

# The nature, extent and impact of the brain drain in Zimbabwe and South Africa

First submission: 19 November 2008

Acceptance: 14 August 2009

Brain drain is regarded as one of the greatest threats to socio-economic development in Africa. The need to reverse brain drain and reposition Africa in the twenty-first century cannot be overemphasised. The current situation in African countries demands that Africa should embark on a radical project to redeem itself from poverty, underdevelopment, disease, and hunger. This article examines the nature, extent and impact of the brain drain in Zimbabwe and South Africa. The problem of brain drain is urgent and merits high-level attention by African governments.

## La nature, l'étendue et l'impact de la fuite des cerveaux au Zimbabwe et en Afrique du Sud

L'exode des cerveaux est considérée comme l'une des plus grandes menaces au développement socio-économique en Afrique. La nécessité d'inverser la fuite des cerveaux et de repositionner l'Afrique au vingt-et-unième siècle ne peut pas être surestimée. La situation actuelle dans les pays africains, demande que l'Afrique doit s'engager dans un projet radical de se racheter de la pauvreté, le sous-développement, la maladie, et la faim. Cet article examine la nature, l'étendue et l'impact de la fuite des cerveaux au Zimbabwe et en Afrique du Sud. Il ne fait aucun doute que le problème de la fuite des cerveaux est urgente et mérite l'attention de haut niveau par les gouvernements africains.

*Ms E Gwaradzimba, Faculty of Education, Africa University, Mutare, Zimbabwe & Prof A Shumba, Dept of Teacher Education, Faculty of Humanities, Central University of Technology, Free State, Private Bag X20539. Bloemfontein 9300; E-mail: gwaradzimbaellen@yahoo.com & ashumba@cut.ac.za*



*Acta Academica*  
2010 42(1): 209-241  
ISSN 0587-2405

© UV/UFS

<[http://www.ufs.ac.za/journals\\_ActaAcademica](http://www.ufs.ac.za/journals_ActaAcademica)>

SUN MODIA  
BLOEMFONTEIN

The movement of highly skilled people from one country to another is currently a hotly debated issue among policy-makers because the brain drain is not an exclusively African problem; it is a global phenomenon.<sup>1</sup> To some extent, every country in the world loses highly educated and skilled individuals to other countries. However, its magnitude, direction and causes differ from one country to another. Emigration of highly qualified academics from African higher institutions of learning was one of the central topics of discussion at the World Summit on Sustainable Development in South Africa in November 2002. Labour experts at the Addis Ababa-based United Nations Economic Commission for Africa reported that approximately 23 000 lecturers from African universities continue to emigrate each year and that in less than two decades sub-Saharan Africa has lost a third of its skilled professionals. The cruel irony is that these are being replaced by 100 000 expatriates from the West at a cost of US \$4 billion a year (Kigotho 2002). Although the above scenario paints a very gloomy picture for African countries, the amount remitted by migrants to developing countries far exceeds foreign assistance (De Wind & Holdaway 2005). Most migrant professionals send money to develop their own countries either by building houses, buying taxis and buses, or even feeding their families during hard times.

## 1. Towards a paradigm shift in defining brain drain

The term “brain drain” represents the loss of highly skilled professionals, such as physicians, engineers, scientists, educators, university professors, and so on, from one country to another as they are strongly attracted to different living conditions, opportunities for professional advancement, the existence of an environment that is conducive to peace and security, and a host of other factors (cf McDonald & Crush 2002, Sako 2002). From the outset, therefore, it may be safely concluded that the root cause of brain drain is underdevelopment, or the inequality that exists between the rich and poor nations of the world.

1 Cf Ammassari & Black 2001, Brandt 1980, McDonald & Crush 2002, Sako 2002, Shinn 2002.

In the African context, the notion of brain drain is used to capture the dilemma facing underdeveloped states in their interaction with the relatively advanced states. The bone of contention is that the transfer of intellectuals from resource-poor to resource-rich countries represents a “brain gain” for the latter. The cost of producing these intellectuals is borne by the poor countries, whereas the country of destination reaps the benefits. Thus, for the recipient country, the phenomenon of “brain drain” expands its overall national wealth and, in particular, strengthens its human resource base. Brain drain is therefore regarded as a form of “intellectual colonization” by the first world (Oduor 1994). To Africa, it is an index of its inability to compete with the north, and an important symbol of the gains which northern states make at their expense.

In current usage, the term “brain drain” is often used interchangeably with such terms as “human capital flight” (Sako 2002: 5); “quality migration” (Todisco *et al* 2003 24); “skilled international migration” (Findlay 1996: 3); “intellectual migration” and “skilled international labour circulation” (Zezeza 1998: 21); “professional transient” (Appleyard 1991: 2); “brain mobility” and “migration of expertise”, and “reverse transfer of technology” (Dowty 1986: 157). Other usages recently emerging from third-world scholars include “intellectual colonization” (Oduor 1994: 1); “intellectual desertification” and “brain haemorrhaging” (Sankore 2005: 9).

Although globalisation has initiated an ongoing process of reciprocal osmosis among different countries where the transfer of professional skills from one place to another now forms part of an economic system in which human resources are available to various systems of production irrespective of where they are located, there is no reciprocal osmosis between the rich and poor countries in the global economic and labour market system that is said to be transcending international boundaries. This globalisation is fraught with inequities and exploitation of resources, both human and material, of the poor by the rich, and has increased poverty and underdevelopment in less developed countries, as Buthelezi (2007: iv) rightly observes: “while globalization shrinks the world, the distance between its richest and poorest grows remorselessly”. In view of the foregoing, it is

essential that the term “brain drain” be redefined so as to expose the evils of capitalism and neo-imperialism. In the true sense of the term “brain drain” should be defined to mean:

a deliberate and systematic act by a country of superior power relations to consistently and persistently draw off, pump out, withdraw, remove, empty, or hemorrhage highly skilled persons from a poor-source country using direct or indirect means such as coercing, enticing or creating unfavourable socio-political and economic conditions which make staying at home unbearable, thereby forcing highly skilled professionals to leave their country.

## 2. The brain drain strategies adopted by the West

### 2.1 Structural adjustment programmes

While the majority of the economic problems that beset the African continent have been attributed mainly to domestic mismanagement, inappropriate economic policies, and corruption by the ruling elite, some authors went beyond the domestic politics and tried to critically examine how international forces contribute to the continent’s economic woes that have resulted in massive losses of human capital from the continent. Some authors have singled out globalisation, IMF and the World Bank, dubbed “the weapons of mass destruction”, as the instruments used by the imperialists to recolonise Africa (cf Oduor 1994, Sankore 2005, Zeleza 1998). These authors are of the opinion that historical and continued economic exploitation of Africa which has undermined the development of economic and social infrastructure and normalised poverty, has forced many African intellectuals to seek job satisfaction and a higher standard of living elsewhere. Oduor (1994: 1) argues that brain drain is a new way of recolonising Africa. According to Oduor, the goal of recolonisation of the African continent is done by defunding African institutions by means of massive cuts in subsidies to education which the IMF and World Bank impose on African governments as part of their conditions for new loans or for debt payment rescheduling. Oduor also argues that with the introduction of SAPs in most African countries, academics find themselves among the worst paid in the world. Since academics also want to get

a better living, they have to move on to other places where they can earn a better life. Besides better living conditions, academics in the diaspora also get international exposure by their interaction with other professionals from other parts of the world.

