Brain Drain: Painting a Picture for Africa

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Acronyms

BMJ	British Medical Journal
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
ILO	International Labour Organisation
IOM	International Organisation for Migration
NHS	National Health Service
NIDO	Nigerians in the Diaspora Organisation
NYSC	National Youth Service Corp
OECD	Organisation for Economic Cooperation and Development
UK	United Kingdom
UN	United Nations
UNO	United Nations Organization
UNECA	United Nations Commission for Africa
USA	United States of America
WHO	World Health Organization

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Introduction

According to a United Nations estimate, by early 2005, there would be between 185 and 192 million migrants around the world (UN, 2004). A substantial proportion of these people are Africans who have settled in other countries and continents and among these are highly skilled health care workers and professionals. Research has established the link between international migration and brain drain (Adams, 2003). African doctors, qualified nurses and allied health care professionals have been migrating in their stride to either seek training opportunities or simply to seek opportunities to practice their professions.

The problem of brain drain has recently been a cause for concern for most African governments and organisations because of the apparent affects on health care service delivery, among other negative effects. Many possible causes of brain drain have been advanced, couched in terms of push, pull and facilitating factors and other theories of migration. From real, nominal as well as perceived wage differentials between source countries in Africa and destination countries, to non-economic, social, political and cultural factors, the effect of globalisation, improved communication and targeted migration, have all contributed in exacerbating the problems of the drain of African health care professionals.

This paper revisits the causes of migration, recognises the existence of brain drain and seeks to explore the extent of the problem, and finally proffer possible solutions to ameliorate the effects, drawing largely from both theory and empirical work.

2. Literature (theories of migration and causes of migration: push pull factors)

Migration is a process that responds to a variety of stimuli and has a variety of consequences (Hirschman, 2005). Usually, people move from areas of labour surplus (characterised by low wages and high unemployment) to areas of labour shortage (characterised by low unemployment and high wages). Economics-based theories of mobility have typically concentrated on micro-level explanations of individual or household migration decisions, or macro-level theories focusing on income or labour market differentials between source and destination countries. Economists have proposed various models in explaining the process of movement of labour from one place to another. Four such models of migration are worthy of note: the human capital and life cycle models, the household migration models, the asymmetric information models, and the network models of migration.

2.1 Human capital and life cycle migration models

The human capital model assumes that migration is non-permanent and that workers seek to acquire skills in foreign lands. Such acquired skills will have a long-term effect on lifetime earnings, as the new skills will help the individual to earn more in his career or profession. This sort of migration will eventually have a positive effect on productivity in the long run. The individual is assumed to make only one move in the course of a lifetime, their choice depending on location as well as on activities. The overriding objective, like with human capital and most other forms of migration, is to improve on lifetime earnings. A rational individual would expect to gain from moving, hence he is driven by the desire to maximise utility. For example, assuming an individual who is presently located in Africa *A* would obtain the income stream $y_k\ (t)$ in an Organisation for Economic Cooperation and Development (OECD) country with location *E*, the present value of his gain from moving permanently to E would be;

Where c_{AE} is the cost of moving from Africa to the OECD country, *r* is the discount rate and *T* is the individual's remaining years of working life.

2.2 Household migration models

This model assumes that households may be faced with more than one labour market problem and will spread their risk by working in different labour markets; for example, the wife may be working in Africa while the husband works abroad. The husband, working abroad, will therefore make remittances to the family in Africa. Such remittances will undoubtedly have a major positive economic impact at home, either in terms of improving the family's purchasing power or their investment potentials.

Such remittances would also go a long way in educating the children as well as other members of the extended family, which invariably improves their future earning potentials.

2.3 Asymmetric information migration models

The perfect market model assumes perfect information, both on the supply and demand side. However, the market is said to fail when there is asymmetry of information. Asymmetric information models assume that migrants know what their own skills are, but do not know what employers' needs are. In the same way, employers know their needs but cannot determine migrants' skills accurately.

