

Causes, effects & mitigation of brain drain in Sub-Saharan Africa: an annotated bibliography

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Abstract:

Brain drain occurs when skilled labor from developing countries (LDCs) migrate to developed countries (DCs) in search of better living standards, professional growth, political stability and security, etc. This annotated bibliography aims to explore the causes of the brain drain, its effects on sending countries and mitigation that has been taken by stakeholders to slow it down and help LDCs achieve socio-economic and development growth. Publications cited are in the English language and were published between 2001 and 2022. The scope of this article is Sub-Saharan Africa (SSA) as a region and includes country-specific highlights from SSA countries like Angola, Botswana, Burundi, Cape Verde, Cameroon, Ethiopia, Ghana, Guinea Bissau, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Somali, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe; as well as regional blocks, such as the Southern African Development Community (SADC); East, Central and Southern Africa. Country-specific highlights are included because the brain drain was felt and handled differently within these countries and regions that this literature discusses. Peer reviewed journals, working papers and government sources are also discussed.

Introduction

Migration is not new to human populations. Migration is the movement or mobilization between two clearly defined geographic units resulting in permanent change of usual residence¹. It can be internal, remaining within the country boundaries or international, going beyond the borders. Internally, skilled labor tend to migrate from rural to urban centers within the country because of better chances for professional growth and remuneration. The last several decades has seen an uptick of the “brain drain” from developing countries (LDCs) to developed countries (DCs). According to Tessema, highly skilled labor is scarce in LDCs but it is also known that a good proportion of this labor migrate to DCs causing “brain drain” or “human capital flight”². Dodani and LaPorte define *brain drain* as migration of professionals who search for better standards of living and quality of life: higher pay, better career growth opportunities, access to advanced

¹ Kpedekpo, *Essentials for Demographic Analysis in Africa* (London: Longman, 1976), quoted in Victor H. Mlambo and Toyin C. Adetiba, "The Brain Drain of Teachers in South Africa: Identifying the Dynamics of Its Push Factors," *e-Bangi: Journal of Social Sciences and Humanities* 17, no. 1 (2020): 152. <http://journalarticle.ukm.my/14591/1/37504-118404-1-SM.pdf>

² Mussie Tessema, “Causes, Challenges and Prospects of Brain Drain: The Case of Eritrea,” *International Migration* 48, no. 3 (June 2010): 135. [DOI:10.1111/j.1468-2435.2009.00585.x](https://doi.org/10.1111/j.1468-2435.2009.00585.x)

technology and services; and more stable political conditions worldwide³. This annotated bibliography explores the brain drain phenomenon that has occurred in Sub-Saharan Africa (SSA).

Migration perspectives are measured either from the sending country or receiving country. Merriam-Webster defines *emigration* as departure from place of abode or country for residence elsewhere⁴ while *immigration* is travel into a country for the purpose of permanent residence there⁵. This annotated bibliography looks at migration from the perspective of the sending countries in SSA, and mostly talks about *emigration* and *emigrants*. Since emigrants land in a country somewhere, I discuss *immigration* and *immigrants* to explain some reasons for brain drain. *Return migration* is often a manifestation of a failed migration experience when expected higher income is not realized⁶. Makina explains that when emigrants fail to realize their expectations after emigrating, this failure might prompt their return back to their home country, some cases of which I explore in this literature.

From literature reviewed, most emigrants travel to Australia, Canada, New Zealand, the United Kingdom (UK) and the United States (US) for various reasons as discussed in this article. These countries form The Organisation for Economic Co-operation and Development (OECD), in addition to 33 others including France, Germany, Netherlands, and Portugal that are mentioned in this annotated bibliography. The OECD is an international organization that works to build better policies for better lives⁷. The OECD is mentioned several times in this annotated bibliography as a destination for emigrants. Another regional block I discuss is the Southern Africa Development Community (SADC) which is made up of Tanzania and southern African countries including Botswana, Namibia, South Africa, Zambia, and Zimbabwe, among others. SADC has 16 member states and its main objective is to alleviate poverty, achieve development growth, peace and security, and to improve livelihoods among southern African countries⁸. Emigration from SSA covers a high volume from the SADC region and I have highlighted these in the literature under review. A few regional and internal blocks have tackled the brain drain phenomena, and these include New Partnership for Africa's Development (NEPAD), African Union (AU), International Organization for Migration (IOM), Migration for Development in Africa (MIDA), and Return of Qualified African National (RQAN) that are mentioned in this literature. The acronyms mentioned above will be used as defined.