## 2.2 International scholarships

Literature has shown that international scholarship schemes organised by rich countries of the north are exacerbating the problem of brain drain, in particular in Third-World countries. These programmes are designed to entice the cream of the crop from Africa and other Third-World countries. For instance, in 2004, Britain introduced the Science and Engineering Graduates Scheme (SEGS) under which non-Europeans who have graduated from a British institution in physical science, engineering and mathematics can take up employment in Britain for a year after qualifying. Successful applicants are taken from the cream of the crop and should have attained a second-class honours degree or higher. The scheme was introduced after the government commissioned a review into the “supply of science, technology engineering and mathematical skills”. In the review released in 2002, Sir Gareth Roberts stated: “the shortage of science and engineering skills could hamper Britain’s future growth and undermine the government’s attempts to improve British productivity and competitiveness.” He said that he “had found a number of serious problems in the supply of people with requisite high skills”. In most instances, migrants are generally allowed to bring in their spouses, dependents and children once they qualify for the majority of British work visas. This implies that migrants and their families benefit from interactions with locals and other nationalities. Despite the fact that it might take a while to adjust, migrants have the opportunity to learn other languages and cultures.

In addition to the above schemes, the British government and NGOs have also put in place various scholarship programmes for study at British universities. Some of the most prestigious are the Chevening and Rhodes scholarships. The Chevening scholarship is mainly funded by the Foreign and Commonwealth Office and administered by the British Council. The scholarships are aimed

at helping recipients “gain skills that will benefit their countries”. Sadly, for their home countries, some of the scholars find their way back to Britain. Many remain in Britain or go home briefly and then return, but still maintain contact with their relatives.

### 2.3 Migration policies of the north

A study conducted by the Zimbabwean Scientific and Industrial Research and Development Centre (SIRDC) (2004: 9) found that the US was using special visas (HB-1 visa) and higher salaries to attract African professionals with technical expertise. As a result it is estimated that the US economy gains approximately US \$100,000 a year from each HB-1 visa immigrant. By one estimate, the USA and Canada enjoyed a “brain gain” during the 1961-1972 period equivalent to US \$46 billion, in terms of educational costs saved by importing already-trained experts and technicians (Dowty 1986: ). Third-World nations complained that they were losing substantial numbers of their own skilled professionals and this amounted, they maintained, to a subsidy of those who least needed it by those who could least afford it. Because of their economic might, the immigration policies of rich nations, including the USA, Canada, Britain, Australia and New Zealand, have sought to attract or lure highly educated professionals, both to bolster their competitiveness and fill domestic skills gaps. Slowly, and without many noticing, a new threat to Africa is taking shape through these mass immigration schemes for highly trained and skilled Africans. These programmes have seen Africa currently haemorrhaging its best brains at an alarming rate. Sankore (2005: 9) describes the brain drain which started as a trickle and which has now become a flood that threatens to cause what he describes as “the intellectual desertification” of the continent.

The brain drain from the African continent has even assumed political connotations, with President Robert Mugabe of Zimbabwe accusing Britain, Zimbabwe’s former colonial ruler, of “stealing” medical doctors, nurses and pharmacists from the southern African nation (Nkwawu 2002). Unfortunately, some Zimbabwean doctors did not share the same views with their President because they do not perceive issues in the same way. They disputed Mugabe’s assessment

by saying: “we are not being stolen, we are seeking better pay and better standards [...] and no one can blame us for that” (Meldrum 2003: 1). Also frustrated by the growing trend of brain drain, the South African government has gone so far as to criticise Britain for “poaching” its skilled workers (SAMP 2003: 46). South Africa was particularly angry at Britain-based recruiters, accusing them of targeting the country’s best teachers in what the government calls “a crucial time in the nation’s development”. Since the late 1990s, more than 8 000 South African teachers have immigrated to Britain with the help of recruiting agencies (SAMP 2003: 46). Some of these problems facing developing countries are a making of our political leaders who have failed to create better working conditions for their own citizens.

The former president of the African Union, Alpha Oumar Konare, attacked the “selective immigration” policies of developed countries that draw scientists and other skilled workers away from developing countries: “these policies amount to a ‘brain trade’ that hinders African development” (Mouton *et al* 2007: 3). The same authors went on to say “industrialized nations took a ‘one-sided’ decision to ‘loot’ African countries of their brains, simply depriving Africa of its right to development” (Mouton *et al* 2007: 5). The USA, for example, has the Green Card Diversity Lottery programme, better known as the DV programme, that is intended to encourage the immigration of underrepresented nationalities to the USA. Currently, the annual worldwide quota is 50 000 immigrants. Under this lottery it should be possible to grant more than 21 000 permits to nationals of African countries (OECD 2003: 116). Countries such as Ethiopia, Nigeria, Ghana, Kenya and Morocco have made extensive use of the DV programme (Oduor 1994, Sankore 2005).

In September 2000, the BBC reported that

Home Office Minister Barbara Roche called for a debate on relaxing immigration rules to meet Britain’s skills shortage. Some key areas identified included the information technology sector, engineering, teaching, catering, agriculture and healthcare. UK officials highlighted the success such policies have had in the US, where officials cite immigration as a key factor underpinning the country’s extended economic boom (Sankore 2005: 12).

The key reasons why Western countries are not producing and training enough “home grown” people to sustain economic and social growth is their ageing population and the falling birth rates. This results in fewer children and more of the decreasing numbers are being consumed by a culture which rewards pop stars, athletes and movie stars more than skilled professionals and workers. According to Sankore (2005: 12), it is because of a serious staffing predicament facing these countries that the Western countries are exploiting economic situations in Africa to their advantage.

Besides the US Green Card Lottery and the British Highly Skilled Migrant Programme (HSMP), there are other American visa programmes that target highly skilled individuals, some permanent, and others temporary. The Immigration and Nationality Act provides an annual minimum of 140 000 employment-based immigrant visas (E-category). Outstanding professors and researchers fall in this category. The H-1B classification applies to persons in a specialty occupation that requires theoretical and practical application of a body of highly specialised knowledge requiring completion of a specific course of higher education. The O-1 classification applies to persons who have extraordinary ability in the sciences, arts, education, business, athletics or extraordinary achievements in the fields of motion pictures and television (Shinn 2002: 8).

Canada has also become an increasingly attractive destination for African immigrants. The number of Africans taking Canadian citizenship has grown. While migration under family sponsorship is important, Canada, more than the US, has increasingly emphasised the migration of skilled workers and business people. For example, in 1997, only 28% of immigrants were in the family class, 49% were in the skilled worker class, 9% in the business class and 11% were refugees (OECD 2003). The above findings clearly show that most migrants who moved to Canada are skilled professionals.

Over the past four years, Britain has led the way by putting a raft of aggressive measures in place to attract highly skilled migrants to Britain, often at the expense of African countries, who suffer critical skills shortages in areas such as health, science and technology. In a special chapter devoted to Africa, the 2005 World Migration Report

states that “Africa is now the only continent that still faces all of the classical obstacles to successful development”. One of these obstacles, the report emphasises, is “brain drain” which has continued steadily since independence and is depriving African countries of a very significant part of their skilled human resources, which they have trained at considerable cost” (Sankore 2005: 12). This implies that skilled professionals leave their home countries before paying back to their communities.

