisation in the form of the establishment of eight overarching Millennium Development Goals (MDGs)¹ with a wide range of associated targets and statistical performance indicators attached to them as part of a policy ‘roadmap’. These MDGs have become the widely accepted barometer of progress in ‘making globalisation work for the poor’.

The eight MDGs cover:

1. The eradication of extreme poverty and hunger
2. The achievement of universal primary education
3. The promotion of gender equality.

¹ Reflecting the further development and institutionalisation of several goals, targets and indicators agreed over the course of the 1990s and previously termed International Development Goals.

4. Reduction of child poverty.
5. Improvement of maternal health.
6. Combating HIV/Aids, malaria and other diseases.
7. Promoting environmental sustainability.
8. Developing a global partnership for action.

Attached to these eight goals are eighteen targets and forty-eight statistical indicators of progress (see [Table 1](#)).

2.2 Progress on Global Poverty Reduction and Human Development

There is widespread agreement that on current trends the MDGs will not be met (MDG Website; World Bank, 2004). For instance, between 1990 and 2001 the number of people living on less than \$1 a day fell only slightly from 27.9% of the world's population to 21.3% and in several regions, particularly in Africa, it rose (MDG Website). A large part of the existing and potential future reduction has been related to parts of South and East Asia, particularly in India and China (Vandemoortele, 2002: 3). The spread of HIV/Aids is also a major problem, especially in Sub-Saharan Africa and East Asia where infection rates are set to rise substantially over the next five years. In total around 20 million people have already died from HIV/Aids related illness, a further 40 million are infected and five million more people are infected each year (DfID, 2004).

The MDGs and recent thinking on poverty (for example see World Bank, 2003) highlight its multi-dimensional nature. However, it is also increasingly accepted that poverty, even absolute poverty, has a relative dimension which makes measurement against global income standards such as \$1 or even \$2 a day problematic. The level at which an individual or household can be defined as in poverty is thus highly contingent on social context. Therefore, in reality, the 'poverty line' changes both between places and across time as income and consumption for different social groups change at different rates. The \$1 a day definition itself was simply the product of a small number of in-depth studies that are by now well out of date (Vandemoortele, 2002: 4-7). The point is, that even the slow progress that is being measured by the MDGs vastly under-estimates world poverty and over-estimates progress in tackling it.

Box 2: The Scale of Global Poverty Human Development Problems Today

Poverty

- More than a billion people live on less than \$1 a day. In Sub-Saharan Africa, this amounts to more than 46% of the population.*
- Over half the world's population live on less than \$2 a day. In Sub-Saharan Africa and South Asia more than 76% live on less than \$2 a day.*

Hunger

- Around a quarter of children in low-income countries are malnourished (as measured by being underweight). In South Asia, this figure rises to nearly 40% and in Sub-Saharan Africa to nearly 30%.** In Sub-Saharan Africa, more than 30% and in South Asia nearly 25% of the population consume less food than is necessary to maintain an average level of activity.***

Education

- Around 88% of the world's primary school aged children have enrolled in primary education. However, these figures vastly overstate actual performance because of large differences in the rate of enrolment, attendance, completion and educational outcomes.

Gender Equality

- Ratios of girls enrolled in schooling as a proportion of boys shows that across the world boys are still more likely to be engaged in schooling than girls, though the gap has closed significantly in some regions, and in Latin America and the Caribbean, East Asia and the Pacific and the Middle East and North Africa, performance is ahead of the trend rate to meet the MDG interim target for 2005. However, serious gender disparity remains in Sub-Saharan Africa and South Asia, where performance is well below the needed trend to meet the MDGs.

Child Mortality

- The death rate for under fives in low income countries is 121 per 1,000 live births, compared to only 7 in high income countries such as the UK. It is estimated that 70% of deaths before the age of five are caused by preventable disease and malnutrition. Sub-Saharan Africa is seriously off-track for meeting the MDG on child mortality as a result of conflict and the HIV/Aids crisis.

Maternal Health

- In developed countries the life-time risk of death during pregnancy or child-birth is around 1 in 2800. In East Asia this rises to 1 in 840, in North Africa to 1 in 210, in Latin America and the Caribbean to 1 in 160, South East Asia to 1 in 140, in Western Asia to 1 in 120. In South Asia the risk is 1 in 46 and in Sub-Saharan Africa it is 1 in 16.

HIV/Aids

- In 2003 more than 98% of the 36 million adults and 2 million children with HIV/Aids lived in developing countries, with these heavily concentrated in Sub-Saharan Africa where over 8% of the total population is infected. 45 million new infections are forecast before 2010, yet prevention programmes reach less than 1 in 5 of the people in need, meaning that in the countries hit hardest life expectancy could fall to 30 years (DfID, 2004).

Access to Safe Drinking Water

- In 2000, 1.2 billion people still lacked access to safe drinking water.

MDG Website. * 2001 figures; ** 2000 estimates; *** 1999-2001.

Table 1: Millennium Development Goals, Targets and Indicators

Goals	Targets	Indicators
1. Eradicate extreme poverty & hunger	<p>1. Halve between 1990 and 2015, the proportion of people whose income is less than one dollar a day.</p> <p>2. Halve between 1990 and 2015 the proportion of people who suffer from hunger.</p>	<p>1. Proportion of people below \$1 a day.</p> <p>2. Poverty gap ratio (incidence x depth of poverty).</p> <p>3. Share of poorest quintile in national consumption.</p> <p>4. Prevalence of underweight children (under 5 years of age).</p> <p>5. Proportion of population below minimum level of dietary energy consumption.</p>
2. Achieve universal primary education.	<p>3. Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.</p>	<p>6. Net enrolment ratio in primary education.</p> <p>7. Proportion of pupils starting grade 1 who reach grade 5.</p> <p>8. Literacy rate of 15-24 year olds.</p>
3. Promote gender equality and empower women.	<p>4. Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015.</p>	<p>9. Ratio of girls to boys in primary, secondary and tertiary education.</p> <p>10. Ratio of literate females to males of 15-24 year olds.</p> <p>11. Share of women in wage employment in the non-agricultural sector.</p> <p>12. Proportion of seats held by women in the national parliament.</p>
4. Reduce child mortality.	<p>5. Reduce by two thirds, between 1990 and 2015, the under five mortality rate.</p>	<p>13. Under five mortality rate.</p> <p>14. Infant mortality rate.</p> <p>15. Proportion of 1 year old children immunised against measles.</p>
5. Improve maternal health.	<p>6. Reduce by three quarters between 1990 and 2015, the maternal mortality ratio.</p>	<p>16. Maternal mortality ratio.</p> <p>17. Proportion of births attended by skilled health personnel.</p>
6. Combat HIV/Aids, malaria and other diseases.	<p>7. Have halted by 2015 and begin to reverse the spread of HIV/Aids.</p> <p>8. Have halted by 2015 and begun to reverse the incidence of malaria and other diseases.</p>	<p>18. HIV prevalence among 15-24 year old pregnant women.</p> <p>19. Contraceptive prevalence rate.</p> <p>20. Number of children orphaned by HIV/Aids.</p> <p>20. Prevalence and death rates associated with malaria.</p> <p>22. Proportion of population in malaria risk areas using effective malaria prevention and treatment measures.</p> <p>23. Prevalence and death rates associated with TB.</p> <p>24. Proportion of TB cases detected and cured under directly observed treatment (short-course).</p>
7. Ensure environmental sustainability.	<p>9. Integrate the principles of sustainable development into country policies and programmes and reverse the losses of environmental resources.</p> <p>10. Halve by 2015 the proportion of people without sustainable access to safe drinking water</p>	<p>25. Proportion of land area covered by forest</p> <p>26. Ratio of area protected to maintain biological diversity to surface area</p> <p>27. Energy use (kilograms of oil equivalent) per \$1 GDP (PPP)</p> <p>28. Carbon dioxide emissions (per capita) and consumption of ozone-depleting chlorofluorocarbons (ODP tons)</p> <p>29. Proportion of population using solid fuels*</p> <p>30. Proportion of population with sustainable access to an improved water source,</p>

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	<p>and basic sanitation.</p> <p>11. Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers.</p>	<p>urban and rural</p> <p>31. Proportion of population with access to improved sanitation, urban and rural</p> <p>32. Proportion of households with access to secure tenure</p>
<p>8. Develop a global partnership for development.</p>	<p>12. Develop further an open, rule-based, predictable non-discriminatory trading and financial system.</p> <p>13. Address the special needs of the LDCs – includes tariffs and quota free access for LDC exports; enhanced programme of debt relief for HIPC countries and cancellation of official bilateral debt; more generous ODA for countries committed to poverty reduction.</p> <p>14. Address the special needs of land-locked countries and small island developing states (through the programme of action on sustainable development of small island developing states and the outcome of the 22nd Special Session of the General Assembly).</p> <p>15. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long-term.</p> <p>16. In cooperation with developing countries, develop and implement strategies for decent and productive work for youth.</p> <p>17. In cooperation with pharmaceutical companies provide access to affordable drugs for developing countries.</p> <p>18. In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.</p>	<p>Official development assistance</p> <p>33. Net ODA total and to the least developed countries, as a percentage of OECD/DAC donors' gross national income.</p> <p>34. Proportion of bilateral, sector-allocable ODA of OECD/DAC donors for basic social services (basic education, primary health care, nutrition, safe water, and sanitation).</p> <p>35. Proportion of bilateral official development assistance ODA of OECD/DAC donors that is untied.</p> <p>36. ODA received in landlocked countries as proportion of their gross national incomes.</p> <p>37. ODA received in small island developing states as proportion of their gross national incomes.</p> <p>Market access</p> <p>38. Proportion of total developed country imports (by value and excluding arms) from developing countries and from least developed countries, admitted free of duty.</p> <p>39. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries</p> <p>40. Agricultural support estimate for OECD countries as a percentage of their gross domestic product</p> <p>41. Proportion of ODA provided to help build trade capacity</p> <p>Debt sustainability</p> <p>42. Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (cumulative)</p> <p>43. Debt relief committed under HIPC initiative</p> <p>44. Debt service as a percentage of exports of goods and services</p> <p>Other</p> <p>45. Unemployment rate of 15- to 24-year-olds, male and female and total ^e</p> <p>46. Proportion of population with access to affordable, essential drugs on a sustainable basis ^f</p> <p>47. Telephone lines and cellular subscribers per 100 population</p> <p>48a. Personal computers in use per 100 population</p> <p>48b. Internet users per 100 population</p>

United Nations (2001; 2003).

2.3 Reaching the Goals: Growth, Distribution and Skills Mobility

Meeting the MDGs will require a substantial increase in the growth rates of many developing countries. More important still, is that the shares of that growth, and indeed existing wealth, are retained by or redistributed to the poorest sections of society in these countries. Theories of growth and the beneficiaries of it are complex but most award at least some significance to education, skills and the capacity to produce innovation and skills growth.

A number of theoretical approaches have been used to explain why some states have failed to achieve growth, prosperity and a reasonably equal internal distribution of the benefits of growth in the global economy.

The 1960s and 1970s saw the rise of theories of dependency and neo-colonialism emerging from Latin America and Africa, which had a marked impact on the political ideologies of many less-developed countries and on forums focused on collective strategic development such as the Group of 77 and the United Nations Conference on Trade and Development (UNCTAD) (Hoogvelt 2001). Dependency theories in their original manifestations were critical of continuing unequal power relationships between developed and newly independent states. They focused on the dependence of these countries on capital investment from and access to markets in the developed world and the price paid in developed country markets for primary commodities. Dependency theories also noted the reliance of less developed country economies on skills, technology and technical know-how which were retained in core countries in the global economy and later in Transnational Corporations (Villamil 1977, Dos Santos 1970). Such structural analyses led to the characterisation of post colonial experiences as the 'development of underdevelopment' (Frank 1969) and 'dependent development' (Cardoso 1972).

Dependency ideas shaped early analyses of the impact of high-skilled labour migration. A more modern definition of dependency would consider the relative dependence of developing countries' capacity to innovate and create skills domestically, under conditions fully accountable to domestic populations. For instance, one of the benefits which is often attributed to attracting Foreign Direct Investment is that this will create technology and knowledge transfer to host economies, thereby contributing to overcoming dependence over the longer-term. However, one of the main determinants of whether these positive effects take place is the absorptive capacity of the existing business and skills stock. Where the host economy is characterised by low skills, for instance, it is unlikely that technology and knowledge transfer will take place (Girma and Gorg, 2002). Further, if these benefits are to be transferred in a relatively equitable fashion, then higher level skills would need to be broad based to prevent economic benefits being absorbed only by elite domestic firms operating in tandem with a separate FDI economy. The loss of high skilled labour, especially where produced through publicly financed education, would fit within the general schema of capital (in this case human capital) transfers to developed countries. As such, the Brain Drain might be seen as the latest phase in neo-colonialism. Where previous phases of neo-colonialism have centred on the unequal exchange of raw materials and manufactured goods between developed and developing countries, so the latest phase includes the unequal transfer of the prized resource of the modern economy – skilled labour.

While dependency theories were highly influential in shaping developmental strategies and calls for reform by developing countries in the mid 1970s they are less popular today and were never fully accepted inside the major multilateral development institutions². These institutions have tended to rely on neo-classical economics, at least since the mid 1970s.

² Except in some enclave special agencies of the United Nations such as the UNCTAD and ECLA which were dominated in the 1960s and 70s by the rhetoric of dependency, even if this was not always accompanied by substantive policy commitments.

Early neo-classical writings on high-skilled migration from developing countries, largely by Bhagwati and associates, posited a neutral effect owing to the loss only of earnings accruing to a single individual (Bhagwati and Hamada, 1973). A small number of skilled migrants might improve the welfare effects for those remaining (Grubel and Scott, 1966; 1966a), by for instance generating a premium on wages resulting from a shortage of labour. Other analyses (Lewis, 1954) have stressed that while the loss of skills is an important factor for development potential, this is so only insofar as these skills can be absorbed and put to use by the sending economy. If, for instance, high-skilled migration is as a result of high unemployment for high-skilled workers, then there is zero or little opportunity cost associated with their loss to the sending economy.

However, as with all neo-classical economics, this work relies heavily on reductionist analytical models and stresses that the "...presence of distortions would invalidate this proposition" (Miyagiwa, 1991: 743). Other potential negative effects include an inflationary pressure on wages as a result of reductions in the supply of specific skills, emulation effects and efforts to retain skilled labour (Bagwhati and Hamada, 1973). The loss of human capital, and the positive technical and financial externalities that are created by it, is thus a welfare loss to the sending economy. Miyagiwa (1991) argues that increasing returns to education and higher productivity will induce high skilled migration from LDCs and that this will have negative effects for non-emigrants in the LDC.

New Growth theories stress the limitations of neo-classical growth theories. For instance, in endogenous growth theory, internal innovation and technological change is argued to have the capacity to generate constantly increasing returns to investment.³ Skills are separated from knowledge in that the former are privatised and individualised whereas the latter are socialised and relatively generally available. The challenge for development then is having sufficient skills available to take up generalisable knowledge about products and ways of producing them (Romer, 1986):

**"the use of skills makes a transformation of knowledge into products and services possible."
(Straubhaar, 2000: 16).**

Within the umbrella of new growth theories, several studies have developed empirical analyses which suggest that growth rates correlate with rates of schooling across countries (Mountford, 1997: 2). Further, these new growth theories emphasise also that skills spill-overs occur where there are spatial concentrations of high skills and innovation, such as promoted by Harvard Business School Professor Michael Porter, doyen of cluster theory, which shapes regional economic development in many advanced industrial economies (Porter and Ketels, 2003).