2.4 Network migration models

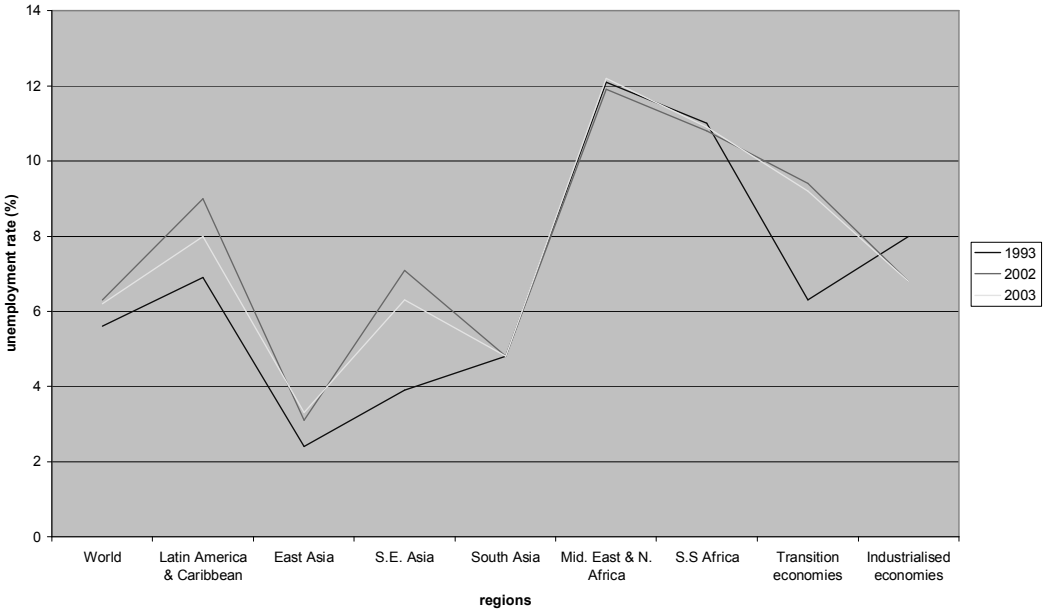
Here, migrants follow former migrants from the same source regions. For example, it is known that Nigerian migrants from a specific part of the country tend to move to a specific part of the United States of America (USA), while migrants from another part of Nigeria tend to migrate mostly to the United Kingdom. In this instance, there is improved information about the destination countries, such that potential migrants know where they are going and what to expect. This type of migration could potentially improve employers' knowledge, having already employed people from similar countries or regions.

However, there are economic as well as non-economic reasons for migration, usually couched in terms of push, pull and facilitating factors. We discuss the push-pull factors here as well as the facilitating factors.

Some of the economic push pull factors are related to labour market conditions in either the source country or destination country or both. Large-scale unemployment and underemployment in Africa is said to be a major cause of out migration. In some cases, the few medical staff remaining within African countries have to work more because health care facilities are understaffed. Heavy workloads and increasing pressure on the remaining staff leads to low morale, which may eventually cause some health care professionals to leave their countries. In a number of cases in Africa, specifically in Nigeria, qualified doctors and nurses have been known to seek jobs in other fields such as banking and some have engaged in trading because they cannot find jobs in the medical professions, in what may be correctly termed brain waste. In 2003, Liberia (an African country) was in the Guinness World Records as the country with the highest rate of unemployment, with 85% of its labour force not in paid employment. Generally, Africa is known to be among the countries with the highest rates of unemployment in the world, according to the International Labour Organisation (ILO). Unemployment figures from the ILO (in Figure 1) show that unemployment rates in sub-Saharan Africa have consistently been higher than the global averages since 1993 and well above averages for Asia during the period.

On the other hand, the changing age distribution of populations in developed countries, which has seen people living longer, has meant increasing demand for health care and qualified medical professionals. Added to this is recent OECD estimates that the labour force in the European Union (EU) is expected to contract by 5.55% by the year 2020. A short-term solution to this increasing

demand is to recruit already qualified health care professionals from abroad. The United Kingdom (UK) for example, is known to recruit 30% of its NHS workforce from abroad, with a substantial



1: Unemployment trends (1993-2003)
Source: Global trends in employment, productivity and poverty, ILO (2004-2005)

proportion of these coming from African countries. According to the Daily Mail, the UK National Health Service (NHS) has saved an estimated £2.7 billion by recruiting medics trained overseas, rather than training home grown staff.

Real and nominal, as well as perceived differences in wages between source and destination countries have also been blamed for the apparent migration of health care professionals from Africa. Skilled workers are attracted to rich and booming regions (Giannetti, 2003). For example, Hamilton and Yau (2004) report that while physicians' monthly salaries were US$50 and US$1,242 in Sierra Leone and South Africa respectively, their counterparts in Canada and Australia earned at least four times those in South Africa.

The need to acquire skills and in some cases, to use these skills, have been known to cause emigration of Africans. The highly skilled are more responsive to productivity differentials when taking migration decisions (Giannetti, 2003). Some African health care professionals have trained in highly skilled and technical professions and find it hard to be employed in their home countries. The only option for such people is to work abroad and hope that one day they would become employable in their home countries. Other reasons that have been advanced for emigration include the paucity or complete lack of professional support. Most health care facilities in Africa are poorly equipped

and poorly managed, and sometimes, basic equipment like CT scans are not available. The healthcare sector is dogged by limited organisational capacity, poor or less accommodating work environments and unrealistic workloads, which invariably lead to low staff morale. In Malawi, for example, the doctor-population ratio is 1:49,118 (the highest in the world), while in Uganda, one doctor is responsible for treating 24,700 patients (The World Bank, 1994). Also Niger is reputed in the Guinness World Records to be the country with the fewest hospital beds per population with 0.1 per 1,000 people between 1990 and 1998.

