

# Funnelling Talents Back to the Source: Can distance education help to mitigate the fallouts of brain drain in sub-Saharan Africa?

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## Abstract

This paper offers a critical reflection on theories supporting the positive consequences of brain drain (BD) in sub-Saharan Africa (SSA). It sides with the sceptics of the power of remittances alone to offset the bleed of highly skilled professionals and foster the development of SSA. It is argued that given the intensification of BD's pull and push factors, stemming or reversing it will become even more difficult than it has been so far. Distance education (DE) is deemed to hold the potential to help tap into the BD pool of expertise and funnel it back home to contribute to the reconstruction of crumbling higher education (HE) systems in SSA. This brain circulation (BC) effort added to some benefits from remittances would help to alleviate the crippling effects of BD in SSA while, at the same time, allowing the majority of under-employed highly qualified migrants to stay current in their areas of expertise. Learning from DE past mistakes in SSA would foster the emergence of a more ecological DE approach that would foster more sustainable BC and thus mitigate the fallouts of BD.

Keywords: brain drain, brain waste, sub-Saharan Africa, remittances, distance education, higher education

## I. Introduction: The African "Highballers"

Most of the people in developed countries remember what they were doing when they first heard about the suicide attacks in the USA on September 11, 2001. I was a member of a 12-member crew of labourers. It was our second week of a tree-planting, tree-spacing contract. On that early and foggy autumn morning, our van was cruising on a forest road in Whitecourt, a one-hour drive northeast of Edmonton (Alberta, Canada). The driver turned the radio on moments after the first twin tower in New York was hit. The frantic live radio reports brutally awakened most of the somnolent crewmembers. We pulled the van over and listened, in shock, to the unfolding events south of the Canadian border. We remained glued to our seats for the fol-

lowing hour; switching back and forth through the few radio stations we could tune into from the remote spot we were in, deep in the forest. Our anxiety reached its paroxysm when Canadian reporters announced that all the North American air space had been sealed off. For many of us, the unfolding tragic events south of the border triggered vivid memories of the wartime anguish we had experienced firsthand back in our home countries. We ignored our foreman's insistent calls asking us to carry on with our workday. We knew he could not afford to fire us. Our crew was the most productive of the small company. In silviculture jargon, we were "highballers". We drove back to the motel instead. We wanted to watch on TV the developments of one of the most significant moments in modern history.

The heated debate that followed the tragic events had a catalytic effect within the crew. It gave the opportunity to crewmembers to open up and talk about our educational and professional credentials. All of a sudden, we realized that this was not your usual labourers' crew. There were two Ph.D.s., two engineers, one former Member of Parliament, one lawyer, and one journalist among us. The engineers explained complex notions of impact and structure resistance. One of them accurately predicted the possible collapse of the twin towers. The journalist and the lawyer had different takes on the rationale and possible legal and diplomatic implications of the attacks. The rest of us contributed generally well-informed opinions about the situation. Since ten out of the twelve crewmembers were from SSA, we self-deprecatingly called ourselves the "African elite crew".

Even after this highly unusual icebreaker, a tacit rule limited high-level intellectual discussions to special occasions. Discretion, modesty, and a self-imposed low profile were the rule during workdays. Understandably, there was not much to brag about. Days off were suitable opportunities to engage in intellectual debates over a few beers in Edmonton or Calgary bars or in our own motel rooms. We would often celebrate our reunion with other highly skilled professionals-turned-labourers from all around Canadian western provinces. We remade Africa from as far from it as possible. We remade the world. Ironically, the only question that remained taboo throughout our summer season was: Why had this many highly trained professionals resorted to these backbreaking jobs while hoping for better job opportunities in Canada, instead of heading back home where their high skills are desperately needed? Despite the fact that the United Nations warned many decades ago that brain drain (BD) was a problem that "seriously hampers" the development of poor countries (UN, 1975), the International Organization for Migration (IOM) estimates that as many as 20,000 highly trained professionals have been leaving the sub-Saharan African (SSA) continent every year since the beginning of the 90s.

Much has been said and written about the complex and systemic push and pull factors of BD (Akpewho & Nzegwu, 2009; Van Dalen, Groenewold & Schoorl, 2004; Bloom & Sachs, 1998). However, on both sides of the controversial debate, the fact that only a small fraction of highly skilled immigrants living in developed countries manage to find employment commensurate with their training and experience is often overlooked. This makes brain waste (BW), BD's corollary, even more damaging not only for the sending countries' development prospects but also for the individual immigrants' careers and self-esteem. Unfortunately, with the notable exception of a minority of professionals such as health professionals nowadays or information technology specialists during the past decade who are needed over periods of high demand, the majority of highly skilled immigrants from SSA are underemployed, underpaid, or are forced to reorient their careers towards semi-skilled or even unskilled jobs. Yet, the level of education continues to be the single most important criterion for immigration policies in many developed countries.

This paper is a critical reflection on the BD/BW phenomenon and its consequences on SSA development prospects and on highly skilled immigrants' individual prospects. Based on contributions from a wide range of social scientists as well as my personal and professional experience, it questions the current trend in thinking that contends that BD is good for SSA. Given the fact that the combination of systemic pull and push factors that prevent highly skilled migrants from returning home are so entrenched in SSA, it will take time before reversing BD. It is suggested that a systematic approach to DE could make them invaluable assets to rebuilding their former higher education (HE) institutions.