The message conveyed by new growth theories actually re-emphasises notions of dependency and unequal development first because there is no in-built tendency toward convergence between countries and second because the absence of this tendency is underlined by concentrations of skills which accentuate existing inequalities in potential for innovation and growth. This is especially so where skilled labour produced in or financed by developing countries, at great expense, then subsequently migrates (Straubhaar. 2000). Finally, because human capital development in the form of skills is so important as a transmission belt to turn general knowledge into production (Romer, 1990: s75-77), "...if the stock of human capital is too low, growth may not take place at all" (Romer, 1990: s73).

According to most theories of growth, then, high-skilled labour migration will affect the potential for growth, principally because of the loss of human capital, impacting both directly in terms of the loss of their output (or surpluses from their output) and indirectly through the

³ This is in contrast to most classical and neo-classical theories of growth which tend to assume decreasing returns and convergence between economies over time.

loss of their multiplier effects in the economy or more indirectly still because of the loss of their capacity to generate additional human capital accumulation (as in the case of teachers, educators, healthcare professionals, organisational experts etc).

However, in practice these theoretical effects are highly contingent on a wide range of additional determining factors including the type of labour and skills involved and the capacity of the sender economy to put them to good use. For instance Darko (2002) argues that much of the debate on the brain drain is simplistic and were the high-skilled diaspora to be immediately reversed, the incoming skills could not easily be absorbed. The same argument has been made by President Obasanjo of Nigeria in the past (Udogu, 2004).

Nevertheless approaches to economic growth throughout the world are increasingly shaped by the drive to increase human capital. This involves both education and training interventions and also attempts to lure high skilled workers from overseas. For instance, an EU conference in the Hague at the end of 2004 emphasised the EU's need to enhance the mobility of skilled workers, particularly research staff, into the EU from elsewhere in the world, and measures such as the Marie Curie initiative aim to strengthen the European Research Area by attracting EU researchers working abroad back to the EU (European Commission, 2002).

The UK has recently announced measures to “to ensure that only those who benefit Britain can come here to work or study; to strengthen the UK's borders; to crack down on abuse and illegal immigration; and increase removals” (Home Office, 2005). The new system is to be based on a points system with applications for immigration placed in four categories: “highly skilled, skilled, low skilled and student/specialist” with an independent labour market advisory group established to make recommendations on the existence of skills gaps, to ensure that immigration policies serve the needs of the UK economy. In his foreword to the new strategy the Prime Minister underlined this point:

“Our vital public services depend upon skilled staff from overseas. Far from being a burden on these services, our expanding NHS, for example, would have difficulty meeting the needs of patients without foreign-born nurses and doctors. The expertise of IT and finance professionals from India, the USA and the EU help maintain London as the financial centre of the world. Managed migration is not just good for this country. It is essential for our continued prosperity.” Tony Blair, February 2004 (Home Office, 2005a).

Canada has adopted similar policies with aggressive recruitment from the rest of the world in response to the Brain Drain of high skilled workers from Canada to the United States (DeVoretz, 1999; Crush, 2002). Davenport (2004) notes the adoption of a ‘talent initiative’ in New Zealand to encourage skilled immigration and alterations to the existing points system to facilitate this. McLaughlan and Salt (2002) demonstrate the adoption of policies to attract skilled labour in the Netherlands, Denmark, Germany, France, Australia, UK, Canada and the United States. While the majority of these policies are based around easing entry through regulatory reform or the adoption of express visa or points systems which differentiate between needed skills and others, they do note the adoption of tax incentives in Denmark and the Netherlands.

Writing about South Africa, Borat et al. (2001) point to the gradual adoption of differentiated immigration policies toward skilled and unskilled workers, with a relaxation on conditions of entry for the former group and suggestions of lower taxation on skilled labour to provide incentives for immigration. Lowell notes that several other countries (Malaysia, Canada) have offered tax incentives to lure their own nationals to return (2001a). Borat et al. also highlight the salary premium attracted by skilled workers as employers attempt to attract and retain them. South Africa has also adopted a points-based system similar to that recently introduced in the UK. The drive of these policies is to enable entry of those bringing financial or human capital (RSA Department of Home Affairs, 1997; RSA Task Team on International Migration, 1999). More recently still the government in South Africa enacted legislation so that the legal framework for immigration ensures:

“economic growth is promoted through the employment of needed foreign labour, foreign investment is facilitated, the entry of exceptionally skilled or qualified people is enabled, skilled human resources are increased, academic exchanges within the Southern African Development Community is facilitated and tourism is promoted” (RSA Department of Home Affairs, 2004).

The popularity of measures to attract and retain skills suggests a number of important potential future trends. First, is a notable conceptual change that reduces workers to human capital inputs. Second, as the trend in increasing policy measures to attract skilled workers suggests, is the possibility of the extension of the type of policies used toward FDI to skilled workers. In the 1970s and 80s increasing capital mobility, enabled by technological and organisational change and regulatory reform, encouraged states to compete in ‘a race to the bottom’ in terms of labour rights, taxation and regulation to attract scarce and mobile financial capital. In the early part of this century skills formation is increasingly seen as the key explanatory variable effecting rates of growth and labour productivity. As such there may be potential for similar competitive policies applied toward workers with particular types of skills. Crush (2002) notes the international dynamics of this with one country after another targeting the skilled workers of a second country after witnessing the loss of its own skilled labour to a third. The clear implication of such measures, would be increasingly hierarchical global labour markets in which the skilled have increasing options for mobility while those with skills perceived as abundant or redundant are constrained (Davenport, 2004: 618). Domestic labour markets may also be pressured toward hierarchical differentiation in this way with the potential for exit among the high-skilled leading to a skewing of the tax burden to lower earners and the potential for rising (and multiple) inequality in incomes, access to resources and domestic goods and services *within states*. It also raises questions about long-term developmental consequences and inequality *between states*, given that in a situation of general scarcity, not all countries will have the resources available to attract skilled workers. Given the multiple factors that ‘push’ and ‘pull’ migrants, the evidence suggests that skills mobility will replicate existing patterns of economic growth, creating deeper divisions between rich and poor states.

2.4 Education, Investment and Economic Growth

New growth theory and its emphasis on the underlying conditions which support the investment environment, particularly education, have been increasingly influential in shaping the development policy environment:

“Improving the investment climate goes hand in hand with enhancing human capital. A skilled workforce is essential for firms to adopt new and more productive technologies, and a better investment climate raises the returns to investing in education.” (World Bank, 2004a:11).

Against a background analysis of the impact of the knowledge economy on development, the World Bank has argued that flexible education systems are needed to facilitate life-long-learning, technological and knowledge dissemination, innovation and, through this, increasing productivity. Specifically the Bank argues that a literacy rate of about 40% is sufficient to begin the process of opening up to technology transfer in the form of FDI flows. The Bank claims that Intel’s 1996 decision to locate in Costa Rica was due not only to its overall investment environment (i.e. political stability, property rights etc) but to the quality of its education system (World Bank, 2003b:5). Education is also cited as responsible for additional benefits such as lower crime rates and social cohesion (World Bank, 2003b:7-8). However, skills alone are not enough to facilitate the social transformation necessary for high productivity growth. Additional measures to allow flexible adjustment to change are required such as lifelong learning and social risk management systems to prevent labour from reverting to subsistence work while structural adjustment occurs.

Table 2: Education and Human Development, Selected Countries/Indicators (2002)

Rank	Country	Public Expenditure on Education % of GDP	Life Expectancy at Birth in Years ¹ (2002)	Adult Literacy % of ages 15 and above ² (2002)	Combined Gross Enrolment Ratio % ³ (2002)	Education Index	Human Development Index (2002)
1	Norway	6.8	78.9	..	98	0.99	0.956
8	US	5.6	77	..	92	0.97	0.939
12	UK	4.6	78.1	..	113	0.99	0.936
119	South Africa	5.7	48.8	86	77	0.83	0.666
131	Ghana	4.1	57.8	73.8	46	0.65	0.568
147	Zimbabwe	10.4	33.9	90	58	0.79	0.491
151	Nigeria	n/a	51.6	66.8	45	0.59	0.466
157	Senegal	3.2	52.7	39.3	38	0.39	0.437
169	Central African Republic	n/a	39.8	48.6	31	0.43	0.361
177	Sierra Leone	n/a	34.3	36	45	0.39	0.273

UNDP (2004). See Appendix for notes.

In this model, the Bank warns that education supply is not enough to achieve the necessary structural alterations to make liberalisation successful and to engender growth. In addition, then, governments must incentivise learning by appealing to individual aspirations and inequality:

“The productivity of schooling may be much lower in countries where the government does not promote an environment favorable to the creation of higher-paying jobs and a significant number of educated workers work in the public sector...Policies that artificially compress wage differentials also reduce the returns to post-schooling investment. This is particularly true in Sub-Saharan Africa and the Middle East and North Africa, less so in Latin America and Asia.” (World Bank, 2003b: 6).

The trick therefore, learning the lessons of the shift to service sector growth in developed countries, is to match the supply of education and skills to increasing demand for skilled labour from FDI and social policies that allow some degree of wage inequality to incentivise labour supply.

“The rise in earnings inequality can be explained by changes in technology, the production process, work organization, and patterns of international trade. Changes in the production process led to changes in the demand for certain types of labor. Organizational and technological changes may have caused the shift in demand to dominate the shift in supply, leading to a rise in returns to schooling and increased earnings inequality in advanced economies and some middle-income countries.” (World Bank, 2003c: 12).

The Bank also notes that the continuation of social adjustment requires higher level education and needs to be accessible to women as well as men, posing this as a crucial determinant of the skills development of succeeding generations (World Bank, 2003c: 15). The outline for the 2006 *World Development Report* (World Bank, 2004b) highlights the focus on gender equality, education and income/expenditure inequality throughout the development process.

2.5 From Economic Development to Poverty Reduction and Increasing Migration

Theories of economic growth typically focus on the direct economic effects of variables and are constructed inside rigid models. As development orthodoxy increasingly notes, economic effects of changes to an economy need to be augmented by social and institutional factors (Stiglitz, 1998; 2001). As such, increasing emphasis is placed on the importance of institutional reforms which build human capital, such as in the World Bank-led Poverty Reduction Strategy approach.

Formal education provides a vital mechanism not only to increase the capacity and productivity of labour but also to secure the social values necessary for development, helping to prevent a return to traditional and subsistence systems:

“Education triggers a series of benefits: it is key to creating, applying and spreading new ideas and technologies which in turn are critical to high sustained growth; it augments cognitive and other skills, which in turn augment the productivity of labor; better educated women are more effective in household production of children’s good health and schooling. In addition, education is the ultimate liberator, empowering individuals to make personal and social choices.” (World Bank, 2002: 6).

The PRSP Sourcebook also focuses on the role of education in achieving social adjustment:

“A large body of research points to the catalytic role of basic education for those individuals in society who are most likely to be poor—that is, girls, ethnic minorities, orphans, people with disabilities, and people living in rural areas. Basic education or literacy training, of adequate quality, is crucial to equipping disadvantaged individuals with the means to contribute to and benefit from economic growth. Education is one of the most powerful instruments societies

have for reducing deprivation and vulnerability: it helps lift earnings potential, expands labor mobility, promotes the health of parents and children, reduces fertility and child mortality, and affords the disadvantaged a voice in society and the political system.

Education investments are also crucial for the sustained economic growth that low-income countries are seeking to stimulate, and without which long-term poverty reduction is impossible. Education directly contributes to worker productivity, and can promote better natural resource management and more rapid technological adaptation and innovation. It is fundamental to the creation of a competitive, knowledge-based economy, not only for the direct production of the critical mass of scientists and skilled workers that every country requires—no matter how small or poor—but also because broad-based education is associated with faster diffusion of information within the economy, which is crucial for enabling workers and citizens in both the traditional and modern sectors to increase productivity.” (Aoki et al., 2003: 233-4).

The importance of education in securing this developmental trajectory led the Bank to suggest a shift in the *Education For All* target toward completion of a defined amount of primary education, set at six years because of statistical analysis that suggests this is point at which the benefits of education become embedded. The Bank has also identified major barriers to achieving this, such as weaknesses in data, policy, institutional capacity and financing alongside contextual dynamics such as HIV/Aids, conflict (and post-conflict) and the use of user-fees (World Bank, 2002: 12-13).

While the current debate around poverty reduction specifically targets primary education, for growth to take hold, secondary and tertiary education are also important:

“The social benefits of primary education— such as lower fertility and improved health for mothers and children—have made universal primary education a worldwide goal. But developing countries cannot ignore secondary and post-secondary education, though the social benefits from investments at these levels are less well documented.” (UNDP, 2001: 90).

However, if there are market and institutional failures which pose significant barriers to the establishment of primary education, these are even more pervasive when considering the secondary and tertiary level:

“Tertiary education is expensive—too expensive for many poor countries.” (UNDP, 2001: 90).

The response from the multilateral development institutions is to reorientate provision to allow the private sector to provide significant proportions of secondary and tertiary education (UNDP, 2001: 90). However, without a certain level of development, market failures are likely to be as or more pervasive than state and institutional failures, and market incentives are unlikely to provide the broader role of education in fostering the continuation of the collective knowledge of society (see below).

In support of this poverty reduction approach the Bank and IMF have adopted a joint programme of only granting concessional assistance through a small number of programmes. Conditions for approval include the technical credibility of the strategy and domestic ownership, demonstrated through support for and participation of NGOs and others in the production of the strategy (World Bank, 2003a). As the Bank acknowledges this clearly creates technical demands on the host LDC (World Bank, 2003b).

This approach recognises that successful growth and integration into the world market requires that market failures be overcome, particularly with regard to freeing sufficient labour time from subsistence activities to engage in the formal labour market. This can only occur where the poor are healthy and skilled enough to do so. To ensure that this is the case a number of social and institutional practices must be in place. The poor must be identified and their problems analysed, agriculture must be reformed to generate surpluses that can be sold, social institutions must be established, schools and clinics must be staffed, educational and healthcare strategies and immunization programmes developed and rolled out and infrastructure provided. Moreover, the external financial assistance necessary to provide all

this brings with it the conditionality that well developed strategies and plans must be in place prior to receiving support. All of these tasks require large numbers of highly skilled professionals, as the recent Africa Commission report underlines:

“Qualified professional staff are essential to all forms of development. The delivery of health, education and other services depends on them. They are crucial for collecting and managing data, and debating and developing good policies, based on the evidence of what works and what does not. They are essential to implementing those policies and to monitoring how they are put into effect. Scientifically and technically proficient staff are needed to identify opportunities arising from innovation and scientific discoveries and to develop effective policy in areas such as science, trade and resource management. Especially in the private sector, these particular skills are key to performance and innovation.” (Commission for Africa, 2005:130).

This means that the loss of high-skilled labour acts as a barrier to establishing the essential groundwork for development, even if there is no immediate and direct economic loss. This means that where there is insufficient capacity to absorb higher level skills in directly productive economic activity their loss represents a barrier to the future *potential* for development.

However, even where these social, institutional and human capital barriers to nurturing development can be overcome there are important further challenges, especially where development has been a ‘stop-go’ cyclical experience. This is because of the important relationship between development and migration. Severely under-developed – subsistence – economies not only lack the necessary features for development but they lack the conditions to facilitate migration also. This is because migration is actually part and parcel of the developmental path as much as it is a response to a lack of development. As Massey argues:

“International migrants do not come from poor, isolated places that are disconnected from world markets, but from regions and nations that are undergoing rapid change and development as a result of their incorporation into global trade, information and production networks. In the short run international migration does not stem from a lack of economic development but from development itself” (Massey, 1998: 277).