Non-economic factors instigating outward migration and brain drain from Africa include political instability (which lead to wars and other forms of unrest), socio-cultural as well as religious factors. In some African countries, it is socially acceptable to travel abroad. Some people travel abroad simply because their neighbours or relatives have previously travelled abroad, a phenomenon which the network migration model seeks to explain. People from French-speaking African countries have predominantly travelled to France and other French-speaking countries in the OECD while those from English-speaking African countries have migrated to the UK, USA and other English-speaking OECD countries. Others have travelled to countries where they expect to find people of similar cultures or religious affiliations. For example, Christians and Muslims travel to areas of religious importance such as Israel and Saudi Arabia, where they expect to stay close to the roots of their religious beliefs.

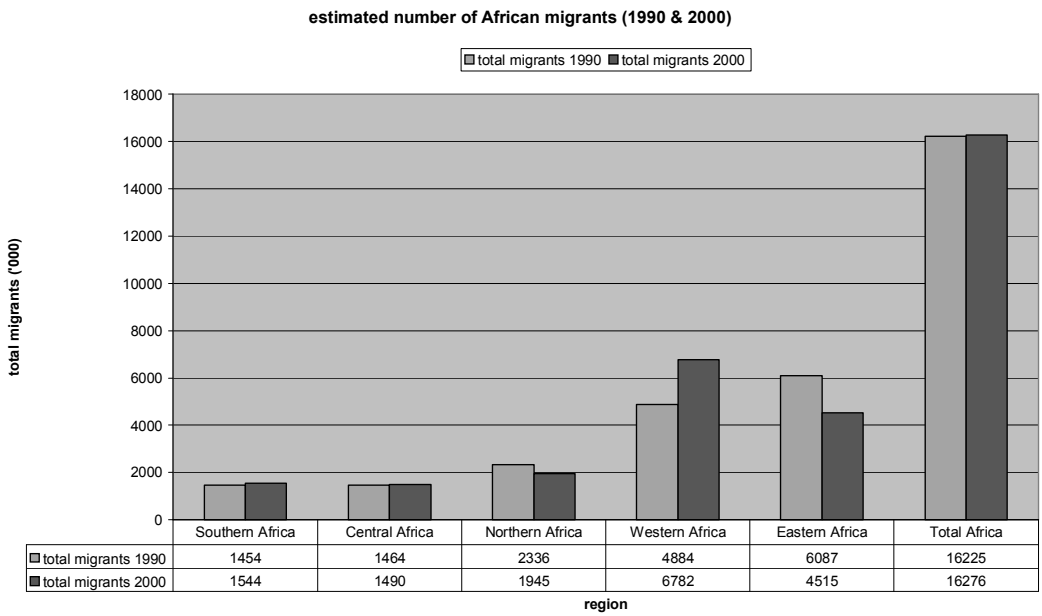
3. Facilitators of migration and brain drain (creating the enabling environment)

International telephone communication has become easy. More so, improvements in transportation, especially in air travel, have made it easier to travel between countries and between continents, especially following the introduction of huge and faster aeroplanes like the Boeing 777 or the Airbus A380. The Internet revolution has also made it easier for potential employers to advertise jobs as well as for potential job seekers to access these jobs online. One of the effects of improved communication is the fact that the world is fast becoming a global village. Globalisation also makes it easier for people to move from place to place and consequently, labour supply becomes more geographically mobile. Added to this is the fact that it is easier now to obtain travel visas and work permits. Most OECD countries are engaged in targeted migration in a desperate bid to recruit much-needed professionals from overseas. Examples of these targeted migration include the Diversity Immigrant Visa Program (otherwise known as the Green Card lottery) in the USA, the point systems in Australia, Canada, New Zealand and the UK, to name a few, as well as the Fresh Talents Initiative in Scotland. African health care professionals are not left out in these targeted migrations. We present some evidence of migration and brain drain in the next section.

