

Brain Drain to Brain Gain: What are the Implications for Higher Education in Africa?

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Introduction

Brain drain is the movement of the highly educated individuals from their countries of birth to other countries where they anticipate better opportunities. It denotes the migration of human capital as a strategic resource from countries where it can make the greatest contribution to national output to countries already well supplied with high-level of manpower (Ramin 1995).

In his address to the UN General Assembly, Uganda President Yoweri K. Museveni (2002) contends “education must do more than just making people literate . . . it must produce skilled people, scientists and managers that are absorbable by the labor market either inside the country or abroad.” Indeed, education empowers people and promotes democracy, health, political awareness, and poverty reduction (UNDP 2002). Education is a powerful engine of production and an important component of human capital that support national economic development (Schultz 1993). Belfield (2000) concurs that the effects of education do not only benefit the individual but also spillover into society.

In this article I highlight the concepts of *brain drain* and *brain gain* and their implication to higher education in Africa. I argue that although African countries are more vulnerable to lose their highly-skilled manpower given the region’s political instability, social conflicts, civil wars, and poor overall economic situation (Katz and Rapoport 2001), it is also possible to reverse this situation.

Brain drain is a constant phenomenon given that developed countries are often more politically and economically stable and offer better working conditions. Mountford (1997) contends that the constant flow of

highly-educated people to developed countries may push developing countries into a vicious cycle of poverty. In fact, emigration may mean lost investment in human capital as well as lost potential taxpayers. Indeed there is a direct connection between the level of education and migration decision (Katz and Rapoport 2001). The higher the educational level the higher the probability of migration. It is not surprising that with the broadening global economies and global village, education has become a passport to migration.

For many years much emphasis has focused on finding ways to reduce brain drain in Africa as the continent continues to lose the best of its brains to the West through emigration. However, given that the brain drain may not stop in the near future, rather it may instead increase, this is an opportune time to examine the positive effects of brain drain that can benefit home countries. Some of the benefits can be realized through increased remittance and return migrations especially for those people who have gained more advanced skills abroad (Rapoport 2002). Meyer (1996) suggests new possibilities of developing knowledge and human resources in the national community, through the use of its expatriate citizens abroad (international Diaspora). This could especially benefit African governments that do not have the capacity to restrict their highly educated citizens from migrating to international destinations, to rather explore the possibilities of tapping into the expertise and resources of African nationals currently working overseas (European Economic and Social Committee [EESC] 2001; Lowell 2002). African higher education institutions (HEIs) may have to take the lead in establishing viable networks with Africa’s Diaspora as they are challenged not only to produce nationals that can thrive in Africa, but also those that could compete in the global job market.

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Brain Drain

The growing international transfer of human capital from Africa to the developed countries undermines the human capital development efforts in this region. Evidently most migrants are even more highly educated than the average citizen of their home countries (Belfield 2000). Often the best brain immigrants have enjoyed subsidized education offered by their government from taxpayer money and afterwards leave for greener pastures once their higher education training is completed. Tikki Pang, Mary Ann Lansang, and Andy Haines (2002, p. 500) provide brief data on human capital loss for South Africa and African immigrant in the medical field:

With 600 of its medical graduates registered in New Zealand, the financial cost to South Africa was estimated at \$37 m[illion]. The United Nations Commission for Trade and Development has estimated for each migrating African professional represents a loss of \$184 000 to Africa. Paradoxically, Africa spends \$4 b[illion] a year on the salaries of 100 000 foreign experts.

A major challenge confronting developing countries—and especially those within the Africa Region—is optimizing the levels of human capital to cope with the stiff competition created by the global economy. Thus, human capital accumulation remains extremely unpredictable today. Straubhaar (2000, p. 17) argues

Human capital has become internationally mobile. People can move around the world within hours, their human capital even goes much faster and is available worldwide within seconds. Highly skilled people have the opportunity to communicate and to sell their knowledge around the globe . . . they can choose their residence by maximizing the expected return on their human capital investments . . . they may not even need to move in person. Cyberspace and Internet allows them to become functionally mobile while staying at their home base.

Migration opportunities are more open today than ever before. Post (2001) indicated that 15 member countries

of the European Union (with more than 375 million inhabitants) will need some 219 million immigrants from now until 2025 to maintain the ratio between aged persons and working persons. Rapoport (2002) also reported that more than 2.5 million highly-educated immigrants from developing countries reside in United States alone, excluding students. Nevertheless, U.S. Congresswoman Zoe Lofgren lamented: “after allowing foreign students to study at our fine American universities, we force some of the best and brightest minds in the world to leave America and relocate to other countries to compete against us” (Puzzanghera 1999, p. C1).