The essential logic of Massey’s argument is that successful agricultural development – the replacement of subsistence agriculture with production for markets – results from increasing rural labour productivity. This releases labour from agricultural production, drives urbanisation which, in turn, facilitates international migration, through integration in a cash economy, the accumulation of sufficient human (skills etc) and financial capital, access to transport routes and information flows about where to migrate to and how. By definition high skilled labour migration is sourced from social groups that have achieved a degree of success within this process, having had access to a higher than average amount of education. This leads to analyses of a developmental migration band, consisting not of the poorest countries who witness very small migrant flows⁴ but a middle tier of countries that have achieved a certain level of development sufficient to enable the needed level of urbanisation, education and resource accumulation (Council of the European Union, 2002). Above this band a further tier of more affluent countries also witness lower levels of labour migration because the incentive effects of higher wages abroad need to be set against the costs of migration, especially disruption of personal and social ties and uncertainty (Oleson, 2003; Faini and Venturini, 1993).

This finding has important implications for policy thinking related to migration and development. By concentrating development assistance and efforts at institutional and social transformation on the least developed countries international migration may actually

⁴ Where these flows are larger they tend to be refugee rather than migration flows.

increase. Mitigating policies are therefore required to ensure that human capital loss through 'brain drain' does not effect an in-built barrier or drag to development beyond a certain level, especially in regions like Sub-Saharan Africa (UNDESA, 2002). For instance the costs of technical assistance from foreign nationals makes up a substantial part of overall development assistance. At the African Regional Conference on Brain Drain in 2000 the Deputy Director of the UN Economic Commission for Africa cited evidence of 100,000 foreign nationals employed across the continent at a cost of US\$4bn or 35% of all development assistance (Barka, 2000).

This naturally raises the question (Olesen, 2003) of whether the international community is politically committed to sanction the huge transfer of resources to the developing world to both facilitate development and secure opportunities for high skilled and highly educated 'potential migrants' to remain at home and therefore facilitating further development.

2.6 Education, Brain Drain and Social Development

The discussion above, following the general line of the literature on development (see above) and 'brain drain' (see below), focuses on the loss of highly educated individuals as bearers of skills, defined as more or less useful economic inputs. It thus reduces the overall implications of migration to the cost in terms of economic growth now or in the future. This was recognised in the development debate in 1990 by the UNDP whose first Human Development Report warned that:

"Human development efforts in many developing countries have been severely squeezed by the economic crisis of the 1980s and the ensuing adjustment programmes. Recent development experience is thus a powerful reminder that the expansion of output and wealth is only a means. The end of development must be human well-being. How to relate the means to the ultimate end should once again become the central focus of development analysis and planning". (UNDP, 1990: 10).

Following this line of argument, education is more than the provision of skills as economic inputs. It is a process of re-learning the collective knowledge of society for each successive generation and learning from social and political mistakes. It is thus a core mechanism in cultural reproduction and historical social learning and development:

"...since culture cannot be genetically inherited, everything known has to be re-learnt by each new generation. This would be true even of so called 'primitive societies' that anthropology assumed existed without history. However, learning might also be posed in terms of how societies learn from historical experience; as for example how Germany and other countries learnt from the experience of fascism, or from the ultimate failure of the socialist experience in the former-Soviet Union, or the lessons we have not begun to learn in Britain from the experience of empire" (Ainley, 2001).

As such, the loss of highly *educated* individuals is a loss of collective social knowledge vested by society in them. This is important because the increased focus of benefits to individuals holding skills and/or knowledge that are seen as beneficial to key economic sectors tends to ignore the broader importance of skills and knowledge. For instance, Okome (2002) argues that Africa and Africans "have a corpus of knowledge from which the world can learn", but that this is not always contained within economic inputs.

On an individual basis it is a loss to a family or a community, to personal and social ties:

"Emigration has a social cost in the home countries that should not be underestimated. How many families in the Philippines have been broken up by the mother or father leaving to go to work in the West? Who is interested in the rising materialism of the relatives left behind in the home country when they receive money sent home by the migrant? The consequences are all the more serious when the women emigrate. For instance, in Sri Lanka, more than 500,000 women work abroad, mainly in Gulf countries. It is often their children who leave school early or who fall victim to all kinds of abuses." (ICFTU, 2004: 3).

While the protection of freedom of individual choice is clearly important, it also worth noting that economic migration (to find work) is not a choice taken freely in an open context. Rather it is a choice constrained by limited available options, all of which have significant consequences. The task of development then is not just to engender growth but to create life chances and opportunities. Highly educated migration is not just an economic loss but a social, political and individual loss.

2.7 Academic Labour: Special Case

The majority of the literature focuses broadly on labour migration or high skilled labour migration. However, academic labour is specifically important because it spans a number of functions that are important in the preceding discussion of economic growth, the provision of the necessary underlying conditions to make growth and poverty reduction possible. In the early post-colonial period higher education was thus crucially linked to development in the ideas of both modernisation and human capital theories of development. The crucial link was that higher education could provide the means to inculcate a western style of social and political development and that it could build the necessary human capital to enable economic development (Agbo, 2003). More recently, the literature on growth and development has highlighted the importance of the core functions of HE including pure research and innovation, the translation of innovation into useful or commercially exploitable ideas, products, organisational development and planning. Further, academic labour is important in building the human capital of others through teaching and more specifically still through teaching teachers, healthcare workers and other vital professionals who in turn can help to build institutional, social and human capacity for development (Oni, 2000; Teffera and Altbachl, 2004). Clearly the extent to which all or some of these functions are present in migrating labour is dependent on the extent to which individual migrants fulfil each of these functions. Clearly, not all academic labour will fulfil all of these functions. However, the loss of academic labour on aggregate tends to suggest the loss of these functions to the sender economy.

3. Factors Determining the Impact of the Brain Drain on LDCs

3.1 Reasons for Migration

There are a variety of approaches to understanding the reasons for high skilled migration. Neo-classical economic and growth theory tend to focus on the importance of scarcity, choice and market relations defining supply and demand. In this context migration is the product of the aggregate effects of choices of rational individuals seeking the most advantageous result for themselves and their families. In developed economies rational actors cluster toward higher paid, higher value jobs. This then allows foreign labour to move toward places of high labour demand where there are wage differentials between countries. The propensity for migration then is simply shaped by the potential for employment and the differential wage rates between countries (Massey et al., 1994). Other factors are also important in allowing markets to work in this way, such as information flow to bring demand and supply together. High skilled migration is simply an extension of this where scientists and academics from the developing world move to the developed world to take up posts that either cannot be filled because of a skills shortage (where markets have failed to incentivise domestic skill production). Since individuals do not make rational choices in perfect market contexts, other factors may also shape their decisions. For instance, labour migration may also be part of household strategies for diversification or coping strategies allowing calculations of the likelihood and potential scale of remittances to also enter the equation. The basic thrust of the argument, however, is that differential – segmented – markets create push/pull factors which shape the migration decisions of rational actors seeking to maximise their own position.

Logan (2000) argues that this is simplistic and that in fact a range of complex “professional, institutional, cultural, economic, political and geographic” factors shape such decisions, a finding also supported by Papademetriou (1991). Dzvimbo (2003) augments this list with a sharper emphasis on “factors such as an environment conducive to professional autonomy in universities, research institutes and the workplace in general; and personality, goals, and personal history, which accounts for individual differences”.

Others (Dzvimbo, 2003; Dovlo, 2003; El-Khawas, 2004; Odunsi, 1996; Udogu, 2004; Council of the European Union, 2002) distinguish between ‘push’ and ‘pull’ factors. Push factors include a lack of life chances, lower living standards, political and social instability or repression, lack of available opportunities to fruitfully utilise skills in the home country, natural disasters and ecological deterioration. Relatively advantageous conditions in host countries act as pull factors such as higher wages, job opportunities, good working conditions and access to research funding, freedom from political instability or oppression. In these latter instances, Harris argues that skilled migration is as much a “vote of no confidence” in sender countries as it is exploitation of human capital resources by firms and governments in the developed world (Harris, 2004). These push factors are augmented by a combination of

general economic, technological and demographic change in developed economies creating skills gaps in specific sectors such as education, health or in innovative industries. The ICFTU (2004a) report that “almost half of newly recruited nurses in the UK in 2001-2 came from foreign countries, such as the Philippines, India or Africa”.

3.2 The Scale and Cost of Lost Labour and Human Capital

A host of commentators have noted that the existence and significance of a ‘Brain Drain’ is difficult to quantify because of the paucity of data on international migration and the poor quality of the data that does exist (Carrington and Detragiache, 1998; Adams, 2003:9). This is a further problem for this study because data on international stocks and flows is even less detailed in terms of occupational status, making it virtually impossible to estimate flows and stocks of academic labour in the UK or even OECD.

The OECD publishes an annual publication entitled *Trends in International Migration*, but this also does not adequately disaggregate beyond highest level of qualification, where the categories are primary, secondary and tertiary. Others, such as Carrington and Detragiache (1998) have tried to extrapolate from the OECD data to provide more detail on the qualifications and skills of migrants into OECD countries and their source countries but the data is severely limited and the methodologies (many of the problems are recognised by Carrington and Detragiache themselves) they use make it likely to be unreliable. For instance they assume similar patterns of migration to all OECD as for the United States, yet migration is shaped by a range of factors including linguistic ties, existing diaspora networks and former colonial links which make such assumptions potentially distorting. Moreover, the authors themselves note that “in interpreting our numbers on the brain drain, it is important to recognize that some or all of the education of some migrants may have taken place in the United States”. In any case they were only able to break the data down to immigrants with primary, secondary or tertiary education.

Despite these problems there have been attempts to estimate the scale of high-skilled lost labour through migration. For instance, the UN Economic Commission for Africa has suggested the following figures:

“Africa lost 60,000 professionals (doctors, university lecturers, engineers, etc.) between 1985 and 1990. The emigration of doctors and other experts from Africa is the most striking illustration of this problem. According to the 1993 UNDP Human Development Report, there are more than 21,000 Nigerian doctors practising in the United States alone while Nigeria’s health system suffers from an acute lack of medical personnel; 60 per cent of all Ghanaian doctors trained locally in the 1980s had left the country, while in Sudan, 17 per cent of doctors and dentists, 20 per cent of university lecturers, 30 per cent of engineers in 1978 alone had gone to work abroad.” (Barka, 2000).

In fact, on some estimates there are more African scientists and engineers working in the US than there are in Africa (El-Khawas, 2004). Udogu (2004) summarises the scale of the problem:

“it is estimated that in 2000, there were 92,435 Africans in New York City, and 25,776 in Montgomery, Alabama. By 2003 there were 20,000 Africans in Atlanta, Georgia. When figures from Los Angeles, Chicago, Miami, Dallas and Houston, Texas and elsewhere in the United States are added, the number of contemporary African immigrants could jump to the millions. Europe also attracts some of the best and brightest African intelligentsia. In fact, there are over 100,000 highly educated professionals in the US alone, of which, for the purpose of illustration, there are over 21,000 Nigerian physicians, not to mention the fact that there are more Sierra-Leonean doctors practicing in the Chicago area than in Sierra-Leone itself. Arguably, these are Africans who, if they had remained in Africa, could ably assist other Africans in engendering economic take-off in the continent. The contributions of Africa’s immigrant intelligentsia to development in the region would probably have been so

phenomenal that the current clamor about Africa's marginalization and underdevelopment would not have reached its present crescendo."

Extrapolating from US data on research active scientists and engineers, Meyer and Brown (1999) argue that

"A realistic estimation of the S&E [scientists and engineers] originally from a developing country and involved today specifically in R&D activities in the U.S.A. is about 170,000...the number of S&E originally from a developing country and working in R&D in the "triad" [US, EU and Japan] would be close to 400,000 people. In comparison, the total – home based – R&D personnel for all developing countries amount to 1,224,000 S&E. One must not forget that the "triad" does not include countries such as Australia, Canada, New Zealand and Switzerland, among others, which are also well known for their high rates of highly skilled foreigners. Therefore, to assume that the R&D workforce originally from developing countries and currently employed in highly industrialized countries represents one third of the home-based one, is a reasonable and rather low, hypothesis."

However, the volume of labour is only one determinant of output. Equally important is labour productivity. Following this line of argument, Meyer and Brown (1999) argue that differential access to resources, infrastructure and technology means that the intellectual diaspora is also relatively more productive than those who remain in the developing countries, and significantly so:

"The expatriate scientists and engineers to whom it is referred here work in an environment which is far better than the one of their peers in the country of origin. They indeed have access to funding, technical support, equipment, scientific networks, experimental conditions, and many other resources which are much more limited at home. The productivity of the "triad" R&D sector is, for instance, 4.5 times higher in terms of publications and 10 times higher in terms of patents than it is in the same sector for the developing world."

In trying to quantify the lost investment in human development the United Nations Development Programme have quantified the loss of IT professionals from India to the US alone over a three year period at around \$6bn:

"Consider just the public spending on students graduating from India's elite institutes of technology. Operating costs per student run about \$2,000 a year, or about \$8,000 for a four-year programme. Adding in spending on fixed capital, based on the replacement costs of physical facilities, brings the total cost of training each student to \$15,000–20,000. Multiply that by 100,000, the number of professionals expected to leave India each year for the next three years. At the high end, it brings the resource loss to \$2 billion a year." (UNDP, 2001: 92).

A similar analysis for South Africa estimates that the migration of graduates was lowering GDP by 0.37% and cost 67.8bn Rand in lost investments in human capital during 1997. Added to this is the loss of real financial assets which move with their owners. The same authors estimate that the loss to South Africa represented a further 11bn Rand in the period 1994-1997. Finally, they highlight the wage inflation and recruitment effects left behind as costing around 2.5bn Rand per year and also the assumed lower labour productivity that results from human capital loss (Kaplan, Meyer and Brown, 1999).

3.3 Lost Labour and Mitigating Factors

A major recent project managed by Professor Alan Findlay for the International Labour Organisation (ILO) and funded by the UK Department for International Development (DfID) considered the impact of 'skilled labour migration from developing countries'. Lowell and Findlay (2001), summarising the projects' findings for potential economic development find that while the overall effect of high skilled migration from LDCs is likely to have negative impacts on their potential for economic growth there are a number of mitigating or offsetting factors such as education inducement effects and 'feedback' effects such as return

migration, technology transfer and foreign exchange remittance. Where these factors prove significant, and especially where migration is temporary, there is some debate in the literature over whether notions of 'brain drain' and 'brain gain' should be replaced with brain 'circulation' or exchange (Lowell and Findlay, 2001; Hatekenaka, 2004).

Education Inducement Effects

A small amount of skilled migration may have the effect of stimulating domestic education by highlighting incentives in the form of higher wage returns to education. This finding is supported by Mountford (1997) who argues that in very specific circumstances the potential for a small amount of emigration will induce higher enrolments in education because of the domestic wage inflation effects demonstrated by Bhagwati and Hamada (1974) and because of the possibility of migration. However, Mountford's analysis is derived from an analytical model which assumes that education supply is available. Nowhere in his analysis does he consider how the operation of his model would be effected by chronic poverty, ill-health, conflict or weak institutions effecting both the supply of education and the capacity of the majority of the population to access it. Neither does he consider the potential role of skills lost to migration in mitigating each of these factors.

Technology Transfer

Findlay and Lowell emphasise the importance of skills and technical know-how and the potential for short-term migration to enhance these. For when students study abroad they may return with enhanced skills, effecting a knowledge and skills transfer (Lowell and Findlay, 2001).

Specific situations where migrants may return to their host country are where there is a rapid improvement in the quality of governance or in development in the sender country. Contemporary examples might include Chile after the fall of Pinochet, Spain after the death of Franco and Afghanistan after the deposition of the Taliban regime (Oleson, 2003).