4. Evidence of migration and braindrain (some statistics)

The greatest problem involved with studying migration and brain drain is the paucity or complete absence of reliable data. The issue of brain drain is a potentially politically sensitive one both for the source country (because it opens up issues about the inadequacy of jobs and the enabling environment to keep their nationals) and for the destination country (which is more often accused of 'poaching' or 'stealing' workers from countries who have invested huge sums of money and time in training and developing them). United Nations figures (Figure 2 and 3) showed substantial increases in total number of migrants from various regions in Africa in 1990 and 10 years later. Migrants from West Africa recorded the largest increases in the 10-year period. There was a substantial decrease in the number of migrants from East Africa and a slight decrease in migrants from North Africa. Migrant populations from Southern and Central Africa increased in 2000, relative to 1990. Regarding the proportion of the population migrating, Southern, Eastern and Western Africa recorded the highest proportions respectively in 1990. However, in 2000, the proportion of the population of migrants in all regions, except Western Africa, fell. More and more people from Western Africa have been leaving the continent than from any other region in Africa, and their destinations are usually the OECD countries. The flow of African migrants is usually to the countries that had previously colonised them. For example, migrants from English-speaking African countries usually migrate to the UK and other English-speaking countries, while their French-speaking counterparts usually migrate to France and some parts of Canada. A significant proportion of these migrants are skilled and highly skilled professionals, a large proportion of who are medical personnel. Recent evidence from the World Bank suggests that even though the absolute number of African migrants in the OECD countries is small compared to those from other continents, the proportion of skilled migrants from Africa to these countries is among the highest, relative to other continents (Figure 4). By the year 2000, there were more skilled African migrants in the USA, than there were in the EU. For example, there were more skilled emigrants from Nigeria than there were from any other country in Africa or from Brazil, Ukraine or the Philippines (Figure 5).

"There is a global shortage of health workers and Africa is one of the key suppliers" (IOM, 2005: 38). It is not difficult to understand how health care professionals from the continent will fill this shortage since Africa is reputed to be the continent with the most mobile population in the world (Curtin, 1997). The British Medical Journal (BMJ) estimates that 23,000 health care professionals emigrate annually from Africa, a figure which the South African Institute of International Affairs corroborates (SAIIA, 2003). There are more African scientists and engineers in the USA than in Africa (IDRC). According to the United Nations Commission for Africa (UNECA), some 127,000 highly qualified African



	Southern Africa	Central Africa	Northern Africa	Western Africa	Eastern Africa	Total Africa
total migrants 1990	1454	1464	2336	4884	6087	16225
total migrants 2000	1544	1490	1945	6782	4515	16276

Figure 2: Estimated number of African migrants (1980-2000)
Source: Population Division, Department of Economic and Social Affairs, United Nations (2004)

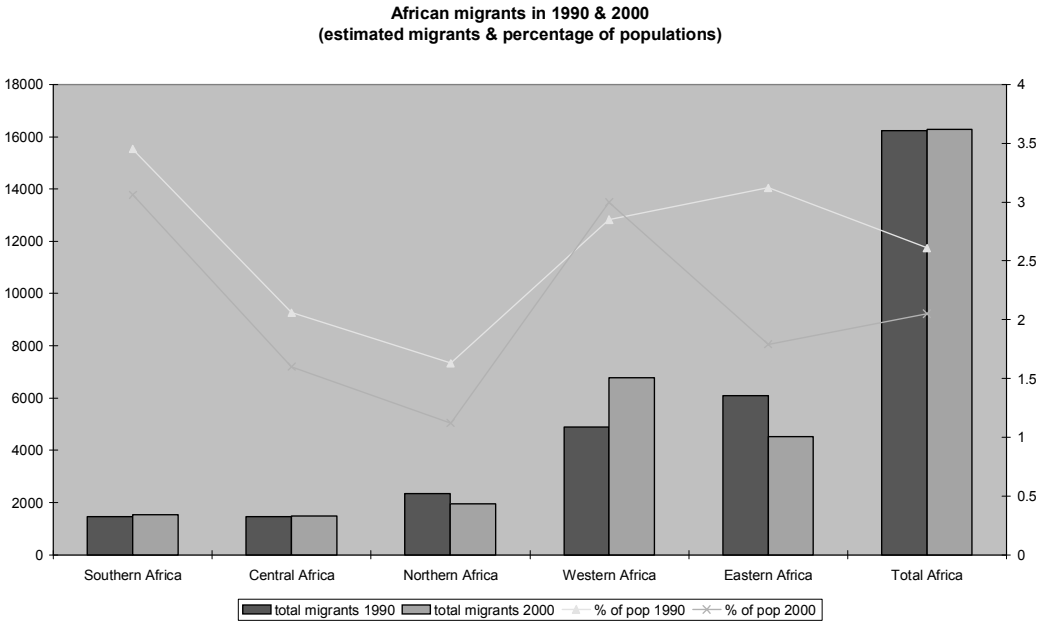


Figure 3: African migrants in 1990 & 2000
Source: Population Division, Department of Economic and Social Affairs, united Nations (2004)