## II. The Brain Drain Controversy

The debate over the benefits and the fallouts of international migration of highly skilled professionals has grown increasingly complex and controversial on both sides of the divide between poor and developing countries (the sending countries) and rich and developed countries (the

destination). As a result, the original BD debate has mushroomed into a number of related phrases such as “brain gain”, “brain circulation”, “brain waste”, “brain overflow”, “brain strain”, etc., in both academia and within the international community (Patterson (ed), 2007; Lien & Wang, 2005; Lindsay, Findlay & Stewart, 2004).

As SSA grew increasingly marginalized, especially since the end of the Cold War era (Collier, 1994; Kappel, 1996), BD became the centre of an increasingly polarized debate. Many experts denounce, sometimes in the strongest terms, its devastating effects on the continent’s development prospects. For example, one United Nations Economic Commission for Africa (UNECA) senior official summed up the worries of many concerned observers: “Africa will be empty of brains in 25 years” (Tebeje, 2006, p.1). A few years earlier, Emegwali (2001) had gone even further by contending that the profuse bleeding of talents from SSA means nothing less than the “slow death of Africa” (p.1).

Given the scarcity of credible comparative data on the negative consequences of BD (Beine, Docquier & Rapoport, 2006; Docquier, 2006), especially with respect to SSA, these voices are prone to being easily dismissed as alarmist. They swim against a rising tide of econometric studies extolling the virtues of BD in fostering development in sending countries thanks to remittances.

#### *Remittances: The Sledgehammer Argument for Brain Drain Proponents*

Remittances are sums of money flowing into the developed world by emigrants to help support their families back home. The presumed positive effects of remittances on national economies in the emigrants’ sending countries have recently become something of a new buzzword in academia and international development circles. Over the last two decades, a growing number of economists, including affluent Africans and Africanists, have argued that BD is good for Africa’s development (Anyanwu & Erhijakpor, 2010; Easterly & Nyarko, 2008; Lucas, 2006). According to the latest estimates, African migrants worldwide have sent back home more than 20 billion USD, surpassing foreign aid inflows (World Bank, 2008).

Thus, emigration has become socially valued in most developing countries, mainly because of its substantial “return on human capital”. Anyanwu and Erhijakpor (2010) came up with figures showing the positive effect of remittances on poverty reduction. They contend that “a 10 percent increase in international official remittances as a percentage of GDP will lead, on average, to a 2.9 percent decline in the number of people living in poverty” (p.80). In the same vein, Gupta, Patillo and Wagh (2009) argue that remittances have a poverty-mitigating effect and promote financial development in sending countries. According to these IMF economists, “a rise in the remittances-to-GDP ratio is associated with a fall of a little more than 1% in the percentage of people living on less than \$ 1 a day and the poverty gap” (Gupta, Patillo and Wagh, 2007) (para Impact of remittances). Other economists (e.g., Vidal, 1997; Stark, Helmenstein & Prskawetz, 1998) contend that prospected benefits from migration may constitute an incentive for migrants’ sending countries to invest in educational programs that are in high demand in developed countries. In the absence of reliable comparative data regarding the benefits of remittances, the foregoing arguments might be “purely theoretical” as is the BD controversy in general (Beine, Docquier & Rapoport (2006). The case of Mali showcases the contradiction between econometrics theory and hard realities in the field.

#### *When Econometrics and Field Realities Collide: The Case of Mali*

As already stated, an abundant body of literature has been dedicated to extolling the virtues of remittances on poor and developing countries’ economies. Although SSA received only 4% of the overall worldwide remittance flows (Gupta, Patillo and Wagh, 2007), entire national economies in SSA are largely dependent on remittances. For example, they constitute more than 24% of Lesotho’s GDP, making the kingdom the leading beneficiary of remittances in SSA (Anyanwu & Erhijakpor, 2010). The region of Kayes in Western Mali is similarly famous for its very high level of emigration throughout Africa and to France, the Malian former colonial master.

Based on a research study conducted in Kayes, Gubert, Lassourd and Mesplé-Somps (2009) concluded that remittances reduce poverty rates by 5 to 11%. These remarkable numbers seem to corroborate conclusions from an extensive study on child poverty in Mali (Unicef, 2008). In this study, the first Malian administrative region of Kayes-Koulikoro is praised to have achieved a 15 to 20 points drop in poverty level between 2001 and 2006. This constitutes the best performance amongst the five Malian administrative regions. The study shows that, during the same period, child poverty stagnated in the southernmost region of Sikasso, the country's breadbasket, traditionally less prone to the drain of emigration. On a national level, landlocked, drought-prone Mali is one of the countries that count the highest number of emigrants in SSA. One third of the 14.5 million Malians<sup>1</sup> live abroad. Given the fact that (extended) family solidarity is one of the most important cornerstones of Malian culture, remittances play an important role in those households that are blessed with emigrant relatives. However, the substantial increase of inward remittances flows that Mali has consistently benefited from over the last two decades has not managed to uplift in any significant way the living standards of ordinary Malians, let alone their national economy.

In fact, the situation is quite the contrary. According to data from the Development Prospects Group (World Bank, 2006) the inward remittances flows from Malian migrants have more than doubled between 2000 and 2006 from 73 to 177 million USD. According to the UNDP's Human Development Index (HDI), during this timeframe, Mali regressed from<sup>2</sup> the 165<sup>th</sup> position out of 174 participating countries to the 175<sup>th</sup> position out of 177 participating countries. In 2009, Mali still ranked as one of the four poorest countries in the world (178<sup>th</sup> out of 182 participating countries). It is worth remembering that the HDI was devised in order to shift

<sup>1</sup> According to the 2009 general census.