However, the data on migration does not adequately quantify what proportion of migrants subsequently return. The empirical country case studies from the DfID/ILO project suggest that those emigrants who do return, tend to be the lower skilled, rather than the highly educated who find it easier to integrate into the host economy (Albuero and Abella, 2001; Verhaal, 2001). There is little data to show whether or not high skilled emigrants return with higher skills. What information is available with regard to students abroad suggests a high proportion of 'leakage' to the recipient economy with "only half of the foreign students receiving a doctorate or a post-doctorate in the latter return to their native country within two years" (Meyer and Brown, 1999).

The second, feedback effect - technology transfer - from ex-patriots abroad could also be of significant benefit to sender economies (Lowell, 2001: 22). Many countries have tried to facilitate such transfers through more or less formal networks and organisations such as the South African Network of Skills Abroad (SANSA) (Bhorat et al., 2002) and similar projects in both Uruguay and Argentina (Pellegrino, 2002). Lowell (2001) also notes that there are a large and growing number of informal and autonomously organised academic networks of this nature, although there is no evaluation of their developmental impact. However, the extent to which such alliances are useful will depend on the capacity of sender LDCs to absorb transfers. This is also the case with regard to technology transfer from FDI (Girma and Gorg, 2002).

Remittances

The most often cited 'feedback' effect is that of remittances from migrants working abroad. For many countries such remittances are a major source of foreign exchange (Adams, 2003:

4). Findlay and Lowell claim that “most international migrants choose to migrate with the intention of sending part of their earnings back to the country of origin to help support their immediate or extended family” (2001: 9). The World Bank (2003) has estimated that these flows are significant, being the second most important source of foreign currency for developing countries and exceeding aid flows. Adams (2003: 4-6) has used IMF Balance of Payments data to estimate ‘official’ flows of remittances for 24 developing countries. This analysis showed that among the 24 countries in the study, India (US\$7.994 billion), Mexico (US\$5.816 billion) and Turkey (US\$4.035 billion) received the largest remittances. Data for LDCs in the sample were also significant. Adams also cites unpublished IMF research that suggests total informal remittance flows are also substantial at an estimated US\$10bn annually, though this figure is substantially below estimations for earlier periods (US\$35bn), with the change attributed to the decline in black market exchange premiums in many countries over the last decade. Puri and Ritzema (1999) estimated the scale of unofficial remittance flows to a number of countries and concluded that the proportion of unofficial to official remittances varied from as low as 8% to as high as 85%.

Other estimates have suggested that the scale of remittances is much larger than this. For instance, Abella (1991) estimated nearly fifteen years ago that to replace the capital inflow of remittances to five Asian labour sending countries would require US\$55bn of alternative flows. To put this in perspective, FDI inflows to these countries at that time were around \$5bn (Oleson, 2003). Gemmeltoft (2003) has suggested that total migrants remittances, even on the cautious ‘official’ data, exceed US\$100bn though some of this is to developed countries and some of it is between developing countries. His analysis suggests that it is middle-income countries that benefit the most from remittances, but that they make up a substantial proportion of income for low-income countries. Significantly, he claims that the volume of remittances exceeds aid flows for all developing countries, though this is not the case for the poorest most aid dependant states. These findings would offer some support to the arguments raised above about the relationship between migration and development. Gemmeltoft’s more detailed country data shows that Lesotho is the most remittance dependent nation with these inflows making up 37% of GDP. Other remittance dependent states include Jordan (21%), Somoa (21%), Yemen (18%) and Cape Verde (18%). Regionally, his data shows that remittances are highest as a proportion of national income in the Caribbean, Middle East and North Africa. **Table 3** shows Gemmeltoft’s estimations of the relative scale of remittance flows to the largest receiving DCs.

Taylor (1999) finds that total world remittances for 1995 amounted to more than \$1trillion with a third of this figure being worker remittances and a further quarter being salary payments.⁵ However, like Adams, Taylor also finds that the data reveals that remittances are unequal between different sender states. For instance, in Cape Verde remittances represented 16 times the value of other exports in 1994, a pattern he cites as familiar in developing island states. He also cites the value of remittances for the Dominican Republic as being in excess of exports, while being 75% of exports in Egypt, El Salvador and Jordan. He argues that remittance behaviour will be determined by a range of factors including economic and savings policies in host and sender countries, exchange rates, payment facilities and their marginal cost (1999: 68-9).

⁵ Taylor also notes that these two categories are used interchangeably by many developing countries when recording remittances, meaning that they should be taken together in analysis.

Table 3: Gemmeltoft's Estimation of Relative Scale of Remittance Flows to Largest Receiving Developing Countries (1995-1999, Total)

Total Remittances Country	US\$m	Remittances per US\$ aid Country	US\$	Remittances/GDP Country	%	Remittances per capita Country	US\$
India	45.9	Turkey	39.3	Lesotho	37	Antigua and Barbuda	3,997
Phillipines	29.1	Mexico	33.9	Jordan	21	Jordan	1,714
Mexico	28	Costa Rica	23.9	Samoa	21	Jamaica	1,393
Turkey	21	Jamaica	15.4	Yemen	18	Samoa	1,305
Egypt	16.6	Barbados	14.7	Cape Verde	18	Barbados	1,212
Morocco	10	Dominican Republic	9.8	Albania	16	Cape Verde	1,105
Brazil	9.3	Croatia	9.3	Jamaica	13	Grenada	1,071
Thailand	8	Phillipines	7.8	El Salvador	11	El Salvador	1,027
Pakistan	7.8	Antigua and Barbuda	6.9	Georgia	10	Lesotho	863
Jordan	7.7	Nigeria	6.8	Antigua and Barbuda	9	Dominica	771
Bangladesh	7.5	Brazil	6.5	Nicaragua	8	Dominican Republic	738
China	7.5	India	5.5	Dominican Republic	8	St Lucia	708
Nigeria	6.5	El Salvador	4.9	Philippines	8	St Vincent and the Grenadines	689
El Salvador	6.1	Tunisia	4.6	Grenada	7	Albania	662
Dominican Republic	6	Lesotho	4.3	Sri Lanka	6	Croatia	640

Gemmeltoft (2003: 189).

While the size of remittance flows is interesting and significant, the more important question relates to their impact on development. On the one hand they may filter into the domestic economy producing multiplier effects or on the other they may enhance import dependency, drive inflation and where they accumulate in the hands of already wealthy families may also increase inequality in the sender country.

Djajic (1986) notes that remittances can be beneficial for remaining residents if the scale of remittances (or indeed expenditure of migrants on return visits) is of sufficient scale to leave the capital-labour ratio unchanged. Quibra (1997) concurs but goes further to note that the type of emigration will determine the impact of remittances on the domestic income distribution.

Work by Stark (1984), Stark and Lucas (1988), Stark and Taylor (1989; 1991) and Stark, Taylor and Yitzahki (1991) suggests that the inducement to migrate is partly driven by the potential for remittances as a result of a desire to enhance a family or household's relative economic position within a defined community. Taylor's later work (1999) goes beyond this, suggesting that migration is not an individualised act but a conscious economic strategy on the part of households, extended families and wider communities. In this work, migration is not so much driven by relative deprivation but is induced by the lack of ability to absorb skills and productive endeavour in the sender locality and the possibility of higher earnings elsewhere. In either case, remittances are part of the plan and, despite social, economic and institutional barriers (which were part of the reason for migration in the first place) remittances can, over time, help to provide sufficient insulation from risks (droughts, floods, crop failures etc) to enable investment, particularly in rural production. In Taylor's (1999) model, remittances may be part of a self-organised strategy leading to the generation of surpluses for sale and the partial release of agricultural labour from subsistence work to the cash economy. Reviewing a substantial amount of empirical literature, he contends that contrary to expectations, remittances can be, and in many places are, an important source of finance for indigenous development and further human development (for instance school fees).

The limitations of Taylor's approach, however, are explicitly noted in the way that his argument is constructed. First he concludes that the capacity of sender units (households, families or communities) to absorb remittances is low, given that this was the initial reason for migration, thus hindering the multiplier effects that can be derived from them. He cites a variety of multiplier figures, which in the early period are almost entirely below the value of the transfer, though the situation is reversed with a given level of development. Second, the beneficial impacts he posits are also dependent on the foundation of his argument: that migration was in the first place a coherent and conscious strategy for development in the sender area rather than a mere bid for alternative subsistence. Third, Taylor's theoretical argument, drawn from his own earlier work and that of associates (e.g. Stark and Yitzahki), and evidence largely relate to rural sender contexts and he notes that evidence suggests that the multiplier impact of remittances to urban areas is less significant because urban recipients are more likely to use them to purchase imports (partly because of increased access to these markets).

This limitation is more important still because as already argued above, international migrant labour, and especially high skilled labour is much more likely to come from urban areas (Lowell and Findlay, 2001: 9; Massey, 1998; Olesen, 2003). Additionally, high skilled labour may, by definition, be more likely to come from relatively affluent family/household units that have been able to invest in education in the past. As such the marginal utility of the additional income may be less significant and more likely to be spent on luxury items and imports. Some studies have suggested that this relationship between remittances and consumption can also generate inflation, with Korea and Pakistan cited as examples (see Puri and Ritzeme, 1999). The ICFTU (2004) also note the potential for inflationary pressures arising from remittance-funded consumer spending, citing the example of Yélimané in Mali:

“Pure consumption can have perverse effects. In Yélimané, Mali, the remittance of funds has caused unexpected inflation, making the city one of the most expensive places to live in Mali. Its inhabitants are big spenders, live in opulent villas and are pushing prices up – so much so that although five new schools have been created, they have been deserted by the teachers”.

Other arguments about the potentially undesirable impact of remittances relate to unpredictability and the incentive that they create for developing country governments to encourage the migration of skills for more immediate financing of imports and social stability rather than facing the longer-run choice of channelling their skills and labour into developmental activities at home. Olesen (2003) notes the quandary posed for developing country governments. An exception to these arguments is where remittances are channelled into productive investments or savings, thereby contributing to the development of local capital markets, themselves a major element in securing development in the future (see Puri and Ritzeme, 1999). However, if this were both possible and efficient (i.e. more productive than channelling migrants’ income into savings in the host country) then it would suggest a certain level of development in the sender country, with properly functioning capital markets. Lowell and Findlay (2001) note that there is insufficient information available on remittance behaviour by skilled migrants and on higher earners as distinct groups. In turn Quibra (1997) notes the complex contextual factors which determine whether or not migration and remittances will be beneficial to the aggregate welfare.

Table 4: Puri and Ritzeme's Remittance Cost/Benefit Matrix

Benefits	Costs
Ease foreign exchange constraints and improve balance of payments	Are unpredictable
Permit imports of capital goods and raw materials for industrial development	Are spent on consumer goods which increases demand, increases inflation and pushes up wage levels.
Are potential source of savings and investment for capital formation and development	Result in little or no investment in capital generating activities
Net addition to resources	High import content of consumer demand increases dependency on imports and exacerbates BOP problems
Raise the immediate standard of living of recipients	Replace other sources of income, thereby increasing dependency, eroding good work habits and heightening potential negative effects of return migration
Improve income distribution (if poorer/less skilled migrate)	Are spent on 'unproductive' or 'personal' investment (e.g. real state, housing)
	Create envy and resentment and induce consumption spending among non-migrants

4. The Brain Drain and Africa

The problem of Brain Drain is particularly acute for Africa, with the Economic Commission for Africa (ECA) arguing that the continent loses a higher proportion of its skilled labour force to out-migration than do other developing country regions. The ECA also argues that the most important developmental challenge for Africa is the bridging of the labour-force gap with developing countries in other regions (UNECA, 2004). The recent Commission for Africa report concurs, arguing:

“Africa has been lacking skilled men and women in all these spheres and fundamental to this shortage is the loss of much of Africa’s pool of skills to the developed world. Around 70 per cent of Ghanaian medical officers trained in the 1990s have left and it has been estimated that there are more African scientists and engineers working in the USA than in the whole of Africa.” (Commission for Africa, 2005:130).

The report then goes on to suggest that “the shortage starts with higher education”. However:

“many of Africa’s higher education institutions are still in a state of crisis. They lack physical infrastructure, such as internet access, libraries, textbooks, equipment, laboratories and classroom space. Senegal’s Université Cheikh Ata Diop built for 13,000 students now houses over 23,000. They lack human resources, such as teachers, lecturers, and administrative and managerial systems. Unattractive conditions, brain drain and HIV and AIDS are depleting capacity and faculties are ageing. ... Yet demand for higher education is increasing: in 2000, Nigeria had the capacity to accept only 12 per cent of qualified candidates. Hit by these pressures and a lack of funding, the research capacity of Africa’s institutes has declined. The capacity that does exist is not being used efficiently, as there is limited collaboration, and human and financial resources are spread thinly” (Ibid:130).

These problems are doubly significant since Africa has effectively been caught up in a vicious cycle in which a lack of development, political instability and crisis (Dzvimbo, 2003) has contributed as a push factor to brain drain, further undermining the conditions for development (Dolvo, 2003; Okome, 2002). In addition to this, tight labour markets, skill shortages and the demand for technology-led growth in developed countries have generated considerable pull factors with some recruitment specifically targeted at African states (El-Khawas, 2004). Okome argues that push and pull factors in relation to African migration are inseparable and arise from dominant developments in the global economy. While the causal variables may be the same – globalisation, indebtedness, external intervention in African economies and at the time of writing in 2002 a cyclical global economic downturn – the effects can be felt differently between places and over time (2002).

Logan (1987) argues that sub-Saharan African countries that exported large amounts of experts to the United States during the 1970s and 80s shared similar characteristics. He argues that they tended to have a large population, relatively strong education systems, be pro-western in orientation (Logan’s research took place during the Cold War battle for Africa), have links with former colonial metropolises, language similarities with the receiving states, a tendency toward poor governance and social dislocation (he does not mention the obvious budget cuts) resulting from structural adjustment. These findings are also supported by

research for the World Bank that shows that structural adjustment, contraction of university capacity, resulting student unrest and government intervention all shaped the migration of academics in the 1980s and early 1990s (Blair and Jordan, 1994). Logan also argues that the scale of the African brain drain (or, as he calls it, reverse transfer of technology) gathered pace during the 1980s and 1990s, and that the continent is more dependent on 'immigrant experts' than any other (1992). Taken together these features, mean that "there is little doubt that RTT [Reverse Transfer of Technology] poses serious threats for African development in the twenty first Century" (2000: 442).

Logan (2000) has also conducted survey research with academics in Zimbabwe in an attempt to identify the causal factors behind the country's transition from being a magnet for skilled workers from elsewhere in Africa (and from the Zimbabwean diaspora abroad) to being in a position of net emigration. Logan explains the past attraction of Zimbabwe to academics from abroad as resulting from the optimism associated with the early independence period, democratisation and purposeful nation-building programmes including comparatively (with other countries in the region) high academic salaries. However, he also highlights the more recent economic stagnation, social unrest and political repression. The sample group in Logan's survey were roughly equally split between those who preferred to stay and those who expressed a preference to leave. The latter group tended to be younger, less experienced and to be less satisfied with their salaries and terms and conditions. This group also cite poor research and teaching facilities as significant causes of disenchantment. Interestingly, however, those expressing a desire to leave did not necessarily wish to go to destinations in the developed world. Though Britain, the US, Germany, France, Italy, Canada and Australia all featured in the top twelve, other (Southern) African nations were the most popular, particularly Mozambique, South Africa and Botswana.

Edokat (2000), documents the evolution of the higher education system in Cameroon from one university and 213 students in 1960/1 to six universities, more than 45,000 students and a staff of around 2,000 in 1998. He argues that while salary bonuses for academic staff between 1976 and 1993 helped to incentivise academia as a profession, budget cuts imposed via Structural Adjustment Plans in 1993 ended these. Since then Cameroon has faced difficulty in retaining academics in general and particularly in sciences, engineering and most of all in economics, where he cites lecturers with PhDs as extremely rare. Addressing the motivations for leaving, Edokat argues that the overall level of funding and its implications for wages, conditions and teaching and research infrastructure (laboratories, libraries, offices, computers) as being the primary variable, with many academics indicating in survey responses that they wish to leave, but would stay if there were improvements in these areas. In addition, he argues that freedom from political repression and academic freedom are also crucial variables.