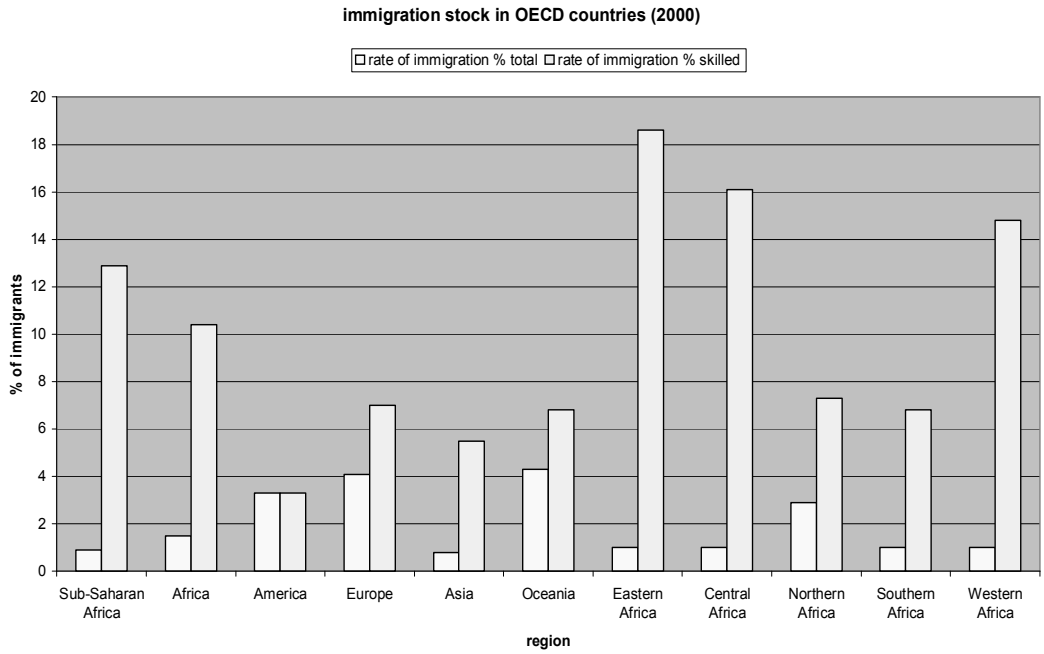


Figure 4: Immigration stock in OECD countries (2000)

Source: Extracted from International migration, remittances and brain drain. Ozden C and Shiff M (eds.). The World Bank 2005.

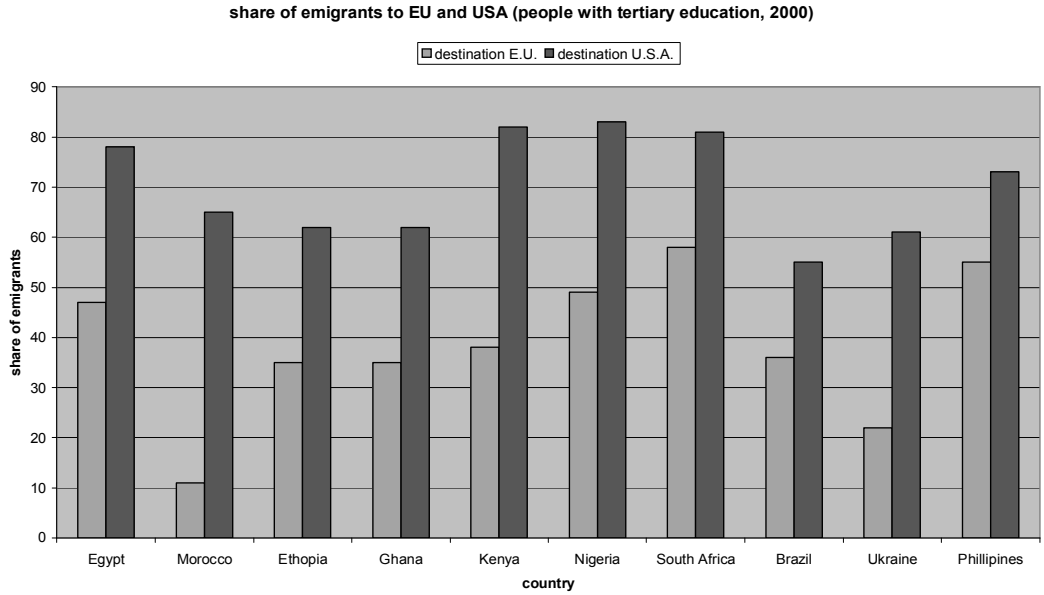


Figure 5: Share of emigrants to EU and USA (people with tertiary education, 2000)

Source: extracted from International migration, remittances and brain drain. Ozden C and Schiff M (eds.). The World Bank 2005.

professionals left the continent between 1960 and 1989. According to the International Organisation for Migration (IOM), over 300,000 African professionals reside outside Africa, while the continent has been losing 20,000 professionals each year since 1990. Ethiopia, for example, lost 75% of its skilled workforce between 1980 and 1991 (IOM).