Subsequently, the introduction of the High-Tech Visa Bill in 1999, which ultimately led to the *Brain Drain Act* that was intended to relieve the shortage of skilled professionals for high-tech companies. The *Brain Drain Act* enables all foreign students graduating in hard sciences such as, mathematics, computer sciences, engineering, and medicine to secure work permits and to stay in the United States. Therefore the US and other developed nations are committed to encouraging more highly-skilled foreign individuals to stay permanently and work in the host country. Considering the ever-increasing demand for highly-skilled experts in high-tech knowledge in the developed world, inevitably brain drain will remain a menace to Africa.

What Motivates the Migration of Highly-Educated Workers from Africa?

The reasons why many highly-educated and skilled workers from Africa are willing to leave their home countries are many and not entirely understood. Grubel (1995) reported that professional research opportunities abroad is a primary motive for the migration of highly-skilled workers. Carrington and Detragiache (1999) also indicated that wage differentials, quality of life, educational opportunities for their children, and job security as the likely explanation for the migration of the elites from Africa and other developing countries (Carrington and Detragiache 1999). Others isolate political insecurity, poor working conditions, and lack of career opportunities as factors that ignite migration of the highly educated from Africa to developed nations (Vaknin 2002). A poor funding atmosphere is the major factor underlying the Cameroonian intellectual migration

(Edokat 1997). During a conference address on brain drain and capacity building in Africa, Tapsoba (2000) indicated that

We are spending less and less on our higher education systems, and our research laboratories are in a state of decay. Equipment and documentation materials are not regularly renewed. How can we keep the best of our minds if we continue to pay less to our top researchers and skilled [workers] than the youngest unskilled military personnel and our security guards? When wars are not making living conditions impossible for [our diverse] populations, we are doing everything possible to keep the best minds out of Africa. . . . It is time for Africa to value and treat its experts like it values foreign experts. Even today, it is not surprising to see policy maker[s] select foreign experts over well qualified Africans. . . . Brain drain is expensive for Africa and we cannot afford it. (Tapsoba 2000)

The conditions expressed by Tapsoba are in common practice in Africa and governments must support HEIs in order to reverse the effects of brain drain.

Brain Drain and Source Countries Development

Recent studies indicate that the possibilities of migration could lead to increasing human capital accumulation in the source country. Reichling's (2001) study revealed that possibilities of migration lead to a greater number of highly-skilled workers remaining in the source country as well as a greater human capital ratio than if there is no migration. Increasing the possibility of migration stimulates the returns to education, hence causing more people to become educated (Reichling 2001). Stark and Wang (2001, pp. 40, 42) concur that "when the migration prospect leads to a higher average human capital" then the "behavioral response to the prospect of migration nourishes both a 'brain drain' and 'brain gain'." However, conventional policies designed to stop brain drain may succeed only in retaining those who are mediocre professionals while the brightest continue to emigrate (Miyagiwa 1991; Gould 1994; Odek Stark, Helmenstein, and Prskawetz 1998). Most countries combining low levels of human capital and low

migration rates of skilled workers can be positively affected by the brain drain phenomenon.

Evidence shows that the greater the wage discrepancy between the destination country and the home country, the greater the incentive to accumulate human capital and the more likely that brain drain of migrants will be outweighed by the brain gain of non-migrants (Oded Stark and Wang 2001). Thus, the poor in poor countries stand to gain more and need to fear less from properly controlled migration by skilled members of the country's workforce (Stark et al. 2001). As earlier indicated, there are also possibilities of positive effects of brain drain such as remittances, return migration of skilled professionals, and the creation of business networks (Beine, Docquier, and Rapoport 2002; Pang, Lansang, and Haines 2002). Such dividends of brain drain could accrue to those left behind in the home country.

The estimated 10-20 million illegal immigrants currently residing in the United States receive more than return significant money to their respective home countries, including billions to Mexico alone. The seven million foreign workers in Saudi Arabia send home US\$18.6 billion dollars per year and Brazilian migrants working in Japan send home between US\$1.2-1.6 billion a year (EESC 2001). However, according to Straubhaar (2000) the foreign students studying in the United States contribute annually over US\$7 billion to the US economy.

Brain Gain and Intellectual Diaspora

Those within the Diaspora often take a different perspective from the traditional argument that brain drain is predominantly viewed as a loss. The Diaspora can be a potential gain to the home country (Meyer 1996; Brown 2002). Highly-skilled expatriates are seen as a pool of potentially useful human resources for the country of origin; the challenge is how to mobilize these brains (Brown 2002). Capitalizing on the possibilities of maximizing international business networks and connecting immigrant professional citizens in foreign countries could be a new direction for developing nations especially in Africa (EESC 2001). Meyer (1996) contends that establishing successful intellectual Diaspora through the connection of expatriate nationals abroad

provides opportunities with a multiplying effect whereby their home country could take advantage of the embodied knowledge as well as other resources that are tied to their professional environments such as colleagues, equipment, institutions, financing, etcetera (Meyer 1996). Forty-one expatriate-knowledge networks were identified through 2002 (see Brown 2002) and many additional ones have been established afterwards. The main goal of these networks is to connect expatriates amongst themselves and with their countries of origin (EESC 2001; Lowell 2002). The Diaspora offers the opportunity to allow expatriates to transfer their expertise and skills to their country of origin, without necessarily returning home on a permanent basis. Lowell (2002) argues that when emigrants maintain ties to their home country through backward connections, then, human and financial networks spillover to the source country that often yield significant benefits to the source country. With the global knowledge economy, increasingly relying on science and technology, the issue of intellectual Diaspora should be taken more seriously (Tapsoba 2000).