Ibra Diene, General Secretary of the Senegalese Union of Higher Education Teachers argues that the brain drain, spurred by poor conditions of service in developing countries, is effecting a resource transfer from developing to developed countries:

"By failing to provide decent conditions for their lecturers, poor countries are effectively funding universities in rich countries, since they are releasing staff virtually free of charge who are trained and often have considerable expertise and experience" (ICFTU, 2004b).

Diene' also highlights the importance of pull-push factors related to working conditions and resources such as "research facilities, scientific and intellectual stimulus, greater academic freedom and better career development".

Oni (2000) highlights the historical importance of universities in building domestic institutional and economic capacity in Nigeria. Again he highlights the massive expansion of the HE system in Nigeria since its establishment in 1948 at Ibadan University with 104 students. By 1999 this had risen to 39 universities, 235,000 students and more than 12,300 academic staff. Despite this, he also documents unmet demand with growing numbers of failed

applications, to the extent that only 16% of applications were accepted by 1991, implying serious under-supply. Even with the low proportion of admissions to applications lecturer/student ratios are more than double those in the UK on UNESCO data. Again noting the impact of restrictive budgets, especially in the context of austerity-based adjustment measures, he compares salary levels for academic staff in Nigeria, Ghana, Ethiopia and South Africa, concluding that a professor in Nigeria earns 1% of a professor's salary in South Africa. As important is the difference between academic salaries and those of other professions in Nigeria, particularly in government, the civil service and oil. He documents the frequent attempts of Nigerian academics and academic trade unions to confront the government over the impact of low levels of funding on staff salaries, morale and the quality of teaching and research infrastructure. It is the combination of these factors and the typically authoritarian responses of Nigerian governments (sequestering Union funds, proscribing further action and harassment, arrest and detention of union leaders) which leads to brain-drain tendencies:

“As a result of their inability to maintain a decent standard of living with their salaries, some have resorted to voting with their feet to look for better opportunities in the private sector or as consultants to international organisations or government; while others have either migrated to other countries or engaged in trading. Under the military regime some have entered into the bureaucracy as ministers, special advisers to governors and heads of government parastatals. For the period 1988 and 1990 when the fall in government revenue was very low and inflation was high (41%) the National Universities Commission confirmed the separation of over 1000 lecturers from the universities” (Oni, 2000).

Okome (2002) also notes the importance of political repression as a driving factor in emigration from the country during the 1980s and 90s.

While the tendency is to think of the brain drain as defined by movement of skilled professionals to developed countries, Oni notes the loss of academics to South Africa and the middle east as well as ‘internal brain drain’ or the movement of academics and potential academics from higher education to other sectors, with the consequence that their potential wider role in capacity building and development is impaired. Okome highlights the complex interplay of policies on the scale and type of migration between developing countries and between developing and developed countries. For instance he suggests that currency policies (which are often impacted on by decisions in developed countries because of ‘pegging’ to the dollar, Franc or now Euro) can generate different types of movement:

“By the end of the 1980s, with France deporting illegal immigrants and denying automatic citizenship to the offspring of immigrants that were born in within its borders, and the French decision to cease shoring up the currencies of its West African allies, the effects of the economic malaise that beset the African continent were now intensified in the CFA zone as well. In January 1994, France devalued the CFA franc, a currency that is used in 14 West and Central African countries. Nigeria immediately became overwhelmingly attractive to immigrants from West and Central African currencies for whom its currency was now worth 50 percent more because it was pegged to the U.S. dollar. Curiously, in the same years, Nigerians were hell-bent on leaving their country if they could because the devaluation of the Naira (the Nigerian currency) had also down-graded their standard of living and quality of life.”

Kómoláfé (2003) argues that:

“Nigerian migrants move predominantly to the countries where they are more likely to adjust rapidly in terms of being able to understand the host country's language, to secure gainful employment and to reunite with members of their family, friends or associate with other people from their country of origin”.

As such he argues that the UK is a major destination for Nigerian migrants, as does Okome (2002). Kómoláfé also finds that migration from Nigeria has been boosted by frequent rounds of economic and social dislocation and resort to military government.

Wadda (2000) notes that academic brain drain has not been a prominent feature in the Gambia because of the absence, until recently, of a university in the country. Instead the loss of skilled professionals has tended to focus on the civil service and government, with poor management, low pay and insecure employment being contributory factors. However, a related problem has been the permanent loss of students sent abroad to study. Even with the application of punitive bonds to encourage return, “significant proportions” seek to remain in their host country once their studies are completed.

Skilled migration from developing countries does not only present a developmental capacity problem in relation to higher education. For instance Dolvo (2003) demonstrates the major problems facing the health sector in Ghana, with a large number of Doctors, other professionals and nurses leaving the country for Europe, especially the UK, where demand for medical personnel is due to rise still further over coming decades (Wanless, 2002).

The issue of teacher migration from South Africa is well documented with teacher shortages in the UK having been offset by migrants from South Africa (BBC, 2001). The problem is not only manifest in teaching but in nursing and other skilled professions. Bhorat et al. (2002: 19) note that there are over 200 South African Dentists in the UK and the migration of Nurses is a noted national problem. The South African Medical and Dental Council estimated in 1995 that:

“...about 150 doctors emigrate each year (approximately 0.7% of the stock)²¹. Given that the number of doctors graduating a year is growing at marginally more than 1% per annum with population growing at 2.3%, this is causing great concern in medical circles and in the restructuring of the health services.” (Kaplan and Charum, 1998).

Because of this, the ‘Brain Drain’ has become a national policy debate in South Africa (DACST, 2002; Brown, 1998; Kaplan and Meyer, 1998). The activities of foreign governments in recruiting groups of key workers has aroused controversy and some anger. Crush (2002) demonstrates the issue:

“In 1998, the provincial government of Alberta, Canada, developed a proactive strategy to deal with the growing shortage of family doctors in rural communities in the province. The government’s health ministry retained a private immigration agency to recruit South African doctors. The agency launched a recruiting drive in South Africa with lavish dinners and slick presentations for interested physicians. A chartered jet flew 44 physicians and their families to Canada for a weekend at Lake Louise, one of Canada’s premier tourist resorts. The physicians then dispersed to spend time in the communities, where they were feted and offered considerable financial inducements to come. All subsequently decamped to Alberta, along with another 40 who emigrated under the same programme without taking advantage of the recruiter’s largesse. The estimated cost of training a South African doctor is \$150,000. The Alberta government spent a mere \$1.2 million on the recruiting scheme, providing a \$10.4 million net gain of medical expertise at South African expense. Organised government-sponsored skills raiding of this kind represents one end of a spectrum of public and private-sector recruiting activity that targets the skill base of developing countries like South Africa” (Crush, 2002: 147-8).

He also notes the furore that has accompanied these actions, citing the Minister of Health in South Africa as saying in parliament that the South African government would:

“continue to object vigorously whenever developed countries plunder the meagre skills resources of developing countries in organised raids. Countries that systematically under-produce skilled workers because it is cheaper to poach them from poorer countries are guilty of exploitation” (quoted in Crush, 2002: 148).

The South African Department of Home Affairs has also published several reports (RSA Department of Home Affairs, 1997; RSA Task Team on International Migration, 1999) linking skills shortages to the lack of internal capacity for development (Department for Arts, Culture,

Science and Technology, 2002), brain drain and, despite the protests at the international recruitment actions of others, the need to attract skilled labour from abroad:

“We believe that there is a serious shortage of skills at the higher end of the labour market in many occupational categories and that this situation will worsen if South Africa enters upon a projected period of sustained economic growth and infrastructure delivery. These shortages are exacerbated by an under-enumerated brain-drain from South Africa to other industrial states. Internal training capacity is too limited to make up the shortfall in the short to medium term....In our view, aggressive local skills training (brain-train) and brain-gain strategies must be pursued in tandem in the short to medium term. Brain-gain strategies involve individual and group recruiting in key sectors; and promoting links with skilled nationals and former nationals abroad to encourage permanent or temporary return.” (RSA Department of Home Affairs, 1997).

Bhorat et al. (2002) review the issue in some depth. Among push factors they highlight the deteriorating crime and public safety context, the cost of living, increased taxation, a perception among whites that public services (particularly education and health) have declined in quality and perceptions of the chances for improvement in the future. Mattes and Richmond (2002), based on survey research, provide extensive support for these arguments.

In fact Bhorat et al pose the end of apartheid as a potential explanatory variable for increasing intentions to migrate among skilled whites. However, this is rejected because of the high levels of migration that preceded the formal end of apartheid:

“The actual brain drain - that is the net loss of skilled human resources – is not directly and essentially tied to the social and political change of the mid-90s; it started significantly earlier than the onset of these changes. This change may have amplified the phenomenon but it is not the origin of it. The emigration of skilled professionals increased by only 21%...” (Bhorat et al., 2002).

Bhorat et al. might be correct that the formal end of the apartheid system did not correlate so directly with emigration. However, during the years preceding the transition, it became obvious that change was inevitable and the preceding levels of emigration may have been related to this. Kaplan (1997) also provides evidence that migration from South Africa has in the past been related to civil and political unrest, including the period up to the formation of the Government of National Unity in 1993 and Crush (2002: 150-1) notes that “some of these emigrants are self-styled refugees from democracy (privileged whites who rather than face the redistribution of privilege have decided to leave for other shores)”. Nevertheless since skilled migration is a concern for many countries where these factors do not pertain, Bhorat et al.’s argument that the race issue is a significant contextual rather than ultimate explanatory variable must be taken seriously. Indeed government policy has both recognised previous racial biases in immigration/emigration policy and attempted to shift the debate to one based on human capital inputs and the skills needs of the economy, in moves presented by some critics as willing submission to corporate interests (Crush, 2002):

“instead of letting whites in and keeping blacks out as candidates for naturalisation, as was apartheid’s want, we should admit individuals who have desirable skills, expertise, resources and entrepreneurial will, if they add value and if our own people cannot now or in the future fill the need in whichever areas or niches of life economic development will undoubtedly create. We argue, therefore, in favour of more open and effectively managed rules of entry driven by labour-market need.” (RSA Department of Home Affairs, 1997: 19).

South Africa is well placed as a sender nation also because of its well developed education system meaning that its most skilled workers can integrate into global labour markets, with the added advantage of English as the dominant global language. Thus skilled emigration from South Africa is facilitated not only by ‘push’ factors, but by the way in which these link to global ‘pull’ factors. Bhorat et al. (2002) identify these pull factors as general economic and technical change on a global scale which generate demand and wage premiums for skilled workers, alongside demographic change and ageing populations in developed countries and

perceptions of a more stable, political and social environment. In addition to these, they note specific pull factors related to South Africans such as significant expatriate communities and networks in many advanced economies such as the UK, which makes information flow about opportunities abroad and the potential for settlement easier. Bhorat et al. note economic and technological change as creating increased demand for skilled labour in South Africa at the very point at which it is being sucked out of the country, effectively augmenting the problem.

Bhorat et al. examine the brain drain issue using data from the top five receiving countries (UK, USA, Australia, Canada and New Zealand) which they suggest account for 75% of all South African emigrants. Comparing this data with South African entry data they argue that net emigration during the 1987-97 period was 233,609. Of this about 18% were skilled professionals (1989-97). They also identify the receiving countries, of which the UK was by far the largest recipient, accounting for around half of all South African emigration, with the US receiving between 11% and 15%. This data is largely in line with earlier estimates (Kaplan and Meyer, 1998; Kaplan, Meyer and Brown, 1999), though Crush (2002) suggests that they are under-estimates because of the impact of short-term migration on facilitated fixed-contracts and emigration to states beyond the five most important ones. It is not only immigration that had a highly racialised character:

“The intellectual diaspora is overwhelmingly white. In 1985, 142,007 out of a total university student body of 215,786 were white ie. approximately two-thirds. But, it was not only the predominance of white graduates that account for the racial characteristic of the diaspora. It was also white graduates who had easier access to the industrialised countries. This was because many of them possessed or could immediately claim entry rights, particularly to the United Kingdom, because many had family and other social networks abroad, and because most of them had English as a mother tongue.” (Kaplan, 1997).

This diaspora has formed over many years meaning that the political reasons for more contemporary skilled migration from South Africa do not shape the political characteristics of the whole. As such, unlike more recent emigrants, the stocks of skilled migrants abroad might be more inclined to support contemporary South African nation building and development:

“One further characteristic, but one more difficult to specify precisely or to quantitatively substantiate, is that the political disposition of many of those in South Africa's intellectual diaspora are likely to be of a "liberal" persuasion. The term "liberal" here is used very loosely to denote an opposition to the previous apartheid regime and a likely broad support or, at least, sympathy for the "new" South Africa.” (Kaplan, 1997: 9).

Regardless of these specifics, Bhorat et al. (2002), comparing both inflows and outflows for two periods, immediately prior to the end of apartheid and immediately after it, find that the biggest factor in contributing to the net change is the decline in inflows:

“the worsening of the situation [skill shortages], however is due less to an increase on the emigration side than to a decrease on immigration one. Statistically, the deficit of skills is strongly related to a decrease in immigration.” (Bhorat et al., 2002: 14).

This finding contradicts the often held notion of South Africa as a magnet for skilled migration from other Southern African states. Indeed several authors (Bhorat et al., 2002; Kaplan, 1997; Kaplan and Charum, 1998) specifically investigated this issue and found that since 1994 this has not been the case and that South Africa

“experiences a net loss towards the SADC partners...far from being a country draining on the skilled resources of its neighbours, South Africa was recently sending more people to these countries (particularly Zimbabwe and Namibia) than it receives”.⁶ (Bhorat et al., 2002: 18).

⁶ SADC is the Southern African Development Community.

Bhorat et al.'s analysis also draws important considerations for the overall brain drain argument in South Africa in their discussion of skills shortages and labour market trends. Like in many developed countries, they identify skills shortages at the top end of the skills distribution as coexisting with high rates of unemployment at the other pole. The problem for South Africa, though, is grossly amplified with 36% of the economically active population being jobless in 1999. This is a significant factor and should shape conclusions as to the nature of the Brain Drain problem because it suggests that the under-utilisation of human capital resources within the country is a significant issue. This is further supported by their discussion of higher education which they suggest significantly under-performs in meeting labour market needs. Specifically, they argue that there is both under-supply and mismatched supply as the system neither produces enough or the right type of skills. They note declining degree awards and an increasing focus in home economics, philosophy, languages and public administration:

“These statistics indicate that tertiary institutions have been producing a growing number of graduates in fields where demand for these skills has not been growing. Furthermore there has been little real growth, if any, of awards in the fields where labour demand has grown rapidly during this period. There is therefore a mismatch between supply of skilled personnel by tertiary institutions and their demand in the labour market, which adds to the growing shortage of skills.” (Bhorat et al., 2002: 21).

These deficiencies in the South African HE system are recognised by the government and were cited as part of the justification for reform in the 1996 Green Paper on HE reform (RSA Department of Education, 1996). The document also notes that “the attrition and ageing of well-qualified academic staff and the emigration of graduate labour compels attention” underlining the point that academic migration is not merely part of the broader brain drain but acts as a barrier to domestic skills formation that might offset it.

As a result of the recognition of the skills shortage, there has been increasing debate in South Africa about measures to both take advantage of the opportunities presented by the South African Diaspora for technology and knowledge transfer and for attracting and retaining skilled professionals. Thus South African Network of Skills Abroad (SANSA) has been created to facilitate the transfer of knowledge and skills back to South Africa. SANSA was to facilitate these transfers through temporary South African student placements with expatriate academics, collaborative training and research projects, facilitation of business networks and the initiation of spin-out ventures (Brown, 1998).