Recent figures released by the IOM showed that between 1993 and 2002, Ghana lost 630 medical doctors, 410 pharmacists, 87 laboratory technicians and 11,325 nurses to international migration and brain drain (IOM, 2005). More than a quarter of foreign nurses registered in the UK in the year 1999-2000 came from South Africa (Figure 6). According to Migration Watch UK, South Africa is among the three countries supplying the largest number of overseas nurses to the UK (the others are The Philippines and India). Other African countries such as Nigeria, Zimbabwe, Ghana, Kenya, Zambia and Malawi are among those countries whose qualified nurses have emigrated and have been practising in the UK since 1998/99. To date, Africa remains a significant source of much needed nurses for the UK NHS. In 2003, 43% of nurses registering in the UK, for example, were foreign trained, compared to 10% a decade earlier (Buchan et al. 2004).

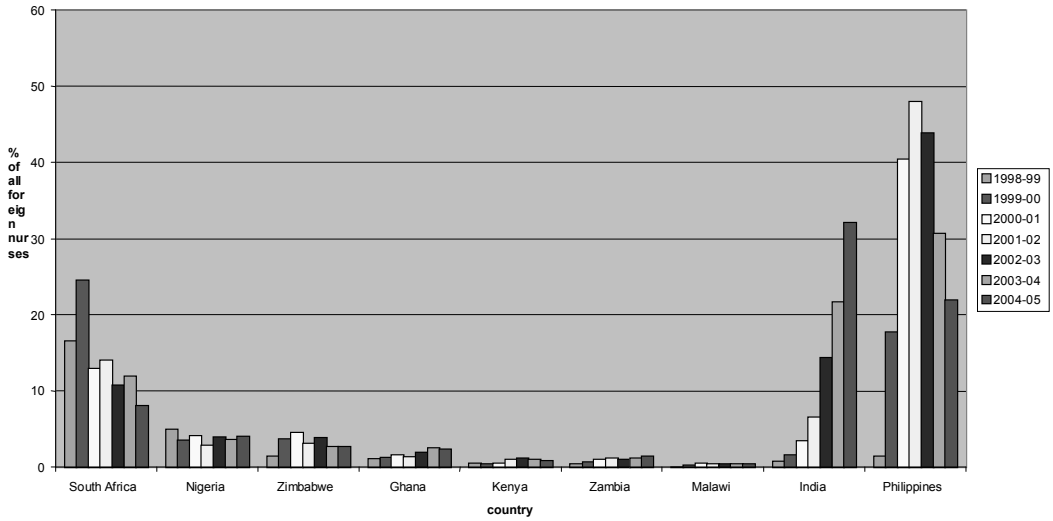


Figure 6: Foreign nurses in the UK (1999-2005)
Source: Nursing and Midwifery Council, UK (www.nmc-uk.org)

5. Effects of migration and brain drain on Africa

There is hardly any African country whose health system is not facing a crisis, not least the increasing incidence of diseases such as HIV-Aids, malaria and other communicable diseases. Added to these problems is the growing number of health care professionals that leave their home countries in search of greener pastures abroad. Every country requires the collective combination of the factors of production (land, labour, capital and enterprise) in their development efforts. For one, the problem of brain drain negatively affects labour, capital and enterprise. The United Nations (UN) opines that emigration of African professionals is one of the greatest obstacles to Africa's development. Emigration leads to loss of fiscal income. For example, who will pay taxes that are required to provide funds for the provision of basic services and infrastructure, if there are no professionals working within their countries of origin in Africa?

The effects of brain drain are varied and mostly negative on the continent and on the individual source countries. It leads to loss of much needed human resources and puts pressure on those who remain. It also leads to loss of return to investment on the education of young health care professionals, including doctors, nurses and allied health professionals. South Africa had 600 of its medical graduates registered in New Zealand (Bundred and Levitt, 2000) and it costs South Africa an estimated US$37 million to train these 600 medical graduates who have been lost to brain drain.

Another result of the problem of brain drain is that African countries continue to depend on loans, gifts, grants and expatriate labour from the OECD, to fill the human resources gap created by brain drain. This costs a lot of money either in terms of paying such expatriate workers (for work that could have been done by African professionals) or to repay loans that were secured for these purposes. Evidence suggests that Africa employs up to 150,000 expatriate professionals at a cost of US$4 billion a year (Tebeje, 2005).

Brain drain of health care professionals leads to under provision of vital health care services and also to immense pressures and workload demands on those who stay. A total of 38 out of 47 sub-Saharan African countries fall short of the minimum World Health Organization (WHO) standard of 20 physicians per 100,000 people in the year 2000. Malawi is in the Guinness World Records as the country with the lowest per capita doctor population, while 1 in 5 doctors and 2 in 5 nurses from Malawi are emigrating to the UK every year. According to the WHO, in 2000, the Zambian Medical Council registered 800 doctors, while 1,500 were needed. The short fall was a result of brain drain.