Unlike the vagueness of the Green Card Lottery that masks Africa’s real intellectual and skills loss, the European schemes and, in particular, the British Highly Skilled Migrant Programme (HSMP), a flagship introduced in January 2002 by the British government to allow “high fliers with exceptional skills” including Africans, the opportunity to live and work in Britain is very clear (Sankore 2005: 11). This scheme is based on a criterion which is more to the point. Based on qualifications, holders of PhDs score 30 points, MA, MSc or MBA holders earn 25 points and a BA or BSc earns 15 points. Spouses with degrees or equivalent professional qualification and job experience earn applicants an additional 10 points (Sankore 2005: 11). To cap it all, priority is given to professionals such as doctors who are entitled to work as general practitioners (GPs) in Britain. Such positions score 50 extra points, taking such applicants straight to the top of the table. The ultimate objective of the process “take the best and leave the rest” speaks for itself (Sankore 2005: 11).

Such has been the success of this scheme that just over a year after its introduction the government expanded it, putting in place various measures to make it easier to apply and to make younger applicants below the age of 28 eligible. By 2003, nearly 4 000 people had successfully applied for the scheme, among them many Africans. Beverley Hughes, Britain’s immigration minister at the time, stated that the HSMP migrants had “enriched the UK both economically and culturally in professions as diverse as academia, medicine and music” (Sankore 2005: 12). More changes have been made to the HSMP since April 2005 when the government announced a new provision allowing Masters in Business Administration (MBA) graduates from the world’s top business schools to work in Britain for a period of 12 months after they complete their courses. The Home Office stated:

The MBA provision within this programme addresses the weakness in the UK economy in the quality of management by attracting highly qualified and talented managers to the UK. This therefore means that Britain will be recruiting highly educated, mostly experienced migrants, some of them Africans, from some of the world's finest universities, trained at a great cost to their home countries (Sankore 2005: 12).

Literature has shown that industrialised countries increasingly need two types of immigrant labour: those willing to do poorly paid, dirty and dangerous jobs which their own nationals scorn, and highly specialised professionals such as software specialists, engineers, doctors, educationists and nurses. The USA has 126 000 fewer nurses than it needs and government figures show that the country could face a shortage of 800 000 registered nurses by 2020. As a result, industrialised nations have embarked on massive international recruitment drives. South Africa recently appealed to Canada to desist from recruiting its medical professionals. In the rural province of Saskatchewan, Canada, more than 50% of doctors are foreign-trained and 1 in 5 of the 1 530 doctors there earned their first medical degree in South Africa. According to former UN Secretary-General Kofi Annan, there is a clear need for international co-operation: "There are no easy choices or simple solutions to the brain drain problem" (SAMP 2003: 9). As we now live in the global village, African countries need to cooperate with the rest of the world.

The new threat to Africa therefore lies in the increasingly diverse mass evacuation schemes for highly trained and skilled Africans. Like the slave trade that took the most able-bodied Africans, an analysis of current official statistics and processes reveals the other implications of mass migration schemes that threaten Africa with yet another net loss of quality human resources. Sankore (2005: 12) states:

simply put, on a world scale, Africa runs the risk of sinking eventually to the exclusive status of an 'intellectually barren ghetto' once the majority of its highly trained and skilled professionals, workers and intellectuals have been vacuumed by successive annual waves of assorted visa and migration schemes.

Needless to add, the development consequences would be catastrophic for those left behind (Sankore 2005).

### 3. Magnitude of brain drain from Zimbabwe to the West

The magnitude of brain drain from Zimbabwe to the West is abundantly clear. For instance, 18 000 of Zimbabwe's nurses work abroad; mainly in Britain, and of the 1 200 doctors trained in the 1990s, only 360 are practising domestically. A recent article in the *Zimbabwe Situation online* (Anon 2007) shows that one fifth of Zimbabwean-trained nurses were recruited to work in Britain in 2006, despite rules supposedly banning hospitals from poaching staff from the world's poorest countries. This article also reports that The World Health Organisation estimates Zimbabwe to have fewer than 9 000 nurses left, giving a ratio of 1 nurse:1 400 people, compared with 1:156 in Britain. The Home Office granted work permits to 1 610 Zimbabwean nurses in 2006, far more than the numbers being trained in the country each year. It is estimated that there are 300 junior, 150 middle-ranking and less than 100 specialist doctors in Zimbabwe. This translates to a doctor/patient ratio of 1:21,000. Health experts say Zimbabwe needs approximately 2 000 general medical practitioners and more than 500 specialists for the country's hospitals.

Britain, Australia, and the USA are the biggest poachers of doctors and nurses and other health practitioners from Zimbabwe and other developing nations. In 2003 alone, a total of 2 825 work permits were granted to doctors and nurses from Zimbabwe in Britain while 5,880 work permits were issued to health professionals from South Africa. It is estimated that 40% of the 11 640 nurses' posts in Zimbabwe are vacant while there is only 45% of the required doctors. Health statistics indicate that approximately 12 500 doctors currently working in Britain are from African countries such as Ghana, Malawi, Zambia and Zimbabwe which are facing an acute shortage of health-care workers. Although Africa appears on the Governments' list of states "that should not be recruited from", 5 200 doctors and nurses were hired from African nations in the same year (Anon 2007). Information from South African medical schools suggests that one-third to one half of their graduates migrate to developed countries, mainly Canada, Britain, and New Zealand. WHO

estimates that Zambia's health system needs 1 500 doctors but there are only approximately 800 doctors registered in the country (only 50 of whom working in the public sector), while many have migrated to work in affluent countries. The loss of nurses to developing countries is also extreme. Ghana loses more nurses annually to foreign employment than its nursing schools can graduate. African health workers who migrate represent a serious economic setback to their countries. Many African governments heavily finance these workers' training. The UN Commission for Trade and Development has estimated that each migrating African professional represents a loss of US \$184 000 to Africa, while Africa spends US \$4 billion a year on the salaries of 100 000 foreign experts. These findings clearly show that Zimbabwe and South Africa have lost many skilled professionals to developing countries. As such, the home countries need to create conditions conducive to attracting skilled professionals to invest in their home countries. This could be done by providing incentives to those willing to invest in economic developmental projects in their home countries.

The magnitude of the brain drain from Africa appears to be getting out of proportion. For example, in 2005 alone, six African countries were in the top ten countries with the greatest number of "winners" of America's Green Card Diversity Lottery (Sankore 2005: 10). Although the rules of the USA Green Card Lottery state that "all applicants must have at least 12 years of elementary and secondary schooling, equivalent to high school in the United States", indications are that successful African applicants are more highly qualified as shown in Table 2.