South Africa also acts as an example of some of the potentially problematic examples of the structural impacts of high skilled mobility. Bhorat et al. note trends in the debate suggesting that domestic policy changes in favour of the black population will lead to flight among skilled whites. This is a long-run debate in South African politics and intrinsically related to ideologies of power that supported the previous regime (Hirschman, 1970).

5. The Brain Drain and UK Higher Education

5.1 Introduction

Skilled migration clearly brings important economic, social and cultural benefits to the UK. With an ageing workforce these benefits are now and potentially will be even more beneficial to the UK higher education sector in future years. The scale and impact of skilled migrants from developing countries working in UK higher education is small, especially when compared with the overall proportion of foreign nationals working in the sector from other developed countries. However, because of the relatively scarcity of skilled labour in many developing countries, the impact of the loss of these skills to developing countries is potentially much more significant.

5.2 General Scale of Migration to UK

Data from the Home Office (2003a) shows that in 2002 12.2 million people were allowed to enter the UK. Of these, the vast majority were either UK nationals returning to the country, European Economic Area nationals or people on short-term visits to the UK. 119,000 people entered the UK on work permits (including dependents). Trends in Work Permit Holder immigration (Table 6) show a rising number of both short and long-term Work Permit Holders. Consideration of the region of origin of Work Permit holders (Table 7) and their highlights similar trends to those for students. Work Permit holder from the Americas have declined as a proportion of the total, while both the number and proportion of Work Permit immigrants from Africa, the Indian Sub-continent and the 'rest of Asia' have risen markedly over the period 1999-2003.

Data on the occupational status of immigrants and emigrants to/from the UK is available from the Office for National Statistics (2004), though the data is only broken down to broad occupational group (see Table 8). This shows that around half of all immigrants to the UK are employed and that this group has been growing in significance as a proportion of the whole over recent years. Among the remaining immigrants around a quarter are students and 15-20% are housewives or children, leaving around 5% classified as 'other adults' in occupational terms. Changes in recent years have seen students growing as a proportion of the total with a small rise also for Professional and Managerial occupations and a small decline in the proportions described as housewives or children. In terms of outflows, Professional and Managerial occupations have risen in significance over the period 1993-2002 as have manual and clerical workers. However, the balance (see Table 9) has tended to remain positive across all categories and to grow over time, meaning that more people are entering the UK than leaving.

Dustman et al. (2003) examine the educational attainment of migrants in the UK using evidence from the Labour Force Survey. They compare data on arrival, age and gender. They also disaggregate this data for the proportion of male and female immigrants with degree level qualifications and compare this with the UK-born population. They find that

overall immigrants are more polarised in terms of educational attainment. The proportion of the immigrant population both who have a degree and have no qualifications – i.e. at either pole of the qualifications distribution – is higher than the UK-born population.

The proportion of UK-born with degree level qualifications is 16% while it is 21% for all immigrants. However, there are significant differences in this finding if the ethnic origin of immigrants is considered. For instance, the proportion of immigrants with degree level qualifications is substantially higher for Africans (33%), Chinese (31%) and people from other English speaking developed countries (26%) such as the US, Australia or New Zealand and those categorised only as “other white” (32%). Significantly though, comparing between data for 1983 and 2000 the relative qualifications profile of African, Indian and Chinese immigrants has risen dramatically offering some support to the Brain Drain thesis that structural economic change leads to changing patterns of labour demand and immigration. However, LFS data is effectively a stock measure meaning that it shares some similar problems to the Carrington and Detragiache data referred to above, telling us little about where education took place. The only indication on this issue is derived from median ages of entry. While this data is also inconclusive showing median ages of entry which suggest that education may have been split between home country and the UK, it does suggest that African and Chinese immigrants and those from developed English speaking countries may be more likely to have received a greater proportion of their education in their home countries.

Research for the Department for Work and Pensions (Haque, 2002) shows that migrants have more difficulty competing for jobs than the UK-born. The employment rate for immigrants generally was around 64% while it is about 75% for the UK-born. However, this is again a differentiated experience with the gap between immigrant workers and UK-born workers being less pronounced at higher skill levels than at lower skill levels. Findings in relation to pay were perhaps surprising, showing that immigrant workers tend to earn more than their UK-born counterparts with the gap being more pronounced at high skill levels and among those who reported “other qualifications” possibly indicating that they were filling specific skill gaps.

5.3 Pull Factors in UK HE

Structural Change in the Economy

The UK demonstrates many of the general pull factors highlighted in the literature. For instance, general economic and structural change is clearly demonstrated in the UK economy with a gradual shift from large-scale manufacturing to service based employment patterns. For instance more than 70% of employment in the UK is now in the service sector and manufacturing and primary continue to decline, despite retaining significant social importance in parts of the Northern regions (ONS, 2004a). This sectoral change in employment is changing the skills demands of employers. Alongside this sectoral change, the skills intensity of work is also increasing (LSC, 2004), both naturally and as the result of leverage from the Government who are keen to raise the skills demands of employers still further as they pursue a twin strategy of high labour productivity and employment-intensive growth (see HM Treasury, 2000; 2001; 2004). In many instances the supply of skills cannot meet demand (LSC, 2004). This pattern of structural change, sectoral reorientation and pressures for up-skilling are replicated across advanced economies in Europe (see CEC, 2003). Taken together these features of the economies of the UK and EU and the failure to fully meet enhanced skills need with existing labour supply, in addition to the labour market in the UK being almost at full capacity (ONS, 2004b; DWP, 2003), form a powerful combination of pull factors for international migration of skilled workers, including in higher education.

Table 5: Student Entry to the UK by Country of Origin (1999-2003)

	1999		2000		2001		2002		2003	
	No.	% of total	No.	% of total	No.	% of total	No.	% of total	No.	% of total
All Nationalities	272,330	100.0%	312,500	100%	339,195	100.0%	368,795	100.0%	318,630	100.0%
Europe	62,340	22.9%	69,820	22%	75,320	22.2%	75,965	20.6%	64,085	20.1%
Americas	87,530	32.1%	99,115	32%	98,985	29.2%	101,050	27.4%	89,270	28.0%
Africa	17,920	6.6%	20,325	7%	25,165	7.4%	27,625	7.5%	24,500	7.7%
Indian Sub-Continent	8,505	3.1%	10,375	3%	14,650	4.3%	19,585	5.3%	24,725	7.8%
Rest of Asia	92,515	34.0%	109,955	35%	121,725	35.9%	141,060	38.2%	112,380	35.3%
Oceania	1,995	0.7%	2,015	1%	2,390	0.7%	2,325	0.6%	2,780	0.9%
Other Nationalities	1,530	0.6%	900	0%	960	0.3%	1,190	0.3%	890	0.3%

Home Office (2003a). 2003 data is provisional.

Table 6: Immigration of Work Permit Holders and Dependants (1999-2003)

All Nationalities	1999	2000	2001	2002	2003
Employment for 12 Months or more	25,090	36,290	50,280	51,525	44,480
Employment for less than 12 Months	28,445	30,785	30,785	34,095	36,870
Dependants of Work Permit holders	22,645	24,970	27,760	34,495	37,830
Total	76,180	92,045	108,825	120,115	119,180

Home Office (2003a). 2003 data is provisional.

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Table 7: Work Permits Holders and Dependants by Region of Origin (1999-2003)

All Nationalities	1999		2000		2001		2002		2003	
	No.	% of total	No.	% of total	No.	% of total	No.	% of total	No.	% of total
All Nationalities	76,180	100.0%	92,045	100.0%	108,825	100.0%	120,115	100.0%	119,180	100.0%
Europe	9,330	12.2%	9,880	10.7%	10,040	9.2%	14,090	11.7%	17,785	14.9%
Americas	30,740	40.4%	33,855	36.8%	31,375	28.8%	31,900	26.6%	29,250	24.5%
Africa	7,425	9.7%	9,160	10.0%	14,100	13.0%	15,695	13.1%	14,400	12.1%
Indian Sub-Continent	8,715	11.4%	13,915	15.1%	19,750	18.1%	22,810	19.0%	25,580	21.5%
Rest of Asia	14,025	18.4%	17,960	19.5%	23,645	21.7%	26,030	21.7%	24,935	20.9%
Oceania	5,815	7.6%	7,175	7.8%	9,785	9.0%	9,370	7.8%	7,070	5.9%
Other Nationalities	135	0.2%	105	0.1%	125	0.1%	220	0.2%	160	0.1%

Home Office (2003a). 2003 data is provisional.

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Table 8: Migration flows into the UK by Occupation (1993-2002)

	All persons		Professional and Managerial		Manual and Clerical		Students		Housewives		Other Adults		Children		Employed People as
	No	% of total	No	% of total	No	% of total	No	% of total	No	% of total	No	% of total	No	% of total	% of total
Inflow															
1993	265.1	29.5%	78.1	29.5%	51.4	19.4%	57.6	21.7%	28.2	10.6%	12.9	4.9%	37	14.0%	49
1994	314.4	30.3%	95.4	30.3%	66.4	21.1%	59.2	18.8%	31.9	10.1%	21	6.7%	40.6	12.9%	51
1995	311.9	32.1%	100	32.1%	56.9	18.2%	74.1	23.8%	27.1	8.7%	16.8	5.4%	37.1	11.9%	50
1996	317.8	31.7%	100.9	31.7%	63.6	20.0%	72.9	22.9%	28	8.8%	17.1	5.4%	35.4	11.1%	52
1997	326.1	30.9%	100.9	30.9%	50.3	15.4%	87.6	26.9%	25.2	7.7%	16.8	5.2%	45.3	13.9%	46
1998	390.3	32.7%	127.7	32.7%	81.4	20.9%	85.5	21.9%	28.8	7.4%	25.8	6.6%	41.1	10.5%	54
1999	453.8	33.0%	149.9	33.0%	92	20.3%	105.7	23.3%	34.8	7.7%	25.7	5.7%	45.6	10.0%	53
2000	483.4	38.1%	184.2	38.1%	82.8	17.1%	102.8	21.3%	41	8.5%	31.9	6.6%	40.7	8.4%	55
2001	479.6	33.5%	160.9	33.5%	91.3	19.0%	117.2	24.4%	36.3	7.6%	24.4	5.1%	49.5	10.3%	53
2002	512.8	32.3%	165.4	32.3%	100.3	19.6%	140.1	27.3%	40.1	7.8%	25.6	5.0%	41.4	8.1%	52
Outflow															
1993	266.3	32.4%	86.3	32.4%	53	19.9%	52.3	19.6%	24.6	9.2%	11	4.1%	39.1	14.7%	52
1994	237.6	29.3%	69.5	29.3%	57.2	24.1%	45.9	19.3%	19.9	8.4%	13.5	5.7%	31.7	13.3%	53
1995	236.5	32.8%	77.5	32.8%	49.7	21.0%	50	21.1%	15.6	6.6%	10.4	4.4%	33.4	14.1%	54
1996	263.7	38.1%	100.6	38.1%	54.8	20.8%	41.4	15.7%	17.1	6.5%	4.9	1.9%	44.9	17.0%	59
1997	279.2	37.2%	104	37.2%	57.7	20.7%	54.9	19.7%	21.6	7.7%	11	3.9%	29.9	10.7%	58
1998	251.5	38.5%	96.9	38.5%	50.4	20.0%	45.2	18.0%	22.2	8.8%	10.2	4.1%	26.5	10.5%	59
1999	290.8	38.5%	112.1	38.5%	77.9	26.8%	45.5	15.6%	16.9	5.8%	9.4	3.2%	29.1	10.0%	65
2000	320.7	44.7%	143.2	44.7%	66	20.6%	59.7	18.6%	15.5	4.8%	8.5	2.7%	27.8	8.7%	65
2001	307.7	39.8%	122.5	39.8%	69.3	22.5%	52.9	17.2%	18.5	6.0%	17.4	5.7%	27.1	8.8%	62
2002	359.4	38.7%	139.2	38.7%	89	24.8%	57.9	16.1%	24.2	6.7%	21.5	6.0%	27.6	7.7%	64

ONS (2004).

Table 9: Balance of Immigration/Emigration UK, by occupation (1993-2002)

	All persons	Professional and Managerial	Manual Clerical and	Students	Housewives	Other Adults	Children
1993	-1.2	-8.2	-1.6	5.3	3.6	1.8	-2.1
1994	76.8	25.9	9.3	13.3	12	7.5	8.8
1995	75.4	22.5	7.2	24.1	11.5	6.5	3.7
1996	54.1	0.3	8.8	31.5	10.8	12.1	-9.5
1997	46.8	3.2	-7.5	32.7	3.6	5.7	15.4
1998	138.8	30.7	31	40.4	6.6	15.6	14.6
1999	163	37.9	14.1	60.3	18	16.3	16.5
2000	162.8	41.1	16.8	43.1	25.5	23.4	12.9
2001	171.8	38.4	22	64.3	17.7	7	22.4
2002	153.4	26.1	11.3	82.2	15.9	4.1	13.8

ONS (2004).

This general pattern of structural change is augmented substantially in the UK by the specific demographic profile of staff in higher education and the demands placed on the system to expand to meet the government's widening participation agenda. For instance, nearly a third of research and teaching staff in higher education are over 50. The overall proportion of over-50s employed in UK higher education has risen from 23% to 28% between 1995/6 and 2002/3. The ageing workforce is also concentrated in specific subject areas. For instance, education, mathematics, engineering disciplines, architecture and the built environment disciplines and some modern languages all had over 40% of their staff aged over 50 in 2002/3 (AUT, 2004). At the same time staff numbers in UK higher education have been expanding, by more than 10,000 staff (9%) between 1997/8 and 2002/3 (HESA, 2005) with the latest data indicating a further rise of more than 1,300 staff between 2002/3 and 2003/4 (HESA, 2005a).⁷

UK Migration Policies

In recent years the UK has operated several programmes intended to attract skilled workers including the Work Permit System and the Highly Skilled Migrant Programme. The Work Permit system operates through employers who make requests to Work Permits UK, a Home Office quango for a permit to last up to five years. Work Permits UK makes decisions based on consultation with industry experts, trade unions and employers over the skills needs of the economy and is advised in doing so by sector-specific panels. Employers need to demonstrate that they are UK based, that there is a genuine vacancy and that the individual is skilled at least to NVQ level 3 or above (roughly equivalent to A-level). The High Skilled Migration Programme was initially a pilot programme but allowed people deemed to be of high skills to enter the UK for a year, with a further potential to apply for leave to remain. Decisions were made on a points system (McLaughlin and Salt, 2002).

More recently the focus on differentiating between skilled and less skilled immigrants has been substantially strengthened. In February 2005 the government released *Controlling our Borders: Making Migration work for Britain*, complete with ministerial and Prime Ministerial forewords, marking the high profile strategy as part of the Government's series of five year plans in advance of the general election (Home Office, 2005a). The document clearly establishes the main purpose of allowing immigration to the UK as realising economic gains from the skills of migrants:

“There are gaps in our labour market that cannot be filled by the domestic workforce. Skilled migrants, students and visitors bring major economic benefits, with net inward migration contributing 10-15% of forecast UK trend economic growth.” (11).