All the above-mentioned problems go further to exacerbate the problems of disease, poverty and underdevelopment in Africa, while at the same time widening the gap in development, science and technology between Africa and the West.

However, recent literature makes a case for brain-drain-induced brain gain (for example, Mountford, 1997; Stark *et al*., 1997, 1998; Vidal, 1998; Beine *et al*., 2001, 2003; Stark, 2004; Stark *et al*., 2004; Docquier and Rapoport, 2004;). Researchers assume that if a proportion of skilled workers migrates and earns a higher wage abroad, the brain drain raises the expected return on education. This in turn induces additional investment in education (brain gain) in the source country, which may result in a net brain gain, which in turn leads to increased welfare and growth, assuming that the resulting brain gain is larger than the initial brain drain. However, based on both static partial and general equilibrium conditions, Schiff (2005) argues that the positive net brain gain claims might be an exaggeration and shows that a beneficial brain drain cannot take place, since a net brain loss is likely during the transition between brain drain and brain gain.

Other researchers have preferred to argue for brain drain in terms of remittances (Figure 8), (Adams, 2003; Kuznetsov, 2005; Lucas, 2005). Remittances amount to more than $75 billion a year, representing more than 50% of total official development assistance around the world (Kuznetsov, 2005). Javorcik *et al*. (2004) argue that increased Foreign Direct Investment (FDI) to given source countries from the USA were the results of having skilled immigrants from those source countries.

Figure 7: Official worker remittances (real US $)
Source: Adams 2003

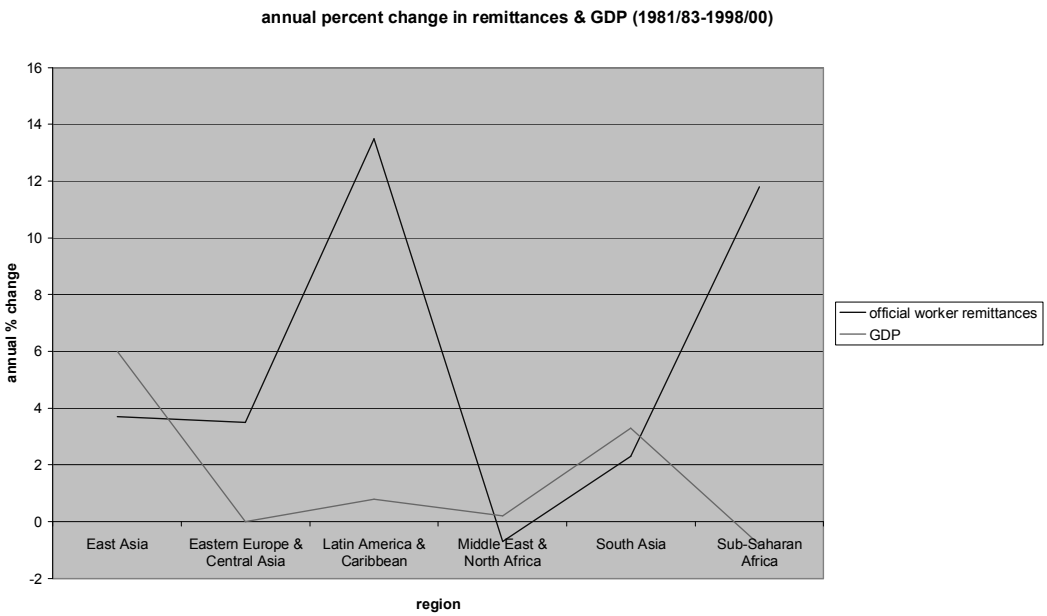


Figure 8: Annual percent change in remittances & GDP (1981/83 – 1998/00)
Source: Adams 2003

6. What can be done about migration and brain drain?

Response to the problem of brain drain in Africa is varied. The following two quotes have completely opposing views.

"For developing countries, brain drain might be a better solution than what they call brains in the drain. In poor countries, many bright people do not have the opportunity to fully use their capacity. If persons are bright, they should not be stopped from using their full capacity, be it in their own country or abroad. Africans that go abroad may return in twenty years time and help develop their continent". Norbert Mao, MP – Uganda (Parliamentary Network on the World Bank committee on international trade for development, February 28, 2005).

"Every rich country can afford and should aim to train as many health care workers as it needs. To poach and rely on highly skilled foreign workers from poor countries in the public sector is akin to the crime of theft". Editorial, The Lancet.