Table 2: African expatriates in the USA

Have the highest levels of education than any foreign-born residents
Are 48% more likely than Asian immigrants to be university graduates
Hold PhD degrees at double the rate of European immigrants
Are better educated than US natives
Hold managerial and professional positions that parallel the levels of European and Asian-born residents

Source: US Census Bureau, *2000 Census*

Table 3: Green Card lottery winners 2003, 2004 and 2005 – top 10 countries

2003	2004	2005
Ghana 6,333	Nigeria 7,145	Bangladesh 7,404
Nigeria 5,989	Ghana 7,040	Nigeria 6,725
Ethiopia 5,562	Ethiopia 6,353	Poland 6.211
Bangladesh 4,935	Kenya 5,721	Egypt 6.060
Ukraine 4,035	Poland 5,467	Ethiopia 4.997
Poland 3,855	Bangladesh 5,126	Ukraine 5,361
Kenya 3,194	Morocco 5,069	Morocco 5,298
Sierra Leone 3,096	Ukraine 4,494	Bulgaria 4,068
Morocco 3,083	Nepal 4,259	Ghana 3,974
Bulgaria 2,843	Egypt 4,189	Kenya 3,618

Source: Adapted from *New African* November (2005: 11)

While African development experts and politicians scramble for solutions to reverse brain drain, Western countries have moved swiftly to protect their economies and ensure future economic growth by attracting and retaining skilled Africans. Statistical evidence obtained from a recent study carried out on the brain drain from Zimbabwe's institutions of higher learning bears testimony of the critical shortage of academic staff in most institutions of higher learning in Africa (Gwaradzimba 2007, Mararike 2005). The vacancy rates in some well-established universities were extraordinarily high, with some departments recording vacancy rates of between 50% and 100%. The study also found that the Health Sciences were hit the hardest. The critical shortage of health science lecturers in institutions of higher learning was reminiscent of the overall staffing situation in the country's health institutions in Zimbabwe. The brain drain of health personnel has caused devastating consequences on the country's health delivery system. The government had to recruit Cuban doctors to man some of the health institutions after most Zimbabwean health personnel had migrated to Britain, US,

Canada, Australia and New Zealand (Gwaradzimba 2007: 10). An analysis of the vacancy rate in the Health Science Faculty by department was appalling. For example, Haematology had a vacancy rate of 86%, Anatomy 85%, Physiology 84%, Medicine 77%, Clinical Pharmacology 64%, Histopathology 63%, Anaesthetics 63%, Dentistry 58%, Medical Microbiology 58%, Obstetrics and Gynaecology 54%, Surgery 52%, Immunology 5%, Paediatrics and Child Health 50%, and Institute of Continuing Health Education 50% (Gwaradzimba 2007; Mararike 2005). The staffing situation in the Health Sciences can best be described as “disastrous”. For example, during the meltdown of the economy in Zimbabwe in 2008 professionals had to queue for all basic amenities such as food, fuel, sugar, and so on.

In its report, the US Department of State (2006) openly acknowledges that the already inadequate supply of health care workers in sub-Saharan Africa and the Caribbean is further affected by the “brain drain” of trained medical and public health personnel to industrialised countries. For example, the USA had 126 000 unfilled nursing posts in 2002; by 2015, this shortage will increase to 500 000. Canada currently needs 16 000 nurses and will need up to 113 000 nurses by 2011. In Britain, it was estimated that 15 000 foreign nurses were recruited for positions in 2001, with 35 000 more needed by 2008.

Mararike (2005: 7) reported that Canada, Britain, and the USA, had projected a shortfall of health professionals at an alarming rate. In Canada alone, within the next six years, there will be a shortfall of an estimated 113 000 nurses, 20 000 in Britain while the USA is reporting an expected shortage of 1 000 000 nurses by 2010. In 2006, Australia expected 31 000 nursing vacancies. The same author argues that the current shortage of nurses in western countries gave rise to an astronomical number of nurses migrating from Zimbabwe and other African countries to Britain, the USA, Canada, New Zealand, and so on (Mararike 2005: 7). The above scenario paints a gloomy picture of the state of affairs, in particular for those remaining behind because of the shortage of nurses and other professionals.

### 3. Magnitude of brain drain from South Africa to the West

Like Zimbabwe and other African countries, South Africa has not been spared by the brain drain of skilled professionals from various sectors of the economy. Statistics South Africa (StatsSA 2004) reported that skilled professionals leaving the country rose by 62%. For example, 192 medical practitioners left in 2003 compared to 117 in 2002. Teachers also left in large numbers to work in Britain and the USA, with 666 teachers leaving in 2003 compared with 410 in 2002; 736 people in the accounting profession emigrated in 2003 compared to 529 in 2002. This implies that the more professionals emigrate, the worse the conditions of those who remain.

Research shows that primary and secondary factors have led to the brain drain in South African schools. Primary factors include poor working conditions with ill-equipped classrooms (Berkson 2006); violence (Botha 2006, Mithilieni 2006); poor discipline in the school (Motseke 1998); workload (Berkson 2006, Hakanen *et al* 2006); crime, personal safety and poor working conditions (SAMP 2003). For example, with the banning of corporal punishment in schools, learner misbehaviour and indiscipline (Berkson 2006, Kiziltepe 2003) as well as school violence (Humphrey & Humphrey 1986) have increased because teachers have found it difficult to control learners using recommended alternatives. Secondary factors include socio-economic factors and inadequate remuneration (Berkson 2006, Motseka 2006).

In a report known as the Flight of the flamingoes carried out by the South African Human Sciences Research Council (HSRC) (Kahn *et al* 2004), the brain drain of scientists from South Africa was found to be four times greater than government figures suggest because official migration statistics show that almost 17 000 science and technology professionals left the country to seek employment abroad between 1994 and 2001 (Jones 2004). The report shows that these professionals move into other professional fields such as management and financial occupations on arrival at their destinations (Australia, Canada, New Zealand, Britain and the USA). In a recent study, Temkin (2008) found that crime was the most frequently cited reason for professionals

leaving South Africa for overseas destinations. For example, more than 80% of those surveyed mentioned crime as a consideration for leaving the country permanently. Businesses cited uncertainty about the future leadership of South Africa (15%); better business opportunities elsewhere (14%); race discrimination (13%); poor quality of education (10%); and poor quality of healthcare (10%). In this study, 72% of the businesses reported that their relatives or employees were affected by violent crime, including hijackings and housebreaking. In a similar vein, Crush (2008) found economic factors such as taxation and the cost of living along with social concerns such as safety and security to be the main sources of dissatisfaction for professionals leaving the country. As a developing country, South Africa cannot afford losing these professionals since it invests heavily in top-quality education to create the necessary skills for its internal social and economic development. As such, the government needs to address crime and security issues in order to curb the emigration of highly qualified professionals to developed countries.

#### 4. Impact of the brain drain on Africa

As the debate on the migration of highly skilled professionals rages on, one central question that has caused a lot of controversy has been whether brain drain has a positive or negative impact on developing countries. Migration studies conducted in different parts of the world to assess the impact of intellectual migration have produced contradictory results (Ammassari & Black 2001: 6). One divergent school of thought examines brain drain from the perspective of the highly detrimental effects arising from the loss of the brightest minds from developing countries, thus weakening capacity for development. On the other hand, representatives of the convergence school of thought argue that the problem of brain drain is over dramatised and is less critical than it is usually portrayed. They tend to emphasise the beneficial consequences of migration for both the receiving country and the sending country. However, available evidence shows that the negatives outweigh the positives as shown in the preceding discussion.