The new system is to have four tiers:

- **Tier one: The Highly Skilled** – This group includes “doctors, engineers, finance experts and IT specialists”, who will be allowed to enter the UK without a pre-existing job offer, to look for work. This category also includes investors and entrepreneurs who will be allowed to enter on the basis of the size of their investment or the number of jobs they might create.
- **Tier two: The Skilled** – This group includes those with NVQ Level 3 and above who will be allowed to enter if they have a job offer in a shortage area, where no domestic alternative is available. Despite the description of skills needs for this group being level 3+ the example occupational groups are Nurses, teachers and administrators, who would normally require at least a Level 4 qualification and in the case of teachers a post-graduate qualification also.
- **Tier three: Low Skilled** – This group will be designated on a quota basis with reference to specific skills shortage areas. With the enlargement of the EU, quotas in agricultural sectors

⁷ Changes in the methodology mean that it is only possible to compare between 1997/8 and 2002/3 and then between adjusted figures for 2002/3 and 2003/4. See HESA (2005a) for details.

will be removed because these will be able to be filled from migration from Eastern Europe. Migrants in this category will have only time-limited leave to remain, with guarantees that they will leave at the end of this period.

- **Tier four: *Students and Specialists*** – This group will also include temporary working arrangements for individuals representing overseas governments or multinationals where there is “no significant issue of competition with the domestic labour force”. This also includes sports-people.

Within the system the *Skills for Business Network* (the new name for the Sector Skills Development Agency) will advise on skills shortages in the economy. While there is also discussion of the Asylum system there is a clear differentiation within the plans for the welcome to be extended to some on the basis of their potential economic contribution and the tight controls for others based on their need to enter the country.

5.4 Feedback Effects from the UK – the scale of remittances

Recent work undertaken by the UK government’s Department for International Development (DfID) (2004b) has estimated the annual flow of remittances from the UK. This work concluded that in 2001 the flow of remittances was in the region of £2.3bn or between 70-80% of UK Overseas Development Assistance. The primary receiving countries were identified as India, Pakistan, Caribbean countries, China, Bangladesh, Nigeria and Ghana. However, this work also identified a number of issues which limit the benefits of remittances for recipients in developing countries. These were primarily related to transaction and included costs, time and security of transactions. Subsequently DfID has launched the website www.sendmoneyhome.org which aims to provide information about different money transfer providers to aid migrants in choosing the most suitable channel for sending remittances.

5.5 Foreign Nationals Employed in UK HE

Table 10 shows the profile of non-UK nationals working as Academic staff in UK HEIs in 2002. It shows that around 34,000, 23% of UK academic staff were of non-UK/British nationality. This is slightly up on the total for 1995/6 which, at 27,000 was then just over 21% of academic staff in the UK. Of these around 6000 or 4% of the academic staff headcount had no nationality recorded in the Individualised staff record. Of those whose nationality was known, the largest group were nationals of other European Union states, the most numerous being German, Irish, French, Italian, Greek and Spanish. The next largest group were from Asia, with the most important non-UK nationalities being Chinese (2,408) and Indian (1,180). North America was also an important source of foreign nationals working in UK academia with more than 2,000 staff having US nationality.

Notwithstanding the large proportion of unknown nationalities, foreign nationals from outside N. America, Asia and the EU did not make up a large proportion of the UK academic headcount. However, this is not to say that the numbers here are insignificant as a proportion of the sending country’s academic workforce. While data on academic staff in many LDCs is scarce, **Table 11** shows the numbers of academic staff working in UK HEIs with African nationalities by country of nationality. It shows that 268 staff had South African nationalities, 153 were Nigerian, 129 were Egyptian and 120 Algerian. It also shows that there were staff with nationalities of some of the poorest and least developed states in the world such as the Sudan (44), Ethiopia (29) and Sierra Leone (25). Sierra Leone ranks bottom of the UNDP’s Human Development Index, Ethiopia ranks seven from bottom and Sudan ranks 139th. There are also many other countries listed in the UNDP’s low human development category with nationals working in UK academia, notably Zambia ranked 164 in the work on human development and with 33 nationals working as academics in the UK and Zimbabwe (ranked 147 and with 77 nationals in UK academia).

Table 10: Academic Staff in UK HEIs by Nationality (Continent), Headcount (2002)

Continent Totals	No of Staff in UK HEIs (headcount)	% of Total
Africa	1339	0.9%
Asia	5363	3.7%
Caribbean	147	0.1%
Central and Latin America	514	0.3%
EU	12834	8.7%
EU Country OCTs	17	0.0%
Europe (Non-EU)	2078	1.4%
Middle East	662	0.5%
N. America (US and Canada)	3053	2.1%
Australasia and Oceania	1791	1.2%
UK Extra Territorial	58	0.0%
Stateless	9	0.0%
Unknown	6107	4.2%
Total	33972	23.1%
All Staff Including UK Total	146877	

Higher Education Statistics Agency.

Table 11: Academic Staff in UK HEIs with African Nationalities, by Country, Headcount (2002)

Country/Nationality	No of Staff
Algeria	120
Angola	3
Benin	1
Botswana	4
Cameroon	28
Central African Republic	1
Chad	1
Congo (Democratic Republic)	3
Congo (People's Republic)	1
Djibouti	3

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Egypt	129
Eritrea	4
Ethiopia	29
Gabon	1
Gambia	8
Ghana	83
Guinea	1
Guinea-Bissau	2
Ivory Coast	7
Kenya	53
Lesotho	1
Libya	33
Malawi	16
Mauritania	9
Mauritius	88
Morocco	31
Mozambique	4
Namibia	2
Nigeria	153
Rwanda	1
Senegal	6
Sierra Leone	25
Somalia	5
South Africa	268
Sudan	44
Swaziland	2
Tanzania	13
Togo	2
Tunisia	22
Uganda	21

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Zambia	33
Zimbabwe	77
Burkina	1

Higher Education Statistics Agency.

5.6 Overseas Students in the UK and Changes in UK HE

Over recent years the number of overseas students studying in the UK has risen markedly. During 2003 319,000 students entered the UK, a fall on the previous year of about 50,000. However, the number of student entries to the UK is still substantially above the level in 1999 (272,000). Trends in the country of origin of students entering the UK (see [Table 5](#)) show that over recent years Africa and the Indian Sub-continent have become relatively more important sources of foreign students. By contrast the numbers of foreign students from Europe and the Americas have declined, possibly reflecting tighter economic conditions in these countries in recent years.

Overseas students have increased in importance to UK HE over the last ten years, particularly because of the high level of fees charged to these students. This has led HEIs to place a high degree of emphasis on activities intended to attract overseas students, meaning that academic staff are often put under pressure to tailor their activities to attracting these students.

6. Dealing with the Brain Drain – Suggested Policy Responses

Lowell (2001a) sets out a framework for categorising six types of policy response to the migration of skilled labour, based on the “the Six R’s”. The discussion uses this framework to summarise a variety of implemented and suggested policies to mitigate or respond to skilled labour migration.

6.1 Reparation

Reparation covers proposals to compensate developing countries for the loss of skilled labour and the lost investment in human capital development or potential future growth that it represents. Lowell (2001a) characterises reparation schemes as linked to expatriate taxation proposals promoted in the 1970s. For instance Bhagwati (1982; Bhagwati and Hamada, 1982), developed the notion, gained from the US taxation system, that taxation follows citizenship rather than residence. As such migrants residing in a third country would continue to pay income tax to their country of origin, in return for the right of citizenship.

The United Nations Development Programme has suggested several possible models for a reparations tax. These include a one-time exit tax, a requirement for loan repayment equivalent to educational subsidies in the instance of a national migrating, a marginal (e.g. 1%) flat rate multinational tax for all foreign nationals working abroad, the adoption of the Bhagwati-style US principle of taxation related to citizenship or a cooperative multi-lateral system for taxing foreign nationals abroad in a similar fashion to Pay As You Earn in the UK (UNDP, 2001: 92).

However, such a direct tax on migrants incomes has problems. It may act as a disincentive to education, because of the reduced effective salary, it would be very difficult to implement and may distort trade flows. Puri and Ritzema (1999) note that such mandatory remittance policies have failed in the Philippines, Thailand and other East Asian states because of the difficulty in implementation. Similar policies have had more success in Korea but this is related to the specific and unique nature of Korean migration, which tended to be concentrated in Korean construction firms in the Middle East, making it easier for migrants’ incomes to be taxed.

However, if reparation for losses were considered not as an income tax issue but as a development finance issue, some of these problems might be overcome. Developed nations could, through some type of concessional finance scheme, linked to HIPC or the UK’s proposed International Finance Facility (IFF), agree to compensate developing countries through resource flows (financial, technical or other) on some agreed calculation of loss of investment in human capital. Such calculations would undoubtedly be extremely difficult to agree on, given the nature of multinational negotiations and the ambiguous nature of research on the costs of education, the growth and productivity return to education, and the poor quality of migration statistics (especially in relation to skills and where investment in

human capital actually took place) but by treating this as a general developmental problem rather than a technical compensation problem these may be overcome. In any case, the issue deserves somewhat more detailed consideration than the simplistic rejections of the notion compensation or reparation by the likes of Lowell (2001a) or Beine et al. (2003).

6.2 Restriction

Restriction options refer to regulations placed on either emigration or immigration. In practice the regulation of emigration may signal human rights issues, for it is clear that migration may be a response to persecution, intolerance or other issue of political repression. Migration is also a rational response to the restriction of economic and social potential. Despite this, restrictions on immigration are in practice implemented by most countries and these tend to differentiate between political refugees and 'economic migrants' (Lowell, 2001). As demonstrated above, the trend in these policies is toward differentiation on the basis of perceived economic utility to the receiving country (McLaughlin and Salt, 2002; Crush, 2002; Home Office, 2005). Where skills gaps are identified policies tend to make immigration easier for migrants possessing complementary skills or competencies. On the other hand, immigration is frequently restricted for 'economic migrants' who possess skills already present in the receiving country. While differentiation is not simplistically correlated to levels of skills, it does tend to be the most highly skilled that are defined as the most attractive immigrants in policies motivated by theories of economic growth and competitiveness influenced by perceptions of the importance of human capital for growth.

The problem with this sort of policy response to the problems posed by skilled migration is that it both restricts the freedom of labour and curtails the cultural benefits of mutual understanding, tolerance and the advancement of knowledge that arise out of exchange, particularly in an academic setting. Such policies would also be subject to collective action/free rider problems in a context of intense global competition and pursuit of 'competitiveness'.

6.3 Return

Return policies aim to encourage the reintegration of migrants back into the home country when they choose to do so. This is important because many skilled migrants choose not to return because of social or regulatory barriers to return such as the loss of some welfare benefits. This can be especially beneficial where the period of migration has resulted in an increase in their human capital, thereby effecting a reverse flow of knowledge or skills. Indeed, the policies of many developing countries in financing students to study abroad and placing restrictions, or bonds, on them to return home and work for a defined period after the completion of studies expressly seek to take advantage of this type of benefit, though these may not always be successful, with significant leakage of graduates into the country of study and other third countries. Furthermore if foreign study is paid for by developing countries at commercial rates, the allocation of benefits becomes more questionable.

Pellegrino notes the establishment of programmes in both Uruguay and Argentina after the end of military dictatorship to facilitate the return of skilled migrants. For instance, in Uruguay the government, with the help of the International Office of Migration, created the National Commission for Repatriation which sought to facilitate the return of migrants generally but had a specific emphasis on scientists and academics. These efforts have since been augmented with the creation, in 1990, of the Sectoral Commission for Scientific Research at the University of the Republic and programmes to develop and reinvigorate academic research. In Argentina, similar efforts were made with the creation of the National Commission for the Return of Argentineans Living Abroad in 1984. The National Council of Scientific and Technological Research has specifically targeted academic migrants with incentives such as the payment of moving and establishment costs and family travel costs. However, despite these initiatives, Pellegrino does not cite any evidence of widespread

success and with regard to Argentina, reports that “the response was rather limited, and a notable percentage of those who returned did not achieve adequate placement so emigrated once again” (Mendoza, quoted in Pellegrino, 2002).

Lowell (2001) highlights the Return of Qualified African Nationals (RQAN) programme, which “aims to develop a country’s economy by seeking persons who are highly trained and qualified either to return or find positions in each country that will benefit from that person’s training”. The programme is used by ten African governments including Angola, Cape Verde, Ethiopia, Ghana, Guinea Bissau, Kenya, Uganda, Zambia and Zimbabwe. The RQAN project will provide some services to returnees such as the payment of return airfares, shipment of personal effects, financing of some professional equipment expenses and some settling in expenses. There is also a low interest loan available to facilitate business start-ups. Between 1983 and 1999 the programme achieved an average return rate of around 100 per year.

In Taiwan, the National Youth Commission has been established to facilitate the return of skilled migrants. The commission acts as an ‘information clearing house’ for academics. Korea has also attempted to persuade skilled migrants to return through investment in the Korean Institute for Science and Technology, within which returnees are offered a great deal of managerial and research autonomy. Both Korea and Taiwan have attempted to recruit older professionals and academics using internationally competitive salaries, enhanced working conditions, help with childcare and housing and through the use of visiting professor schemes for those unsure about a permanent return. There is some evidence to suggest that these approaches have worked, at least in the Korean case, where return rates for scientists with doctorates from the US jumping from 16% in the 1960s to around 60% in the 1980s (UNDP, 2001). However, it should also be noted that the Korean economy and technology structure grew sharply during this period. This is both a direct and indirect causal factor in motivating return as it enabled the Korean government to invest significantly in the research and higher education system (Meyer and Brown, 1999).

6.4 Resourcing/Diaspora Policies

Lowell (2001) identifies two types of diaspora policy: those aimed at promoting technology/knowledge transfer and those aimed at promoting financial transfers in the form of more or less managed remittance flows.

The essence of policies designed to promote technology transfer is a shift in perception from seeing skilled migration not merely as a human capital loss but also a potential source of gain. This is particularly so in a context where the full benefit of skilled researchers cannot be harnessed in the home country due to a lack of research infrastructure, funding and socio-cognitive networks and research clusters (Meyer and Brown, 1999). Such policies typically foster linkages between skilled migrants abroad and the home country to develop student exchanges, collaborative research projects or short-term home visits to engage in teaching or consultancy. Brown estimates that around forty-one such network organisations were established during the 1990s (Brown, 2000). Meyer and Brown (1999) identify networks operating in Argentina, Assam, China, Columbia, El Salvador, France, India, Iran, Ireland, Japan, Kenya, Korea, Morocco, Nigeria, Norway, Pakistan, Palestine, Peru, Phillipines, Poland, Romania, South Africa, Thailand, Tunisia, Uruguay and Venezuela, with many countries operating multiple programmes. In addition, there are also regional networks such as the Association Latino-americaine de Scientifiques (Latin American Association of Scientists) (ALAS) and the Network of Arab Scientists and Technologists Abroad (ASTA). In recent years, South Africa has also established the South African Network of Skills Abroad (SANSA) (Meyer and Brown, 1999; Kaplan, Meyer and Brown, 1999; Kaplan and Meyer, 1998), which by the turn of the century had nearly two thousand members, spread among 57 countries and 5 continents, 34.3% of whom had Doctoral level qualifications (Brown, Kaplan and Meyer, 2000).

The United Nations Development Programme (UNDP) operates the Transfer of Knowledge Through Expatriate Nationals (TOKTEN) programme which seeks to promote short-term return of skilled migrants to their country of origin. The TOKTEN programme operates a large number of countries including China, India, Nepal, Pakistan, Syria, Palestine, the Philippines, Turkey, the Lebanon and Vietnam. The Economic Commission for Africa is also developing an African Diaspora Database to provide a clearinghouse for African experts and act as a source of technical skills for development on the continent (UNECA, 1999).

Logan argues that one of the crucial factors in the establishment of diaspora networks like TOKTEN is the exploitation of social and cultural linkages between the diaspora and the home country in terms of generating a high degree of commitment to the aims of the project.

The advantages of the TOKTEN approach are that it is built on “cultural affinity” (experts are sent only to their home countries), it is on a volunteer basis, and it allows experts to contribute to the development of their home countries without having to make difficult choices over lifestyles, legal residency, and citizenship (Logan, 1990).