<sup>2</sup> Based on officially recorded data. These figures are believed to be very conservative given the dense network of unrecorded formal and informal channels that funnel remittances.

the focus of development economics from pure national accounting data to the "impact of people-centred policies" (Haq, 1995).

### III. Reminiscences of Structural Adjustment Programmes (SAPs)

The case of Mali is far from being unique. The contention that remittances foster development is further contradicted by hard realities in other major migrant sending countries in SSA. For example, a recent study about remittances from Ghanaian and Nigerian diaspora in the United States, United Kingdom and Germany, suggests that the main role of these financial inflows is to fulfil basic needs in the receiving families (Ecer and Tompkins, 2010). Following the same thread in Botswana, Campbell (2010) concluded that remittances do not even have a significant effect on the ability of households to fulfil basic needs and to maintain reasonable standards of living. In the same vein, based on data collected in Zimbabwe, Bracking (2003) had argued earlier that remittances constitute a parallel currency market that undermines the purchasing power of the majority of households without migrating members.

IV. The gap between remittances and their purported development benefits in immigrant sending countries is not limited to SSA. Writing about the situation in the Caribbean, Dawson (2008) had a glimpse on the recent history of immigration and remittances. She points out that Turkish and Armenian immigrants to Western Europe or Mexican *braceros* to the USA have been sending remittances back home for generations. She wonders why these countries have not achieved significant development as a result. She concludes that far from fostering development in sending countries, remittances "constitute, in fact, reverse subsidy to wealthier countries" (p.1).

V. Yet, as far as proponents of remittances are concerned, BD creates a win-win situation for both poor and developing countries. For example, in a book evocatively entitled, *Let their people come: breaking the gridlock on international labour mobility*, Pritchett (2006), with the

Washington-based Centre for Global Development, estimates that a 3% increase of import of highly selected manpower from poor countries would yield 305 billion dollars a year for sending countries. This represents twice the combined money inflow from trade liberalization, foreign aid and debt relief. Over the last decade, extolling the virtues of remittances for poor countries has become one of the favourite new mantras in development literature. Pritchett (quoted by Suri, 2006) reveals what lies beneath their active promotion. Reflecting the position of several developed countries he is quoted as saying: "You are not going to just throw access open to rich countries' labour markets.... You set the terms for which people you are going to allow into the country to provide which types of services... From an economist's point of view it makes no sense to force high wage European labour to be exclusively responsible for the care of older Europeans." (Suri, 2006, p.1)

VI. This kind of econometrics and promotional rhetoric is reminiscent of the sophisticated neo-liberal econometrics models and international promotional campaigns that paved the way to Structural Adjustment Programs (SAPs) initiated by International Financial Institutions (IFIs) during the 80s. These programs imposed draconian financial austerity measures through severe cuts in essential social services such as health and education. Whereas the imposed privatization allowed affluent multinationals to swiftly buy out public companies at discount prices, the accruing economic growth never came. Two decades later, faced with ravages from SAPs, the IFIs were forced to acknowledge that these programs were an "unmitigated failure" (The World Bank, 2008). This failure contributed to precipitate the decline of higher education in SSA and, thus, to feeding the BD crisis.

#### **VII. Higher Education in Sub-Saharan Africa: Impressive Growth, Financial Strangulation and Brain Drain**

A quick glance at the growth of enrolment rates over the last four decades shows a very flattering picture of higher education (HE) in SSA. Accord-

ing to the latest data, the enrolment rate has skyrocketed 20-fold from less than 200,000 students in 1970 to over four million in 2007 (UIS, 2009). According to the UNESCO Institute of Statistics, the 8.6% enrolment rate (as compared to 4.6% global average) made SSA a "world leader in terms of tertiary enrolment growth over the last four decades" (p.1). This impressive performance is due to the fact that the SSA enrolment rate was less than 1% in 1970. Thus, despite the sustained progress, the region still lags far behind. Only 6% of its overall HE age cohort was enrolled in 2007 as compared to a global enrolment rate of 26% (UIS, 2009).

While the sustained growth of HE enrolment rates is a commendable development, it was accompanied by an excruciating growth crisis due to the fact that, quite paradoxically, HE funding grew almost inversely proportional to the enrolment rates. For example, Bollag (2004) reports that, from 1985 to 1989, about 17% of the World Bank's loans to SSA were directed to higher education, as compared to 29% directed to primary education. From 1995 to 1999, the corresponding figures were sharply inverted to 7% for higher education and increased to 46% for primary education. These funding policies constitute one of the most dramatic illustrations of the harmful effect of SAPs introduced earlier. Consistent with these policies, bilateral and multilateral funding agencies imposed "aid conditionalities" that forced governments to devote the lion's share of all education funds to primary education to the detriment of HE. The stated rationale for this move was to achieve the "Education for All" (EFA) goals originally set for 2015.