#### 4.1 Economic impact

One of the negative consequences of brain drain as identified by a number of authors is that brain drain fuels a vicious downward cycle of underdevelopment and poverty (cf Avveduto & Brandi 2001, Sako 2002, Todisco *et al* 2003). According to these authors, brain drain represents a major development constraint both in terms of development opportunities and lost investment in that it drains sending areas of their human capital that took enormous resources to nurture and produce. It is argued that the country with an outflow of emigrants loses critical human capital in which it has invested resources for education and specialised training and for which it is not compensated by the recipient country (Sako 2002: 5). Brain drain is thus often referred to as “an international transfer of resources in the form of human capital that is not recorded in any official balance of payments statistics”. For example, UNCTAD has estimated that one highly trained African migrant between the ages of 25 and 35, the age group of most of the Africans going abroad, represents a cash value of US \$184,000 at 1997 prices (Sako 2002: 6).

Most notable economists strongly believe that brain drain is to a large extent a negative externality imposed on the (source) country; and amounts to a zero-sum game, with the developed recipient countries getting richer at the expense of the source developing countries that are getting poorer (Sako 2002). Put differently, the views aired by proponents of the divergent school of thought are that the country of origin suffers a net loss because it funds the education and training of professionals who, precisely at the moment when they start producing, decide to emigrate. Avveduto & Brandi (2001: 31) corroborate the above sentiments: “the country that invests in human resources is not the one that enjoys the return on its investment”. Conversely, the receiving country obtains qualified workers without having to bear the costs of training them, and therefore makes a net gain. The loss of these professionals means that the developed countries are benefiting unfairly from Africa’s scarce resources. Africa’s education budget becomes nothing but a supplement to the education budgets of the West. In essence, Africa is giving developmental assistance to the wealthier western nations, making the rich nations

richer and the poor nations poorer (Emeagwali 2004). The result of this exodus means that the vicious circle of poverty in less developed countries is far from ended.

Although it has not been empirically proven, there is a general belief that brain drain tends to pull the “best and the brightest” from their home countries, the very people most equipped to help improve living conditions at home. It is believed that “the best and brightest” can migrate, leaving behind the “weak and less imaginative”, resulting in a slow death for Africa. Africa needs a large middle class to build a large tax base which, in turn, will enable the continent to build good schools and hospitals and provide a continuous supply of electricity. Emeagwali (2004: 1) argues that few people do not realize that Africans who immigrate to the US contribute 40 times more wealth to the America than to the African economy. According to the United Nations, an African professional working in the USA contributes approximately US \$150,000 per year to the US economy (Emeagwali 2004). It is further argued that Africa’s ongoing development efforts will continue to be undermined as long as the current phenomenon of human capital flight/brain drain continues (Selassie 2002). Emeagwali (2004: 1) also contends that it will be impossible to achieve an African renaissance without the contributions of the talented: “the best African musicians live in France, the top African writers live in the United States or Britain and the soccer superstars live in Europe”. The brain drain problem has also contributed to Africa’s growing marginalisation in the global economy (Selassie 2002).

The proponents of the convergence school of thought view brain drain from a functionalist perspective. They argue that the human capital investment made in the high-level migrants is partly recovered through remittances (Ammassari & Black 2001, Sako 2002, Todisco *et al* 2003). Although not many economics studies have been conducted on the effects of migrant remittances on African countries, it is often emphasised that while emigration countries lose manpower and, in particular, the “best and brightest” (Ammassari & Black 2001: 13), they also receive something in return. Migrants who work abroad usually send part of their income to their families in the home country. They also contend that remittances promote

development by improving income distribution and quality of life by loosening production and investment constraints faced by households in the sending countries; after all, migration decisions are part of family strategies to raise income, obtain funds to invest in new activities, and insure against income and production risks (Zezeza 1998). Todisco *et al* (2003) argue that remittances can also be regarded as a form of hidden aid which the developed world devolves to poor nations. Some commentators have likened a skilled immigrant's obtaining a visa to work in a rich country to winning the lottery, because the income gains from moving are so great (Todisco *et al* 2003). Whatever the approach, the benefits to the few who are lucky enough to leave need to be weighed against the costs to their countrymen left behind.

The economic impact of remittances has been considered beneficial at both the micro and macro levels. The above sentiments are corroborated by Ammassari & Black (2001: 13) who also contend that the value of migrant remittances can significantly exceed that of national export earnings. Available estimates indicate that in recent decades the volume of global remittances has grown from less than US \$2 billion in 1970 to US \$70 billion in 1995, surpassing official development assistance (Zezeza 1998: 19). Some economists speak of remittances as the developing world's most reliable and broadly based source of financing, making it effectively a new form of foreign aid. A report by SIRDC (2004: 74) states that a beneficial aspect of the brain drain, if properly managed, is that it enables emigrants to send part of their earnings home in the form of remittances, thus providing the home country with a source of valuable foreign currency. It has also been observed that the remittances can have a multiplier effect on the economy as a whole. For example, in Mexico, the US \$2 billion that entered the country in the early 1990s is estimated to have increased overall annual production by US \$6.5 billion (SIRDC 2003: 74).

Those who argue against the issue of remittances often emphasise their unproductive nature (Ammassari & Black 2001). According to them, not only are remittances insufficient to compensate for human capital losses, they also increase dependency, contribute to political instability, engender economic distortions, and hinder development

because they are unpredictable and undependable, and encourage the consumption of goods with high import content. Like many other scholars, Ammassari & Black (2001: 14) argue that remittances fail to enhance development because they are not spent on investment goods but mostly on unproductive purposes – housing, land purchase, transport, repayment of debt, or to a lesser extent wasted on conspicuous consumption, or simply saved as insurance and old age pension funds.

Emeagwali, who also spoke strongly against remittances, emphasised the need to eliminate poverty in Africa, and not merely reduce it by sending money to relatives. He reiterated that in any country, human capital is much more valuable than financial capital because only a nation's human capital can be converted into real wealth:

Money alone cannot eliminate poverty in Africa, because even one million dollars is a number with no intrinsic value. Real wealth cannot be measured by money, yet people often confuse money with wealth. Under the status quo, Africa would still remain poor even if we were to send all the money in the world there. When you give your money to your doctor, that physician helps you to convert your money into health – or rather wealth. Money cannot teach your children, teachers can. Money cannot bring electricity to your home, engineers can. Money cannot cure sick people, doctors can. When the medical doctors emigrate to the United States, the poor are forced to seek medical treatment from traditional healers while the elite fly to London for their routine medical checkups (Emeagwali 2004: 2).

Other studies present the same contradictory conclusions that remittances have both negative and positive impacts. Zeleza (1998: 19) correctly points out that “[T]he reality lies somewhere between these two extremes”. It all depends on the context, countries, and communities involved. Briefly, the relationship between migration and development is multidimensional and complex because in such circumstances, only the rich benefit at the expense of the poor.