A second type of diaspora policy is based on increasing the volume and effectiveness of financial transfers. At one end of the spectrum compulsory remittance schemes can be seen as a reparation policy (see above) rather than remittance policy. However several governments have adopted ‘softer’ policies to encourage saving in the home country such as government backed development bonds or preferential savings schemes (with favourable interest rates). Several countries, including India, Pakistan, Bangladesh and Korea have instituted foreign currency accounts, some with preferential interest rates. Other countries, like Sri Lanka have instituted specialist accounts but the interest rate has been kept slightly below international comparators. India, Pakistan and Bangladesh also use government bonds denominated in foreign currencies to stimulate remittances from workers abroad (Puri and Ritzema, 1999). Such schemes are not only important because they may stimulate remittances however. They are also important in helping to channel remittances into productive investment rather than consumption of imports, thereby helping to rectify institutional and capacity weaknesses that may have spurred migration in the first place. They can thus overcome market failures in terms of access to credit and information (Taylor, 1999).

Chikeze (2001) documents an interesting example of a diaspora network which also facilitated financial resource transfers from the Somali diaspora in the UK and across the world to establish a University in Somalia. The example is thus worth quoting at length:

“The development of the University of Hargeisa in Somaliland was a project spearheaded by the UK Somali community from that region. Against all odds and to much national and international acclaim, the newly developed University of Hargeisa (UoH) in Somaliland opened its doors in 2000 to the first batch of access course students in preparation for a full start in September 2000. Initiated in mid-1997, this effort united Somalis in Somaliland itself with Somalis in the diaspora as far-flung as Australia, Sweden, Kuwait, the United States, and Britain. The project enjoyed support by the government of Somaliland, a territory still without international recognition. A steering committee in London that combined Somali expertise and leadership with British know-how and experience worked in close collaboration with an interim council in Somaliland. Local businesses in Somaliland took full responsibility for rehabilitating the government-donated dilapidated old-school building that was in fact home to over 500 returned Somali refugees. Somalis in Sweden provided 750 chairs and tables; Kuwait-based Somalis sent computers. In the project's second year, the Somaliland Forum, a cyberspace-based global network of Somalis formed taskforces to tackle specific elements, raised money, maintained email groups, and hosted real-time e-conferences.

The steering committee in London consulted back and forth with the interim council in Somaliland - made up of elders, government ministers in formal and personal capacities, local business people, and local mayors - to identify the priority academic areas to receive immediate attention based on local needs. The steering committee drew on its expertise to

write a curriculum for these academic areas, a charter for the university and the business plan.

UoH threw a brain drain into sharp reverse. One-third of the students on the access course returned from the Gulf, the UK and Canada to attend. High school students who would either have had to leave Somaliland to pursue further studies or drop out now have the option to stay. The university's first vice chancellor, an eminent Somali scientist who worked in Canada for a number of years, took up post to work pro bono to oversee UoH's crucial first few years." Chikeze (2001).

6.5 Recruitment

The spread of competitive recruitment policies as a response to the brain drain on the part of both developed and developing countries has already been noted. However, it is worth noting that these policies require the use of resources which naturally disadvantages developing countries. On the other hand, an alternative approach is to regulate recruitment activities through placing restrictions on the activities of private sector recruitment agencies. It is these agencies that are often identified with some of the most exploitative practices such as charging high registration or administrative fees or requiring migrants to work for free a period after immigration (Lowell and Findlay, 2001). The International Labour Organisation has promoted the regulation of these agencies as a means of protecting the most vulnerable migrants (ILO, 1997). Other measures might involve the regulation of government activities in competing for migrant labour. For instance, The Commonwealth has established a Protocol on Teacher Recruitment "to ensure that the process of teacher recruitment between Commonwealth countries occurs in a manner that is beneficial to all parties concerned" (Sives et al., 2004) and the UK Department of Health has instituted *Guidelines on the International Recruitment of Nurses* and *Code for International Recruitment of Healthcare Professionals* (UK DoH, 2004). While the evidence of reductions in recruitment is ambiguous (Buchan, 2002), such protocols, if adequately scrutinised, might present a means of managing some of the negative effects of competitive brain drain.

Lowell and Findlay (2001) suggest that the General Agreement on Trade in Services (GATS) may offer one avenue for the effective multilateral regulation of international recruitment. However, as other research (AUT, 2002; Nunn, 2002)⁸ has shown the GATS may also act as a lever for the increased commercialisation of higher education on a global scale, with the effect of reducing the power of organised labour and collective bargaining with potential to make recruitment and human resources policies in universities even more competitive and less regulated. Further, by advancing the commercial education agenda there may be increased focus on selling education to developing countries (see Brown, 2005) than providing education as a developmental, social and public good. The prospect of education bought solely as an input to economic growth raises profound questions for cultural and social reproduction and learning, and cultural imperialism.

6.6 Retention

From a trade union perspective retention policies are by far the most desirable. Such policies address the core push factors. They include addressing issues of poor quality governance, political repression and equitable economic development for cohesive societies. In the specific case of academics and researchers these policies include investing in research and teaching infrastructure, expanding the HE system and promoting academic freedom. Measures also include addressing pay and terms and conditions differentials, workers rights and strengthening the power of collective representation and bargaining

⁸ See also http://www.bc.edu/bc_org/avp/soe/cihe/inhea/pubs_theme/GATS_Education.htm for a comprehensive bibliography on the impact of GATS on HE.

through strengthening trade unions. For instance Logan (2000) argues that for the importance of “institutional personnel reform to address entry-level conditions of service (this must proceed beyond salary remediation to include, for example, benefits for household dependents, academic freedom (depoliticized academic environment), and a clearly defined and transparent structure of reward for merit)”. The ICFTU also suggest investment in key services and infrastructure, the promotion of workers’ rights and better salaries and terms and conditions in developing countries would protect against the more damaging impacts of skilled migration (ICFTU, 2004b). Effective enforcement of existing charters and declarations of rights for migrant and all workers would also be useful in retaining skilled workers in developing countries.

Global policies to generate development may not be sufficient to offset the impact of brain drain factors. Indeed, there is considerable and building evidence that they will not meet the less ambitious MDGs (Sachs, 2005; World Bank, 2004a). Moreover, by defining the ‘problem’ almost exclusively in terms of helping only the most poor developing nations with regard to quite narrow measures of absolute poverty, global development policies may actually be further embedding the conditions in which the Brain Drain will accelerate. This is because skilled migration tends to be from countries with a given level of development to enable a relatively successful education system. Skilled migration then acts as one potential barrier to moving beyond a given level of development. It may also accelerate if development stalls, or in even short periods of recession. In an environment where international competition for key skills is likely to increase, there is a need to revisit the dominant development paradigm, particularly with regard to replacing the focus on absolute poverty to one of equality, between and within states.

7. Suggestions for AUT/NATFHE Action Points

This section does not include recommendations as such. Rather, the discussion below suggests different areas in which AUT and NATFHE may want to develop policy and suggests some action points to take forward.

7.1 Promote Development, Poverty and Inequality Reduction

AUT/NATFHE may wish to promote the retention of skilled workers including academics and researchers in developing countries through advocating appropriate development in the developing world. In doing so, AUT/NATFHE may wish to give thought to the most appropriate model of development including a reconsideration of 'poverty reduction' and whether there is a greater role for equality within and between states. In any event, AUT/NATFHE may wish to highlight the benefits of increased spending on education and particularly on higher education. This may include supporting the recent Commission for Africa (established and Chaired by Tony Blair) recommendation that the international community should commit additional development assistance to the task of developing capacity in research, technology and higher education institutions in Africa (Commission for Africa, 2005: 130-1). AUT/NATFHE may also wish to promote the role of teachers and academic trade unions in securing and upholding quality in educational provision, both in the UK and in the developing world. This may include strengthening engagement with international discussions on regulation and standardisation.

Action Point: Lobby the UK government directly and foreign governments and development institutions through Education International to increase resources and emphasis on development, poverty and inequality reduction.

7.2 Promote the Development of Protocols on International Recruitment

Consider the development of protocols to regulate international recruitment practises in line with other sectors. The focus of these should not be to limit migration, but to regulate the manner in which academics are recruited and to balance the rights of individuals to migrate with the needs of education systems in developing countries.

Protocols need to recognise the clear benefits which accrue to developed countries from international recruitment along with the potentially negative impact on developing countries' capacity to develop. They must therefore provide developing countries with recourse to internationally mediated agreements which recognise the rights and responsibilities of both sending and receiving countries. Receiving countries also need to recognise their obligations in depriving other countries of scarce resources, and this should be reflected in those agreements.

Discussion on such protocols could centre on a number of factors, for example the need to protect academics who migrate to the UK, minimum acceptable standards of treatment and ensuring that foreign nationals are fully protected and treated equally to domestic labour. Such protocols could also be used to facilitate the return to home countries where individuals wish to do this. They would need to include the necessary employment, social and social security provisions.

Protocols might also provide an opportunity for leverage with employers and developed country governments to establish mechanisms to ensure that developing countries draw the maximum possible benefit from skilled migration. This would include technology and knowledge transfer, exchanges and access to partnerships and research networks as well as establishing (voluntary) efficient and development orientated remittance schemes (see 7.4).

Action Point: Discuss the implications and feasibility of such protocols with development institutions and Education International. Discuss the feasibility of adopting minimum standards for international recruitment with UCEA and HEIs".

7.3 Promote Debate on Potential Compensatory Mechanisms

While some migration experts dismiss the idea of reparations or compensation, they tend to do so from the point of view of a direct tax on labour. However, a more developmentally focused compensatory system which merely acknowledges the resource transfer involved in high skilled migration may overcome many of their cited objections. These resource flows might be particularly targeted at education investment, offsetting some of the loss. Clearly any proposed structure would require substantial further research but promoting debate on the introduction of a compensatory mechanism may raise the profile of brain drain issues in a positive and policy-focused manner, helping it to move away from the sensationalist and anecdotal style that has accompanied media stories of the Brain Drain.

Action Point: Promote debate on the benefits/costs and possible structures for a multilateral human capital loss compensation facility within national, European and global fora including trade union and inter-governmental networks.

7.4 Accentuate Potential Beneficial Impacts of Skilled Migration

There are a number of ways in which the potential beneficial elements of the Brain Drain might be facilitated and accentuated:

- Promote the information and opportunities for the return of skilled migrants after a period of time. Linkages with the International Office of Migration in the UK, which operates a web-based database of opportunities as part of a re-integration project could be developed. Linkages with the various UN programmes for temporary return might also be established.
- Student and staff exchanges between universities in the UK and in the developing world to promote two-way knowledge transfer. Purposefully designed structures should be developed for these exchanges to ensure that knowledge and skills sharing is maximised.
- Encouraging HEIs to allow the non-commercial licensing of teaching materials. MIT's OpenCourseWare might be used as a model for this. However, HEIs might also be encouraged to develop a shared resource for HE teachers and researchers. Links might also be made to publishers around access to online journal subscriptions.
- Encouraging HEIs to develop non-commercial partnerships with HEIs in the developing world to facilitate exchanges and knowledge sharing.
- Promote joint research networks to allow researchers in the developing world access to research facilities. This would be a two-way exchange with HEIs benefiting from the skills and potential of researchers in the developing world without having to compete for their skills on an international market.

- Support the development of diaspora networks by promoting online registers of academics from developing countries. This might act as a clearing-house for skills in a similar way to the UNDP's TOKTEN programme.
- Encourage academic staff to volunteer for beneficial projects overseas, for instance through VSO.

Each of these approaches will require different actions. However in the main they will involve AUT/NATFHE lobbying government and employers to adopt these or similar proposals.

Action Point: Lobby government (DfES/DfID/HM Treasury) to adopt some, all or similar proposals to those set out above.

7.5 Protect Core Labour Standards, Trade Union Rights and Academic Freedom

At the heart of much of the Brain Drain debate lies the central challenge for trade unions: protecting the rights and advancing the interests of labour. The globalisation of labour markets, whether by capital or labour mobility, raises significant questions for the future of collective organisation. This is because the globalisation of labour markets has in many industries been associated with increasing competition between nationally and sub-nationally organised labour for scarce investment. The result, while often over-played (not least by employers), has been the much publicised 'race to the bottom' in terms of wages, employment conditions, labour and investment regulations. It is important that competition for scarce and valued but segmented parts of the global labour force does not also create damaging social 'externalities'. As such, a core element of protecting the interests of far off societies is protecting Core Labour Standards, trade union, employment and socio-economic rights at home. In addition, the special nature of academic labour and the specific 'push' factors associated with it in terms of international migration, mean that protecting academic freedom is also important.

As such AUT/NATFHE will need to renew their efforts to support the international trade union campaign to gain universal recognition of the International Labour Organisation's eight Fundamental Conventions including on:

- Freedom of Association (Conventions 87 and 98).
- The Abolition of Forced Labour (Conventions 29 and 105).
- Equality (Conventions 111 and 100).
- The Elimination of Child Labour (Conventions 138 and 182).

DfID (2004) has recently endorsed the view that respect for core labour standards is essential for poverty reduction. However, work remains to secure full UK government commitment to upholding and promoting these standards in developing countries and AUT/NATFHE may wish to work with the TUC to achieve this. Work also remains to ensure that these core labour standards take full legal precedence over other international agreements on trade and investment rules.

In addition to core labour standards, this research has revealed the importance of rights associated with academic labour such as autonomy in research, publishing and teaching. The Universal Declaration on Human Rights (UN, 1948) and the UNESCO recommendations *Concerning the Rights of Higher Education Personnel* (1997) Against Discrimination in Teaching (1960; 1962), On Education for International Understanding and Cooperation and Peace and Education relating to Human Rights and Fundamental Freedoms (1974) and On the Status of Scientific Researchers (1974).

Action Point: Lobby government (DfES/DfID/HM Treasury/DTI) to more vigorously promote universal respect and upholding of core labour standards and Academic

Freedom and to support the inclusion of the Fundamental Conventions within bilateral and multilateral (including in the WTO) trade and investment agreements.

Action Point: Lobby government and work through Education International to secure universal application and respect for academic freedom as a fundamental human right.

There will be a need also to work more closely with academic trade unions in the developing world. One means of doing so might be to facilitate trade union exchanges or to develop 'membership passports' or reciprocal recognition agreements, especially where academic trade unions in the developing world were able to retain the subscriptions of migrant workers in order to prevent organised labour from also losing from Brain Drain effects.

Action Point: Strengthen international linkages with academic trade unions in the developing world and work to support trade union organising in the developing world, including through mutual recognition agreements.

AUT/NATFHE may also give thought to developing universal welcome packs including advice on settling in the UK, points of contact for information, summaries of employment and academic rights, information about trade union recognition agreements and diaspora networks, remittance schemes and student/staff exchange programmes so that incoming migrants have the information available to them to promote beneficial feed-back effects if they are so motivated. These could be modelled on the TUC's (2002) *Migrant Workers – A TUC Guide* but adapted to give HE-specific information. This may also include details of the DfID research on providers and links to www.sendmoneyhome.org.

Action Point: Develop Information Resources for foreign nationals working in HE in the UK.

7.6 Promote Debate and Awareness of the 'Brain Drain'

A key area of policy development for AUT/NATFHE is the promotion of awareness and debate on the Brain Drain and its potential impact on development. This will involve work with members in the UK and with international partners, such as Education International, and trade unions in the developing world.

Action Point: Organise a major conference to promote awareness among members and partners of the Brain Drain and its impact on the development potential of developing countries.

Action Point: Develop and distribute materials for members promoting awareness of the Brain Drain and its impact on the development potential of developing countries and including guidance on what members and Local Associations/Branches can do.

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