Ironically, these funding policies contributed to hurt the very elementary schools they meant to help. The anaemic HE sector could no longer provide graduates in sufficient numbers to train elementary school teachers. As a result, untrained or inadequately trained teachers were in charge of primary education all over SSA. As documented by Lauglo (1996) and Harber (1998), the SAP doctrine was vigorously enforced even in a post-Apartheid South Africa despite its huge need of teachers trained in inclusive and democratic values. This financial strangulation

sounded like music to the ears of dictators who had overthrown the “fathers of independences” through military coups. They considered HE institutions as hotbeds of political contestations that spread throughout SSA, most notably after the end of the Cold War. (Zeilig, 1992)

Nowadays, most HE institutions in SSA display a disheartening spectacle: classes are overflowing, residences are ramshackle, libraries, labs, and curricula are antiquated when they are not totally lacking. Saint (2000), a seasoned expert of HE in SSA, describes the situation as a “political time-bomb” (cited in Macintosh, 1999). In any case, this dire situation undermines the confidence of most HE stakeholders. Working conditions are harsh for faculty and administrators, future employment prospects and professional development are bleak for graduates. This deplorable situation of HE constitutes one of the most powerful factors that pushes the best and the brightest to feed the BD stream. This push factor is compounded by rich countries’ immigration policies and other strategies such as the promotion of remittances discussed earlier or international student scholarships designed to attract the best and the brightest from poor countries. These policies and strategies that make the fight against BD an uphill battle are briefly presented in the following few paragraphs before discussing the potential of distance education (DE) to foster BC by tapping into the impressive BD pool to contribute to the reconstruction of HE institutions in SSA.

#### *Poaching Highly Skilled Health Professionals*

Attracting the most highly skilled professionals has become one of the most competitive sectors amongst developed countries. They have put into place immigration policies and strategies to recruit the best and the brightest in various strategic sectors of their economies. If there is one single field that epitomizes the negative consequences of many rich countries’ immigration policies in SSA, it is the exodus of SSA’s health professionals. Clemens and Patterson (2008) assert that 16 out of the 54 African countries surveyed have seen more than 50% of their physicians and professional nurses leave

their homeland to work in developed countries. They point out that according to available data, 75% of physicians trained in Mozambique and 81% of professional nurses trained in Liberia pursue their careers abroad (Clemens & Patterson, 2008). English-speaking former British colonies are particularly hit by this haemorrhage of health professionals towards the USA and rich Commonwealth country members such as the United Kingdom, Canada, Australia and New Zealand. All these rich countries are experiencing serious shortages of their workforce to take care of their rapidly aging population. As a result of this profuse bleeding of health professionals, five years ago, the entire SSA counted nothing more than 600,000 health professionals for an overall population of 682 million. By comparison, Canada counted 500,000 health professionals for a population of 31 million people (WHO, 2005).

After the UK National Health Service (NHS) declared in 2001 it had stopped its intensive recruitment campaign of health professionals from poor countries, the British Medical Association (BMA) saluted this “strong moral lead”. Yet, according to Pond and McPake (2006), 24% of foreign doctors who registered with the NHS between 2002 and 2003 were from SSA. During subsequent years, the medical community in the UK sounded resolute to promote policies to fight against poaching health professionals from poor countries. The BMA’s chairman declared bluntly: “the rape of the poorest countries must stop” (cited by Clemens and Patterson, 2007, p. 3). His illustration of “the obscene reversal of the flow of aid” is in line with Dawson’s (2008) contention of “reverse subsidy” alluded to earlier in this text. The Chairman of the BMA deplores the fact that the impoverished former West African British colony spent more than \$ US 16 million in medical education each year only to be sucked by “a voracious and insatiable market in the north” (Johnson, 2005, p.2). He deplores the fact that the USA, which employs half of all English speaking doctors in the world, “considers healthcare professionals as a commodity to be purchased in the market and is making little provision currently to increase the number of doctors and nurses it trains at home” (p.3). Accord-

ing to Hagopian, Thomson, Fordyce, Johnson and Hart (2004), 5,334 physicians trained in SSA work in the USA alone. This figure represents 6% of the overall number of physicians trained abroad working in the USA. Pond and McPake (2006) qualify what is happening in the health sector in SSA to be nothing less than a “health migration crisis” (p.2).

### **VIII. International Studentship and Scholarship: The Royal Path to Emigration**

Just as the post WWII strategy of postdoctoral research fellowships attracted the best British and European minds to the USA, international higher education programs have become the royal path to the immigration of highly skilled professionals, mostly since the early 90s. Recent data from the UNESCO Institute of Statistics (UIS, 2009) show that in 2007, 49.8% of the overall 218,000 international students from SSA were enrolled in HE institutions in Western Europe and a further 17.4% studied in North America.

In addition to being one of the best ways to attract and retain the brightest minds from all over the world, international students are also a very profitable business for higher education institutions in host countries. For example, the number of international students registered in Canadian universities has more than doubled in a decade from 86,000 in 1998 to 178,000 in 2008. They have generated an astounding \$ 6.5 billion in revenues, surpassing some of the most lucrative Canadian traditional exports such as coniferous lumber (Kunin, 2009).

While these higher education programs and immigration policies may sound fair enough to serve developed countries’ national interest, they become problematic when only a small fraction of the thousands of recruited highly skilled immigrants or international students – who are unwilling or unable to return to their home countries after graduation for various reasons – can find employment in their fields of expertise.