#### 4.2 Political impact of brain drain

Besides its negative impact on the economic development of the source country, brain drain has been found to have negative consequences on the socio-political well-being of a country. Some authors have argued that intellectual migration deprives civil society of the organisational political skills of middle-class professionals. That

explains, according to some critics, why while African governments publicly decry the migration of their intellectuals, they do little to create conditions that would stem it (Zezeza 1998). The above observation is supported by Kimweli (Emeagwali 2004) who also argues that brain drain makes it difficult to create a middle class consisting of doctors, engineers, academics and other professionals. It costs poor countries the enthusiastic people with know-how to resist corruption and incompetent governance. Kimweli (Emeagwali 2004) also observes that brain drain has resulted in a two-class African society: a massive underclass consisting to a large extent of unemployed and very poor people, and a few very wealthy people who are mostly corrupt military and government officials (Emeagwali 2004). This means that brain drain gives rise to poor leadership and corruption. A large educated middle class will ensure that political power is transferred by ballots instead of by bullets. Emeagwali (2004), for example, attributes Africa's problem to the African diaspora:

... the Diaspora should be blamed in part, because the absence it has created has diminished the continent's intellectual capital and thus created the vacuum enabling dictators and corruption to flourish.

According to him, Idi Amin, Jean-Bedel Bokassa and Mobutu Sese Seko would not be able to declare themselves presidents-for-life of nations who have a large, educated middle class. Emeagwali states that "leadership is a collective process", and that "brain drain" reduces the collective brainpower needed to fight corruption and mismanagement, citing the lack of intellectual manpower in Nigeria to counter corruption after San Abacha stole US \$3 billion from the Central Bank and was never quizzed or brought before the law (Emeagwali 2004: 1).

### 4.3 Socio-cultural impact

Literature has also shown that African immigrants in the West are suffering the indignities of racism and discrimination as well as the iniquities of unemployment and underemployment (Zezeza 1998). According to the Institute of International Education in the USA, although an estimated 23 000 university lecturers leave African universities annually to join the diaspora, only 2 256 African scholars were teaching in American universities compared to 35 620 from Asia, 26

688 from Europe and 4 676 from Latin America. Many of them rarely find university teaching or research positions and it is evident that the majority of them find employment outside academia (Kigotho 2002). Highly qualified African scholars ultimately become teaching and research assistants abroad after failing to secure high-profile teaching and research fellowships, while some intellectuals join the long lines of lumben professoriate, a floating faculty excluded from gilded privileges of tenure, or trapped, in the case of the USA, in third-rate colleges or underfunded historically black colleges and universities (Zezeza 1998). It appears that the realities that await some of the intellectual migrants in the diaspora are unknown as one obviously disgruntled exiled intellectual from West Africa wrote:

My experience suggests that the portrayal of the lives of Africans in intellectual exile as being rodent of the Biblical 'promised land, brimming with milk and honey, is both untrue and unreal', a sobering testimony to the dissonance in the 'push-pull' equation between expectations and experiences in the Diaspora. Anecdotes abound of African professionals swelling the ranks of cab drivers in London, janitors in Paris, and informal sector hawkers in New York (Zezeza 1998: 13).

Tales abound of African immigrants suffering the indignities of racism, loneliness, and otherness, and the iniquities of unemployment and underemployment. Besides discrimination, racism and xenophobia, it has been found that brain drain entails socio-cultural ills in a given country. The press is replete with articles which show that while the Zimbabwean diaspora's economic emancipation has brought financial salvation to most families and the country, it has also brought socio-cultural ills, namely child delinquencies, marriages and other relationship break-ups, with cases of infidelity topping the list (*Herald* 2007: 3).

## 5. Brain waste

Empirical evidence obtained from various studies conducted in southern Europe have shown that third-world academics who migrate to other countries, in particular to First-World countries, gain very little because they mainly do unskilled work. These studies found that only a minority of migrants had gained new skills while working abroad.

The majority did not learn anything new because they only did unskilled work. Similar studies on migration from Africa to Europe and the Middle East have also identified deskilling of migrants as a major problem. Another argument raised is that even among those migrants who are able to acquire new technical or industrial skills and experiences, few may be able to apply them in practice back home due to a lack of infrastructure needed to make effective use of their new skills (Ammassari & Black 2001). The research also reports that migrants were to a large extent in low-grade positions in the industry and worked mainly on mass-production lines. Their frustration hampered their learning. These migrants have learned very little beyond, for example, how to empty dustbins in Munich and turn a screw at Renaults (Ammassari & Black 2001: 28).

In a study conducted by Todisco (2002), it was established that in advanced countries, immigrant workers are made to do unhealthy, dangerous and exhausting jobs which are essential to the economic system but are normally shunned by locals. The local workers are only too willing to delegate these tasks to the new arrivals, especially if the immigrants are impoverished and obliged to accept. In First-World countries, the relative number of old people is increasing, and the poor health that comes with old age has obliged many to seek permanent assistance. The younger generations in those countries have found it more convenient to leave the demanding task of nursing and caring for old people to immigrants. In many factories, labour-intensive and dangerous jobs such as manning blast furnaces in steelworks are given to immigrants. The same is true for construction work, agriculture and animal husbandry (Todisco *et al* 2003). Research has also established that skilled job-seeking Africans in the Americas and Europe are employed in the worst-paid unskilled jobs, which have no relevance to their academic achievements. These professionals soon lose their competencies and are unable to make commensurate contributions to the development of either their country or the host country's development efforts, resulting in "brain waste".

Similarly, studies conducted in Zimbabwe revealed that the majority of the professionals who are leaving the country for the diaspora have been forced to abandon their professions for menial, difficult

and dangerous jobs that promote the well-being of the people of the developed world. There are reports that highly educated men and women from Zimbabwe are working as child minders or looking after the sick and the elderly in old people's homes in the North, while others work as waiters, general hands while some are turning to prostitution, pornography and homosexuality to earn foreign currency. Those who fail to make it in the diaspora are said to be living like vagabonds in the streets (*Herald* 2007, SIRDC 2003).

One Zimbabwean, Nelson Katsande, who left his job as a sales representative at a manufacturing company in Harare, where his company perks included among other things, a company car, paid holidays, and free professional development courses, narrated his ordeal when he left his job for England to pursue a degree in marketing where he was evicted from college for non-payment of fees and had to seek a job in a nursing home for the elderly and infirm:

Shamwari (my friend), life is difficult for me. I look after an elderly man who cannot do anything on his own. I have to feed him, take him to the toilet, bath and dress him. I regret coming here. Now I have backaches as I have to lift the old man daily. All my dreams of a better life here are shattered. I have no social life and miss home dearly (Mushonga 2004).

Tapfumaneyi is not the only one in this predicament. Many professionals who left their lucrative careers for a "better" life abroad are living in misery. Doctors, engineers, managers, teachers and once prosperous businessmen have all been reduced to nothing. The majority of these professionals are cleaning the streets of London, others are absorbed in the "care" industry, looking after the elderly. Life in the diaspora is not as rosy as perceived. Those who were high-flying engineers, managers, academics, businessmen in Zimbabwe have only become "carriers" in their new life in England. They have gained extensive experience in a wide range of jobs, such as street cleaning, "bottom" cleaning, and garbage and warehouse cleaning (Anon 2006).

Other researchers of brain drain who stress sociocultural explanations as being the major causes of brain drain also attribute migration and the "brain drain" to esoteric issues, such as "the prestige associated with foreign travel", in particular to Europe and the US.