Discussion

The dilemma facing the African governments is to positively address the brain drain question while being mindful of their human capital development needs. They should also recognize that their efforts to reduce or eliminate brain drain altogether have not been forthcoming given the rapid expansion of the global economy and constant changes associated with technologies. National boundaries may not mean anything in a situation where anybody is able to sell and share their expertise with anybody anywhere on the globe without necessarily emigrating. HEIs in Africa are challenged to create an environment that offers opportunities for academic staff to conduct worldwide cutting edge research. Efforts to prevent massive brain drain particularly in Africa may no longer be necessary if HEIs can carry out massive production of highly-specialized and skilled persons such as doctors, nurses, engineers, and computer scientists that are competitive on the global job market.

Higher education in the twenty-first century must not necessarily buy a person the ability to migrate in re-

sponse to higher incomes offered elsewhere (Katz and Rapoport 2001), but rather should enable individuals to compete in the global job market irrespective of being in Africa or elsewhere on the globe. African governments and their HEIs after educating their own highly-skilled labor force at a huge expense, most of this labor force migrates permanently to international areas where quite often they are even being underpaid (Vaknin 2002). Many of these HEIs whose most highly educated graduates have left are often forced to hire expensive foreign experts. For example, Vaknin (2002) indicated that African countries spend more than US\$4 billion annually on purchasing foreign expert advice and it is in common practice offering better working conditions to foreign experts rather than their own national experts. This practice of course undermines the patriotism of the highly-educated faithful nationals that have opted to remain and serve their home countries.

In Africa, when the highly-skilled people leave their own countries for greener pastures; those left behind are also encouraged to pursue further education in hope of future migration. As more people pursue further education, it leads to the accumulation of human capital in their home countries since not all the highly-educated can migrate to foreign countries. Thus the ones that remain behind can offer services to benefit their home countries. However, most African countries are not prepared to sufficiently utilize the skills of the highly-educated workforce they train locally and abroad. This is especially so with those highly qualified in specialized fields such as high technology in space science, nuclear physics, etcetera. Consequently, these individuals may end up doing jobs outside their careers that they are not even qualified for.

African national expatriates working in developed countries certainly earn much more than their counterparts left behind in their home countries. African HEIs should examine the potential associated with the African intellectual Diaspora as a strategy to counteract the negative effects of brain drain. The brain drain phenomenon can be turned into brain gain by enhancing opportunities for creating business and academic research networks through the intellectual Diaspora. Scholars currently working for African HEIs can be linked to their colleagues (African nationals) laboring abroad to boost research and economic development in Africa. By

doing so African scholars in HEIs back home can gain access to current advanced knowledge, skills, and technologies through their African counterparts working as expatriates in foreign countries.

Increasingly, in Africa we will see more private HEIs given that with the increasing private returns to education, people will feel increased need to become more educated and also be more willing to finance their own education either through their family members or through loans (Reichling 2001). When the educated leave their home country, their remittance indeed boosts the economies and GDP growth of Africa.

The efforts of HEIs must be matched with the local needs of Africa. In order to contribute in a positive way for human development in Africa, curricula at African HEIs should focus on expanding people's choices, thus helping to create an environment for people to develop their full potential and lead productive, creative lives (UNDP 2002).

Conclusion

The international flow of highly educated workers presents a critical challenge to developing countries particularly in Africa. We have explored the concept of human capital investment in least developing countries in the context of brain drain. Research suggests that brain drain presents both negative and positive impact to the human capital resources in Africa. The major challenge facing Africa is to devise means to reverse the negative effects of brain drain so that Africans can benefit out of this phenomena. Africa has the potential of benefiting from the effects of *brain drain* and *brain gain* provided wise strategic policies are constituted. The African Diaspora could be a powerful tool to enhance higher education in terms of contributing knowledge, expertise, and other resources to Africa's HEIs. Many African nationals in the Diaspora are willing to share their resources with their colleagues back home. The challenge is to create a favorable environment to facilitate the opportunities of tapping into such resources and opportunities.

I conclude with five recommendations I feel are necessary to achieve greater brain gain in African higher education. First, encourage joint ventures in academic research agendas and joint publications among local and

international professionals. Second, improve the national communication infrastructure especially in regards to the Internet for the entire African Region. This is essential to better link Africa with the rest of the world. Third, support HEIs (universities and colleges) to establish the technology and brick and mortar infrastructure needed to compete on a global level. Fourth, support academic research with a primary focus on the local needs of Africa and Africans. And finally, increase financial assistance opportunities through grants, donations, and scholarships.

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