### **IX. From a Royal Path to a “Dead-End Street”**

According to the International Organisation for Migration (IOM) some 300,000 professionals from the African continent live and work in

Europe and North America (Cervantes & Guellec, 2002). But one important aspect most global estimates fail to elicit is the fact that, with the notable exception of migrants blessed with exceptionally good credentials in fields facing severe shortages of local qualified human resources such as information technology and the health sector during the last two decades, the majority of highly skilled immigrants looking for employment face entrenched professional barriers. They have to confront the devaluation of their academic credentials and professional experience acquired from their home countries. They have to overcome barriers pertaining to their proficiency of the host countries’ official languages, trade unions, and licensing agencies’ regulations, etc. As illustrated in my introduction to this paper, many highly skilled immigrants graduate through the system only to meet a professional “dead-end street” (Bourdieu & Passeron, 1970).

Even those who can manage to find employment often come to grips with “unrecognized learning” or the “under-utilization” of their skills. For example, Bloom and Grant (2001) estimate that 74% of Canadian workers affected by the \$4.1 to 5.9 billion in lost earnings due to “unrecognized learning” are immigrants. This is consistent with Reitz’s (2001) findings. He estimates lost earnings due to immigrants’ “skills under-utilisation” to be about \$2 billion annually. In addition, high percentages of “visible minorities” in general and Black people in particular, persistently report employment discrimination. According to Statistics Canada (2003), 35% of surveyed members of “visible minorities” reported personal experience of employment discrimination within the five previous years. For their part, Reitz and Barnajee (2007) reported that 61% of Black people, including second generation, experienced employment discrimination. More recently, a study by the Community Foundations of Canada (2010) concluded that, recent immigrants to Canada with a university education had an unemployment rate that was 4.1 times higher (13.9%) than that of Canadian-born workers with a comparable university degree (3.4%).

These circumstances give solid grounds to Reitz (2007) to decry the extent to which immi-

gration policies that give precedence to highly skilled immigrants are “out of touch with labour market reality”. He raises the question: “If immigrants with professional degrees end up driving taxis, delivering pizzas or working as security guards, should Canada reduce or even abandon its emphasis on skilled immigration?” (p.2). Unfortunately, this argument has been used as a mantra for various extremist groups in developed countries. Yet, in the present circumstances, this may be a legitimate question that is worth asking, at least as long as there remains a gap between immigration policy that favours the highly skilled and the lived experience of so many immigrants.

Last but certainly not least, the situation of unemployment or under-employment in which many of these proud and well-educated Africans find themselves is a devastating blow for their self-worth as my personal story testifies to. Since I had been a journalist and an award-winning documentary maker prior to fleeing the Rwandan genocide, family members and members of my African community at large were shocked when I talked about my summer job in silviculture. In most African cultures, this kind of hard earthwork is reserved for peasants and, in some countries, slaves. Understandably, most of my co-workers insisted that I never, ever, tell anyone that they were involved in any way in such labour. Since it is considered degrading for anyone who attended school, it would be impossible to fathom that the precious remittances highly trained individuals send back home are the fruit of such hard work as tree planting. When, every now and then, an emigrant can afford to travel back home for holidays, the tendency is sometimes to show off trendy outfits, bring numerous gifts for friends and family members, throw parties at bars and restaurants, and tell stories about famous places they have travelled to, places only seen on television by those who stayed behind. Sadly, this feeds into the idealization of life in developed countries and the push to emigrate or to follow suit at any cost through very dangerous illegal immigration routes (Alscher, 2005; Carretero, 2008; Carling, 2007).

#### *Past Attempts to Mitigate Brain Drain*

As a response to the argument that BD constitutes a loss of human capital for sending countries, a variety of policy options were envisaged in an effort to mitigate its effects (Meyer et al, 1997). They comprised restrictive policies such as compulsory national service, compensation policies such as the Bhagwati Tax (Bhagwati, 1976) on skilled migrants' income, incentive policies to encourage highly skilled graduates to stay home such as higher salaries and benefits. These policies were tried in some countries in SSA with meager results. For example, the vice-rector of the University of Bamako (Mali) recalls how, back in the sixties, government officials had to sign a ten-year contract to work for the public service before they could leave the country. They (or their extended family) had to pay back all the money the government had spent on their higher education if they wanted to leave earlier. Even their degrees were only delivered as long as the terms of the contract were honoured (Muhirwa, 2008). Like in Mali, restrictive and incentive policies did not make it beyond a few years after the independences. Given the lack of a dynamic private sector to absorb new graduates, waves of migration of the highly skilled started as soon as the public service was staffed.

The return of highly skilled professionals has also been tried throughout developing countries with limited results. In SSA, the IOM-sponsored Return of Qualified African Nationals (RQAN) had the mission to help highly qualified Africans living abroad to fill professional positions in their home countries. Available data indicate that the program helped the return and reintegration of 1,500 highly qualified professionals 10 years ago throughout the 10 countries it targeted (Africa News, 2000) before it was replaced by Migration for Development in Africa (MIDA). Given the hundreds of thousands of highly qualified migrants, this does not sound like an impressive record. As Meyer et al (1997) point out, the return option has enjoyed most significant success only in emergent economies such as China, India, South Korea, etc. that could afford high salaries and benefits, and infrastructures and research



facilities comparable to those in developed countries to offer to their highly skilled returning migrants.