Tutored by colonialism to love things foreign, Africans have always had the desire to go abroad to better themselves. A more convoluted version of the argument is given by Zeleza (1998: 14): “Third World middle classes, as islands of western modernity, seek class fulfillment in the cosmopolitan cities of the North”. The mentality of Africa’s elite is one problem which ought to be addressed. In their wish for a better life, they aid the brain drain by sending their children to learn outside Africa. The resources “wasted” aside, these elite are generally the people responsible for the development of African educational systems and return to lead African organisations and continue to transmit Eurocentric values and attitudes.

## 6. Conclusion and recommendations

This article demonstrates most African countries’ quagmire at the onset of the twenty-first century. It portrays a continent under siege by the powerful nations while the whole world turns a blind eye as if nothing sinister is happening. Evidence provided in this article also shows the various machinations and cynical recruitment and immigrant schemes designed by western countries to woo highly trained professionals from Africa and other developing countries (Sankore 2005). As a result of these schemes, the whole of Africa continues to lose skills at a rate that is unsustainable for the development of the continent. As highlighted earlier, the demand for skills by industrialised countries continues to grow at an alarming rate. This obviously means a further depletion of Africa’s human capital through brain drain resulting in the African continent turning into what Sankore (2005: 12) describes as an “intellectual barren ghetto” if the movement of skills from the poor continent to the rich North is not regulated.

This article points out that brain drain deprives the continent of its most critical resources which it is producing at a considerably high cost, thus turning Africa into a training ground for the West. African brain drain, therefore, represents a major development constraint and fuels a vicious downward cycle of underdevelopment and poverty. As pointed out in the discussion, it has caused harmful labour shortages in critical areas such as health, education, science, and

engineering, and it is taking away the middle class consisting of the strategists, business executives, accountants, economists, information technology specialists and so forth, thereby depriving Africa of critical skills necessary for the development of the continent. In addition, brain drain has caused social ills, destroying the family unit and promoting juvenile delinquencies among a host of other problems. While some authors argue that the skills which Africa is losing are compensated by remittances, it has been observed that not all families have children and relatives in the diaspora, and thus remittances do not benefit everyone. Remittances are insufficient to compensate for the human capital losses, bearing in mind that in any country, human capital is more valuable than financial capital as only a nation's human capital can be converted into real wealth.

Sustainable development can only be engendered if Africa takes drastic actions to harness and take full control of all its resources, both human and material. Africa will not develop without its doctors, engineers, scientists, nurses, professors, accountants, teachers, business executives, social workers, and so on. Considering the prevailing socio-economic conditions and the challenges experienced by the majority of African countries, it may be difficult to lure back their citizens who are currently in the diaspora. African governments are challenged to explore more concrete ways of converting the "brain drain" into "brain gain" and these should include:

## 6.1 Economic measures

- Promoting a conducive economic environment, and sound economic management.
- Coming up with anti-corruption strategies by the establishment of policies and procedures that promote answerability, accountability and transparency.
- Ensuring equitable distribution of national resources.
- Africa could capitalize on its citizens working abroad by introducing more acceptable incentives for them to invest in the continent.

## 6.2 Political initiatives

- The promotion of good governance and democracy; respect for human rights, cultivation and consolidation of peace, security and stability in Africa are considered paramount in curbing brain drain.
- Governments need to sensitise their citizens regarding imperialist machinations, inculcate the spirit of nationalism and patriotism to all its citizens by introducing national history as a compulsory subject from primary school to university level.

## 6.3 Skills export policy

Since other countries are competing with Africa for skills, a potentially rewarding solution for governments might be to formulate skills, export and import policies that promote and provide the framework for training human resources in their countries for both the international and local labour markets.

## 6.4 Bonding

In order to stem the migration tide of human capital, governments could introduce and strictly apply the bonding system whereby those academics and professionals who were educated and trained at public expense should work in the country for a certain period of time after completion of their training. Other restrictive policies such as adding extra years for industrial attachment and internship in all critical areas such as medicine, engineering, science, ITC, and so forth, might help delay emigration. This will ensure that beneficiaries of government bursaries and scholarships serve the country by way of this prolonged industrial attachment or internship.

## 6.5 Remittance of foreign earnings

Alternatively, African citizens working abroad should be encouraged to transfer a certain percentage of their foreign earnings to their countries.

## 6.6 Withholding of academic qualifications

- Another option would be the withholding of academic qualifications for students in foreign universities whose education was

sponsored by government. The graduates will only be issued with their degree certificates upon returning to Africa.

- To avoid the temptations of not returning, government scholarships and staff development programmes should be tenable locally or in other African countries rather than in western countries. This will avoid the risk of losing professionals who may decide not to return if they go overseas for study purposes.

### 6.7 Create an accurate and continuing data base

One of the first steps for Africa would be to create an accurate and continuing database of its human capital. This will help decision-makers to formulate policy for those areas where the brain drain is negatively affecting human development priorities.

### 6.8 Working conditions

Working conditions must be improved, salaries must reflect market conditions, institutions must provide facilities for teaching and learning, doctors and medical personnel must work in well-equipped hospitals and medical centres.

### 6.9 Ratification of policies on immigration of skilled manpower

- Given the international nature of brain drain and the covert support it receives from developed countries in need of skills, measures by African countries to contain it can only succeed with the support of destination countries. Pressure must be exerted on developed western countries to modify their policies on the immigration of professionals from the African continent.
- Because brain drain is a global problem that requires a global solution, the need for the international community to intervene cannot be overemphasised. It is compelling to both the rich and the poor countries across the continental divide to develop policies and strategies to satisfy their human resources demands without disadvantaging other countries.

## 6.10 Repatriation of African professionals and intellectuals

- In order to counter the worrying trend of brain drain, governments must resuscitate such programmes as the Return of Qualified African Nationals (ROQAN) and RANDFORUM through the International Organization for Migration (IOM) which in the past tried but with moderate success, mainly because of the expense involved, to initiate the return of qualified African nationals to their countries. The IOM's Return of Qualified African Nationals (ROQAN) initiative ran from 1993 to 1998 and was funded primarily by the European Union (EU). It successfully placed 2 000 skilled Africans back in targeted countries.
- African heads of state should cause the African Union (AU) in conjunction with the IOM to draw up an African human resource strategy, geared to promote the efficient utilisation, retention and development of critical skills with a view to promoting development in Africa. The AU must request IOM and the UNDP through its Transfer of Knowledge Through Expatriate Nationals programme to forge partnerships with all social institutions and the private sector with the aim of repatriating overseas-based African professionals and intellectuals interested in returning home to offer their skills.