At the end of the day, the problem (of brain drain) is an African one, hence its up to the Africans to do something about it. Destination countries (like those of the OECD) are resorting to short-term solutions to their long-term labour force needs. In most cases, African professional health care workers have migrated voluntarily and most of them are happy to stay away from home. These migrants always return home at intervals, basically because of family ties. It is therefore natural to start to address the problems of brain drain by making the situation 'right' at home.

The first thing African governments (affected by the problem) must do is to improve monitoring, collection and dissemination of data on qualified health care professionals (both those at home and those who migrate). Most African governments cannot readily provide information on the number of their qualified health care professionals who have migrated. Such information will not only help in monitoring the flow of professionals, but will also be useful in making a case against the poaching of such professionals by more wealthy countries.

Its up to the governments of Africa to make economic, social and political conditions in their various countries better. In some cases where home supply exceeds demand, the governments should be instituting policies that favour job creation and investments, especially in the private sector. The National Youth Service Corp (NYSC) scheme in Nigeria provides opportunities for newly qualified Nigerian graduates to work compulsorily in the country for at least one year before they are free to make their own career movements. This one-year national service prepares the new graduate for the labour market and also serves to familiarise the young graduate with the local work environment

and work culture. Governments should also make efforts to provide and improve enabling environments for professional development by creating opportunities for training, as well as providing basic infrastructure such as quality roads, electricity, and drinking water. Some level of political and social stability will also go a long way to reduce the problem. Some African countries have been known to be politically unstable within the last 10 years; for example, Rwanda, Sudan, Angola, Cote d'Ivoire, Sierra Leone, Liberia, and Democratic Republic of Congo.

Kuznetsov and Sabel (2005) view migration of skills as a 'win-win' for all countries involved, from a perspective of new industrial policy, making use of open migration chains and Diaspora networks to maximise benefits for both source and destination countries. Ellerman (2004) reviewed some policy options for the source country, aimed at reducing the effects of brain drain. These included reinforcing the logic of commitment to lessen the brain drain, as well as re-involving the Diaspora back in their home countries. African governments could create better links with Diaspora organisations, which could help encourage qualified African health care professionals (among others) to identify with the development of their countries of origin, especially if they are given a sense of belonging and responsibility in their various countries. Examples of such networks exist in Africa (such as Nigerians in the Diaspora Organisation – NIDO, as well as in South Africa. Other Diaspora organisations have been set up in Asia (for example, India, China, Korea, Taiwan), in South America (Mexico) or in Europe (.for example, Globascot in Scotland). The Globascot network initiative seeks to harness Scottish expertise housed in leading businesses around the globe and mobilise that expertise as a means to economic betterment within a global knowledge economy. That is, it seeks to tap from the enormous intellectual potentials of the Scottish Diaspora. Alternatively, governments could take advantage of the creation of virtual participation (Brown, 2000), which would encourage health care professionals abroad to contribute to knowledge sharing (with those at home) by mobilising highly skilled medical expatriates through the Internet.

In some cases, trade in services could be encouraged, so that the source countries in Africa reap some reward (from destination countries) for their health care professionals working abroad. Kuznetsov (2005) predicts that the brain drain will continue to increase both from developed and developing countries. African countries could institute bilateral as well as multilateral agreements to manage migration flows effectively. The government of the Philippines already has an arrangement with the UK NHS to supply nursing labour, while Ghana also has a similar arrangement with the NHS for certain nursing specialties.

Destination countries (like those of the OECD) should be encouraged to develop more innovative ideas in training more medical personnel, as a long term solution, to meet rising home demand for services in their various countries. They should also be encouraged to reimburse (better) countries whose nationals are working in their countries. Their efforts at arrangements with countries such as the Philippines and Ghana are laudable, but there is also scope to do more and better. Destination countries could also encourage remittances by African expatriates by providing easier and cheaper options to transfer money to Africa. Alternatively, they can help by reducing the taxes that are paid by African migrants in their various countries (Bhagwati, 1976; Bhagwati and Wilson, 1989). This will

help boost emigrants' disposable income and increase the amount of money available for remittances to their home countries.

We could also appeal to these destination countries to be more ethical about poaching healthcare professionals from African countries that are already seriously suffering from the effects of brain drain. In this regard, some authors have shared very strong views:

"…from an ethical point of view, selective and targeted 'raiding' of developing countries' medical workforce by wealthier countries is not acceptable" Dauphinee, 2005.

"..the ethics of national policies which allow countries to recruit en-masse the most qualified physicians, at no cost or penalty to themselves, should now be challenged" Bundred and Levitt, 2000

The role of international organisations such as the United Nations Organization (UNO) and the International labour Organisation (ILO) to create and enforce rules of engagement is also sacrosanct as arbiters in migration of skilled health care professionals between nations. These organisations could also be encouraged to develop and monitor compensation arrangements for trade in the services of skilled medical workforce between source and destination countries.

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