At its beginning, the diaspora approach looked more promising for SSA. It is based on building expatriate knowledge networks between highly skilled professionals living abroad and their former colleagues back home in order to foster brain circulation (BC). The UNDP-initiated Transfer of Knowledge through Expatriate Nationals (TOKTEN) project is the most famous of its kind. Since 1977, it has supported many short-term consulting partnerships based on this concept in many developing countries, most notably in SSA. Despite positive results from these initiatives reported from many countries (see for example Mansaray, 2009 in Sudan and Wanigaratne, 2006 in Rwanda) they still look like a drop in the steady BD stream from SSA.

#### **X. Tapping into Brain Drain: The Potential of Distance Education to Foster Brain Circulation**

In light of the disappointing results of past initiatives to mitigate BD in SSA due to the resultant strength of BD's push and pull factors, one could argue that it will be hard to reverse the phenomenon any time soon using the same old approaches. Therefore, if the BD current is too strong to the available means and tools, it would be more productive to try new approaches in order to tap into its impressive pool of intellectual skills from wherever they are around the globe and funnel them back home in SSA instead of continuing the losing battle of trying to dam it up or reversing it. The impressive developments of information and communication technologies (ICTs) over the last two decades have scaled up the potential of distance education (DE) to foster brain circulation (BC) between highly skilled migrants from SSA and their home countries. For example, Brown (2000) counted 41 networks for South Africa alone at the beginning of the decade. Teferra (2000) added his voice to insistent international demands to find mechanisms to tap the fluidity and power of highly skilled professionals from SSA thanks to the unprecedented developments of ICTs.

International organizations were quick to oblige. Foreign aid-funded projects such as the African Virtual University (AVU), the Formations ouvertes et à distance (FOAD) and the Université numérique francophone mondiale (UNFM) were initiated under very optimistic premises. Among many other things, they promised to reverse Africa's BD thanks to cost-effective and cost-efficient DE programs delivered to HE institutions throughout the continent. As the story went, since international studentships are one of the most important sources of BD, as discussed earlier, instead of the continent's best minds deserting their ramshackle HE institutions in search of quality education in the developed world, quality educational programs from the most reputable HE institutions around the world were to come to Africa at a fraction of their real cost thanks to the power of ICTs. As the preceding discussion has highlighted, a decade later it does not look like these projects have lived up to their promise.

Yet, over its 150 year history, DE has come a long way. From the outmoded correspondence courses through 'snail mail', educational movies, radio and television, to nowadays synchronous ICT-based multimedia programs in real time, recent research suggests that DE has reached a level of sophistication that can make it a very efficient mode of teaching and learning (Sachar & Neumann, 2010; Tsai, 2009). Bagwandeem (1999) argues that DE has become a major form of learning and teaching both in developed and developing countries. With respect to SSA, to the notable exception of South Africa, a country whose National University pioneered the DE University concept in 1962 long before the most prestigious DE institutions of its kind such as the UK's Open University, the German Fern Universität or Spain's Universidad Nacional de Educación a Distancia, the remarkable potential of DE is still markedly under-exploited.

In addition, whereas there is an extensive body of literature stressing DE's potential to alleviate some of the most pressing problems facing education and training in SSA (Dhanarajan 1999; Mackintosh, 1999; Chale, 1992; Agunga, 1999), in-depth analyses of its actual performance are scarce at best. Kinyanjui (1998) points to orga-

nizational, institutional and operational factors that have undermined the performance of DE initiatives in SSA. They comprise the lack of policy coordination, lack of infrastructures, lack of financial and human resources, lack of know how in the design, development and delivery of DE programs, and poor understanding of local, political, socio-economical, cultural and technological contexts. The most important of these obstacles which have hampered the potential of DE in SSA over the last half-century are briefly discussed in turn in the following few pages with the intention to learn from past mistakes and take advantage of the potential of DE in order to foster BC.

#### *Poor Technology Infrastructure and Little Cultural Cognizance*

Given the over-reliance of SSA on foreign aid, unrealistic promises have often been made based on “massive assumptions” (Foster, 1968) about the benefits of technological trends in vogue within donors’ countries. For example, the multimillion online DE projects initiated throughout SSA during the heydays of the Internet bubble at the beginning of the decade made whooping promises despite the fact that the continent lacked the basic infrastructure and equipments necessary to take full advantage of this kind of DE. Internet connectivity was still in its infancy in SSA. Although Internet connections were hastily installed in participating HE institutions, the available bandwidth was not nearly enough to allow the smooth flow of data (images and sound) necessary for a productive use of online programmes. Steiner, Nyaska, Jensen, and Karanja (2004) summarized the situation of Internet connectivity back then to be: too little, too expensive and poorly managed. According to these authors, the bandwidth available at most HE institutions in SSA was equivalent to a broadband residential connection in developed countries and cost fifty times more than what it cost HE institutions in rich countries. This poor technological environment made Assié-Lumumba (2004) skeptic about the capacity of these DE programs to live up to their promises. Despite all the enthusiastic expectations from DE, she

questioned its conceptualization and planning to meet the needs of HE in SSA. In hindsight, this scepticism seems justified.

XI. Looking back in the 60s and the 70s, Sy (2004) recalls how the same causes have resulted in the failure of the first generation of technology-based DE projects in SSA. He argues that these projects have failed because of poor design or as a result of foreign experts’ lack of understanding of African cultures and their interplay with several other factors, including inadequate training, poor infrastructure, embryonic telecommunication equipment and the inadequacy of a programme entirely based on foreign languages.