## Bibliography

- AMMASSARI S & R BLACK  
2001. Harnessing the potential of migration and return to promote development: applying concepts to West Africa. *Sussex Migration Working Papers* 3. Sussex: Centre for Migration Research.
- ANON  
2006. Head of African Union slams 'brain trade' policies. *The Herald, Business News* 10 April: B2.  
2007. Zimbabwe's nurses in exodus to Britain. *Zimbabwe Situation*. <[http://www.zimbabwesituation.com/sep23\\_2007.html](http://www.zimbabwesituation.com/sep23_2007.html)>
- APPLEYARD R  
1991. *International migration: challenge for the nineties*. Geneva: International Organisation for Migration.
- AVVEDUTO S & M C BRANDI  
2001. *Defining brain drain: the evolution of theories of brain drain and migration of skilled personnel*. Second interim report. Rome: Centre for National Research.
- BERKSON E  
2006. *The authentic teachers: the feelings that novice and veteran teachers experience in our schools*. New York: Education Resource Information Center ED490710.
- BOTHA M  
2006. Beveiliging van skole. *Rapport* 5 November 2006: 1.
- BRANDT W  
1980. *North-South: a programme for survival: report of the Independent Commission on International Development Issues*. London: Pan Books.
- BUTHELEZI S  
2007. Globalization and the state of democracy in Africa. *African Journal of Development Studies* 1(10): 1-22.
- CRUSH J  
2008. Gender and brain drain from South Africa: executive summary. *Southern African Migration Project: Migration Policy Series No. 23*.
- DE WIND J & J HOLDAWAY  
2005. *Internal and international migration in economic development*. UN/POP/MIG-FCM/2005/11. New York: United Nations Secretariat.
- DOWTY A  
1986. Immigration and expulsion in the Third World. *Third World Quarterly* 8(1): 151-76.
- EMEAGWALI P  
2004. *How do we reverse the brain drain?* Unpubl presentation at the Pan-African Conference on Brain Drain, Elsah, Illinois, 24 October 2003.  
<<http://www.addistribunecom/Archives/2004/09-01-04/How.htm>>

## Gwaradzimba & Shumba/Brain drain in Zimbabwe and South Africa

- FINDLAY A  
2001. From brain exchange to brain gain: policy implications for the UK of recent trends in skilled migration from developing countries. *International Migration Papers* 43. Geneva: International Labour Organisation.
- GWARADZIMBA E  
2007. The causes, nature, and consequences of brain drain from institutions of higher learning in Zimbabwe: 2000-2005. Unpubl PhD thesis, School of Post Graduate Studies, University of Fort Hare.
- GWARINDA T C  
2001. *Issues in education: sociological perspectives: module (PGDE 003)*. Harare: The Zimbabwe Open University.
- HAKANEN J J, A B BAKKER & W B SCHAUFELI  
2005. Burnout and work engagement among teachers. *Journal of School Psychology* 43(6): 493-513.
- HERALD, THE  
2005. State deplors UK move on asylum seekers. *The Herald* 25 June: 6.  
2006. Life not so rosy in diaspora. *The Herald* 20 June 2006.  
<<http://www.herald.co.zw/inside.aspx?sectid=5215&cat=10>>
- JONES J S  
2004. *South Africa's brain drain underestimated*. Cape Town: EN, 19 February.
- KAHN M, W BLANKLEY, R MAHARAJH, T E POGUE, V REDDY, G CELE & M DU TOIT  
2004. *Flight of the flamingos: a study of the mobility of R & D workers*. Cape Town: HSRC and CSIR.
- KIGOTHO W  
2002. Brain drain stunts Africa. Nairobi: *East African Standard*.  
<<http://alafrica.com/stories/printable/200210060131.html>>.
- KIZILTEPE Z  
2003. Sources of teacher demotivation. Lambert & McCarthy (eds) 2003: 145-62.
- LAMBERT R & C MCCARTHY (eds)  
2003. *Understanding teacher stress in an age of accountability*. Greenwich: Information Age Publishing.
- MARARIKE S T  
2005. Brain drain: West milks Africa dry. *The Herald* 28 December: 7.
- MCDONALD D A & J CRUSH (eds)  
2002. *Destination unknown: perspectives on the brain drain in Southern Africa*. Pretoria: African Institute of South Africa.
- MELDRUM A  
2003. 'Mugabe says we are being stolen. All we want is better pay': the brain drain has badly hit Zimbabwe's fragile health service. *The Observer* 10 August 2003: 1.

MITHILIENI J

2006. Skep veilige skole wat omgee. *Rapport* 5 November 2006: 1.

MOTSEKE M J

1998. Factors contributing to teacher stress in a township secondary school. Unpubl MEd dissertation, Dept of Further Teacher Education, University of South Africa.

MOUTON J, N BOSHOFF, T KULATI & F TENG-ZENG

2007. *Scientific mobility and the African diaspora*. Centre for Research on Science and Technology (CREST). James Martin Institute Working Paper 6. University of Stellenbosch, April 2007.

MUSHONGA M

2004. Brain drain in Zimbabwe's universities: factors, extent and alternatives.

<<http://www.interaction.nu.ac.za/SAARDHE2005/fullpapers/Mushonga.M.doc/>>

NGWAWI J

2002. August 1 Zimbabwe slides into expatriate society. *Financial Gazette*, 28 November 2004.

<<http://allafrica.com/stories/printable/20208010386.html>>

ODUOR P

1994. Reversing intellectual colonization (brain drain): addressing and countering the debilitating effects of brain drain on Kenya's socio-economic fabric.

<<http://www.africasbraingain.org/pages/Reversing%20Intellectual%20Colonization.htm>>

ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD)

2003. The international mobility of health professionals: an evaluation and analysis based on the case of South Africa. *Trends in International Migration: SOPEMI 2003*. Paris: OECD: 116-51.

SOUTHERN AFRICA DEVELOPMENT COMMUNITY (SADC)

2000. Brain drain hits Africa. *SADC Today* 5(5): 73-80.

SAKO S

2002. Brain drain and Africa's development: a reflection. *African Issues* 30(1): 42-6.

SANKORE R

2005. Brain drain: killing us softly. *New African, Pan-African Magazine* 38(1): 8-12.

SCIENTIFIC AND INDUSTRIAL RESEARCH AND DEVELOPMENT CENTRE (SIRDC)

2003. *An analysis of the causes and effect of the brain drain in Zimbabwe*. Harare: SIRDC.

## Gwaradzimba & Shumba/Brain drain in Zimbabwe and South Africa

SELASSIE G

2002. World Markets Research Center in Focus 2002. Africa World Markets Research Centre. *Focus 2002-Africa* 22 September 2002.

SHINN D H

2002. Reversing the brain drain in Ethiopia. Unpubl presentation at the Ethiopian North America Health Professional Association, Alexandria, Virginia, 23 November 2002.

SOUTHERN AFRICAN MIGRATION PROJECT (SAMP)

2003. *Migration News, August 2003*. 10 September 2005. <<http://www.queensu.ca/samp/migrationnews/2003/aug.htm>>

STATISTICS SOUTH AFRICA (STATSSA)

2004. Brain drain from South Africa accelerates. 22 July 2009. <<http://www.parapundit.com/>>

TEMKIN S

2008. South Africa: crime 'biggest cause of SA brain drain'. *Business Day*. <<http://allafrica.com/stories/200805200001.html>>

TODISCO E

2002. Defining brain drain: human, brain and knowledge mobility. *Trends in International Migration*. Paris: OECD: 17-35.

TODISCO E, M C BRANDI &

G TATTOLO

2003. Skilled migration: a theoretical framework and the case of foreign researchers in Italy. *Fulgor Bulime* 1(3): 115-30.

ZELEZA P T

1998. *African labour and intellectual migrations to the North: building new transatlantic bridges*. Santiago, CA: University of California.