By the same token, the era of independences coincided with the heydays of electronic media (radio, film and television). They were lauded to be “vital potential aid to education” (UNESCO, 1962 p. 11). It was predicted that radio and television educational programs would be transmitted via satellite, filmstrips screened in remote non-electrified areas using solar energy. Teaching machines were expected to allow children to learn by themselves. Unfortunately, very few, of these predictions materialized. Amongst these celebrated new technologies, radio presented the most promising potential of being an invaluable aid to education in a wide range of educational and training settings in SSA given its compatibility with most of African oral cultures (Head, 1974). He lamented the waste of the high educational potential of radio in SSA.

Instead we moved on to the next generation of technologies. Consistent with the “Moore effect” (1965) the possibility of “cramming” an increasing number of transistors integrated in electronic circuits has resulted into the rapid succession of increasingly smaller, lighter and more powerful electronic devices on the market over the last half century, the most conspicuous being information and communication devices. If these technological advances have revolutionized many aspects of modern life, the dependency of DE on these rapidly changing ICTs has proven to be a real challenge even for seasoned DE professionals. Reflecting on a 30-year experience in the field of DE, McKee (2010) confides:

The constant deluge of data and technologies, combined with the pace at which technologies, learning environments continue to change, have left me more than confused as a student, and almost terrified as a teacher in my concern to keep up! (p. 101)

This makes a strong case for stressing the fact that whereas DE needs to be supported by some form of technology, quality DE should not be dictated by technological trends. It should be informed by principles of pedagogy and communication theory with respect to local needs and capabilities. If this should be the case in developed countries, it should be the same many times over in SSA, a continent where access to newer technological trends is a privilege reserved to a tiny minority of the population. Heydenrych, Higgs and Van Niekerk (2004) aptly observe that DE projects destined to SSA “should take cognizance of African values and realities” (p. 130).

#### *The Mismatch between Ideology and Means of Production*

As discussed earlier, the last generation of DE initiatives in SSA promised to reverse BD by delivering cost-effective, cost-efficient quality DE to struggling HE institutions thus achieving the badly needed economies of scale. This rhetoric is reminiscent of a Fordist approach to education. Renner (1995) underscores the fact that in the era of globalization, education became like any other system of production “monitored, maintained, and controlled in the same way as a factory” (p.286). This mass production approach would have been a blessing in improving enrolment and alleviating some of the most pressing problems of HE in SSA described earlier. Unfortunately, it was not accompanied by the required means of production. Not only the infrastructure and requirements were lacking as discussed earlier, but there were no trained DE professionals to run the projects either. Findings from research conducted in Cameroon (Wamey, 2004), in Malawi (Perkins, 2003) and in Mali and Burkina Faso (Muhirwa, 2008) converge in pointing out the fact that poor training of instructors and tutors in basic methodology of technology integration in HE was one of the major contributors to the projects’ poor performance. From an

insider’s point of view, Bateman (2004) confirms these findings when he describes the curricula of one of the major DE projects in SSA as a “digital dumping ground”. He pointedly observed that:

There is an unfortunate and ultimately damaging perception that the process of developing DE courses simply requires that existing teaching materials (usually antiquated lecture notes) be digitized and put online. This will result in the development of extremely poor quality online teaching and learning and will contribute nothing to higher education in Africa (Footnote p. 5).

This was the trend even in many HE institutions in developed countries at the beginning of the last decade. Fortunately, a decade after the wave of cyber hype that accompanied the Internet explosion, the implacable market rule has wiped most of these “Digital diploma mills” (Nobel 2001) out of business. A new approach more in tune with pedagogy and instructional design principles that privilege local control, learner centeredness, quality instructors-to-students and students-to-students interaction has emerged as the hallmark of the most successful DE institutions (McCombs & Miller, 2009; Duffy & Kirkley, 2004, Beldarrain, 2006). These new global developments in the field of DE need to be customized to suit the particular political, economical, socio-cultural and technological environments of SSA if we want to take advantage of the full potential of DE to foster BC. This will take a clear DE policy informed by research-based evidence.

#### **XII. The Need for Research-Based Evidence to Inform Policy**

All of the hurdles to quality DE in SSA discussed in the preceding paragraphs could be attributed to the lack of a clear policy orientation informed by research-based evidence. For example, back during the heyday of electronic media evoked earlier, Head (1974) deplored the fact that important sums of moneys were invested in infrastructure and technical equipments while no funds to investigate the best use of radio in popular formal and non-formal education were available despite the fit of radio to African oral cultures.

A decade later, Quarmyne’s (1985) analysis of the performance of 23 educational radio pro-

jects throughout SSA over the preceding two decades reached the same conclusion. He found that only 5 of these projects were successful. He observed that one common feature to these successful projects was the use of education specialists who employed sound educational and communication research techniques for the design of the programs, and for the assessment of their effectiveness.

Research-based evidence constitutes an important hallmark policy makers can rely on to orient their vision, formulate goals, design institutional and organizational structures and plan for resources to support the envisioned project or program. As Shavelson and Towne point out, if no one could expect a disease to be wiped out without clinical research, “one cannot expect reform efforts in education to have significant effects without research-based evidence to guide them” (in Mayer, 2005, p. 68). If this is the case with ordinary education reform, research-based evidence to inform policy will be one of the cornerstones that will make the difference between past failed initiatives and successful DE efforts that will allow tapping into the BD pool and funnelling it back home in SSA to the benefit of HE institutions.

#### *Toward an Evidence-Based Brain Circulation Initiative*

As argued throughout this paper, available data suggest that there are hundreds of thousands of highly qualified African professionals scattered around the globe, mostly in Europe and in North America. The fact that they continue to send generous remittances suggests that they remain bonded to their homelands and interested in their development. In addition, most of them have access to ICTs and are part of networks linking them to their home countries. Remarkably, results from an extensive benchmarking study suggest that team members collaborating virtually can be even more productive than those working face-to-face (Majchrzak, Malhotra, Stamps and Lipnak 2004). These are important premises to hypothesize that, highly skilled migrants are willing to contribute their intellectual skills to the development of their home

countries and thus foster BC between SSA and its abundant diaspora around the world. Given the paramount importance of HE institutions in the development process (Gaillard & Gaillard, 2008), the potential of DE to foster BC should be exploited, first and foremost, by revitalizing HE institutions.

In order to avoid the same mistakes that lead to the failure of all previous generations of DE initiatives destined to SSA, a serious groundbreaking research effort is needed in order to test various hypotheses and assumptions. Findings would provide policymakers with evidence-based information allowing them to set up institutional, organizational and operational frameworks for a productive use of BC thanks to DE. Questions to investigate could be as simple quantitative questions such as how many highly skilled professionals live in which countries? What are their fields of expertise? How many hours would they be willing to dedicate to a DE programme destined to the continent? What are their conditions and constraints to participate in the project? What are the fields in which HE institutions in SSA have an urgent need for expertise? What are the technological infrastructures, equipments and resources available? Answers to these preliminary questions would lead the way to tackling more complex questions pertaining to the nature of the framework within which this BC initiative would operate and its overall feasibility.

Given the magnitude of this groundbreaking research effort and the limited capacity of many individual countries in SSA, it would be more productive to start small and conduct major surveys on a sample of countries selected in the four main regional organizations: the Economic Community of West African States (ECOWAS), the Economic Community of Central African States (ECCAS), the East African Community (EAC) or the Southern African Development Community (SADC). This process should provide answers to methodological, technical, pedagogical questions pertaining to course design, course development and delivery; quality control, copyrights, harmonization of DE courses offered through the BC initiative with the rest of the programmes offered by par-

ticipating HE institutions, etc. As usual, funding would be the sinew of war. Although finding a way to use the high skills of their migrant nationals is the responsibility of sending African countries, receiving countries that benefit from BD (Straubhaar, 2000) and international organizations should support these efforts.

### Conclusion

According to the latest World Migration Report (IOM, 2010), international migrations will likely “transform in scale, reach and complexity” over the next few decades due to such factors as economic and demographic disparities and the effect of environmental change. The report forecasts a sharp increase of international demand of qualified workers to replace the growing number of retirees in developed countries whose population is increasingly aging. Given the fact that 60% of countries in SSA will boast a population under 30 years of age by 2025 (National Intelligence Council, 2008), emigration flows of young Africans in general and highly skilled ones in particular are likely to intensify. Especially because the two forces that drove European emigration in the late 19<sup>th</sup> century, namely demographic booms and wage gaps between sending and receiving countries, are at work in SSA (Hatton & Williamson, 2003).

As I have argued throughout this article, the combination of powerful push and pull factors will make the old policies to stem BD or reverse it even more ineffective than they were in the past. In addition, although remittances are very useful for families that are blessed with migrant relatives, their overall benefits for migrant sending countries cannot offset the negative consequences of losing the best and brightest human capital, “the key pillars of long-term development” (Kapur & McHale, 2005). The sad fact that far too many talented Africans succumb to the many pressures to leave their homelands and very few are chosen to work in their areas of expertise compounds the magnitude of BW.

In order to prepare countries, regions and the international community to face the challenges of growing and complex migration fluxes, the

latest World Migration Report (IOM, 2010) advocates for building capacities to engage the diaspora in development of their countries of origin. This is consistent with the main argument developed throughout this article. Taking advantage of the potential of DE to foster BC would be a far more sustainable way of mitigating the fallouts of BD than remittances inflows, given their limited impact on overall economic development of migrants sending countries discussed earlier and their vulnerability to the caprices of the global economic climate (IOM 2010). The potential of DE to tap into the impressive pool of BW and funnel it back home has been highlighted. Given the lamentable situation of HE institutions in SSA, on the one hand, and the important role they should play in fostering innovation and economic development, on the other hand, they should be the first recipients of the precious expertise flowing from the Diasporas. In order to achieve this, we need to learn from mistakes that have plagued past generations of DE initiatives destined to SSA, namely following rapidly changing technological and ideological trends, the lack of trained professionals who understand the cultural and technological environments in SSA, and the lack of sound research to inform DE policies. Most of these ideas are consistent with Bronfenbrenner’s ecological model (1992). The main tenet of this holistic approach is the recognition that taking care of the complexity of the interactions between the different layers of social systems is one of the most determinant factors in the success of innovations such as technology integration in HE in SSA.

As I argue elsewhere (see Muhirwa, 2009), the bottom line is not to rush to the latest technology, but to adopt whatever technology works best in the particular cultural context in which it is to be integrated. This is also a warrant for sustainability. Given the magnitude of international migration challenges the world will face in the near future, taking advantage of the potential of DE to mitigate the fallout of BD and BW is a novel approach to foster BC that requires critical reflection and multidisciplinary research in order to substantiate it further and make it happen.

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