One of the benefits of emigration that has been highlighted by many authors is remittances. This is most likely because the average emigrant leaves their home country to seek better living

³ Sunita Dodani and Ronald E LaPorte, "Brain Drain from Developing Countries: How Can Brain Drain Be Converted Into Wisdom Gain?" *Journal of the Royal Society of Medicine* 98, no. 11 (2005): 487. DOI: [10.1177/014107680509801107](https://doi.org/10.1177/014107680509801107)

⁴ [Emigration Definition & Meaning - Merriam-Webster](#)

⁵ [Immigration Definition & Meaning - Merriam-Webster](#)

⁶ Daniel Makina, "Determinants of Return Migration Intentions: Evidence from Zimbabwean Migrants Living in South Africa," *Development Southern Africa* 29, no.3 (2012): 365. DOI: [10.1080/0376835X.2012.706034](https://doi.org/10.1080/0376835X.2012.706034)

⁷ [OECD](#)

⁸ [SADC](#)

conditions in developed nations not only for themselves, but for a family left behind. For example, remittances to Kenya from the diaspora in 2021 closed at a record US\$ 3.718 billion⁹, being the highest earner of foreign exchange ahead of tourism, tea, coffee and horticulture exports¹⁰. Most of Kenya's remittances come from the United Kingdom and the United States. Additionally, other gains include the counter flow of human capital, trade, and investments from emigrants back into their home country.

The objective of this annotated bibliography is to explore the literature on the causes of brain drain in SSA, its effects on the region, and the possible mitigation measures that can address this phenomenon. The reviewed literature discusses the causes of brain drain in SSA, its effects and mitigations taken up by policy makers, local and international governments. I have included entries mostly from peer-reviewed journals, some working papers, government sources and published monographs in the English language. The date range for publications reviewed is 2001-2022. I have organized the bibliography into three chronological sections: "2001-2010", "2011-2020" and "After 2020". I have arranged each section alphabetically by main entry (author or title where there is no author) and each section is in alphabetical order. Even though "brain drain" has been experienced in LDCs worldwide, the scope here is only SSA. The bibliography includes works which deal with causes, effects, and the mitigation of brain drain on SSA as a region, and case studies from individual countries. One striking example is the case of the brain drain of medical professionals and teachers from South Africa over the last 20 years. Other countries highlighted are Angola, Botswana, Burundi, Cape Verde, Cameroon, Democratic Republic of Congo, Ethiopia, Ghana, Guinea Bissau, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Somali, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe; as well as regional blocks like SADC, East, Central and Southern Africa. Individual countries handled the phenomenon differently while some were affected more than others within the region.

Bibliography

2001 - 2010

1. Agrawal, Ajay, Devesh Kapur and John McHale. *Brain Drain or Brain Bank? The Impact of Skilled Emigration on Poor-Country Innovation*. Working Paper Series no. 14592, National Bureau of Economic Research (Cambridge, Massachusetts), 2008.
<https://doi.org/10.1016/j.jue.2010.06.003>

According to Agrawal, Kapur and McHale, one school of thought argues that scientific and engineering brains are wasted in poor countries and their emigration to rich countries is beneficial as it raises global innovation, and benefits flow back to their home countries through

⁹ Diaspora remittances survey. December 2021. (Nairobi: Central Bank of Kenya, 2022)
<https://www.centralbank.go.ke/2022/01/21/diaspora-remittances-survey/>

¹⁰ ["Kenya diaspora remittances to hit Sh285.5b in 2019." K24 TV. December 3, 2019.](#)

the import of their products with improved technology or lower costs¹¹. They opine that even though brain drain might weaken the economy of sending countries, emigrated innovators provide innovators remaining at home with access to valuable knowledge accumulated abroad: “brain bank”. They state that this only becomes possible by having an optimal diaspora: the emigrant stock that maximizes national knowledge access. *See more works by Kapur and McHale in entry no. 21 and no. 22.*

2. Al-Samarrai, Samer and Paul Bennell. “Where Has All the Education Gone in Sub-Saharan Africa? Employment and Other Outcomes among Secondary School and University Leavers.” *The Journal of Development Studies* 43, no. 7 (2007): 1270-1300. <https://doi.org/10.1080/00220380701526592>.

Al-Samarrai and Bennell argue that the push to educate more nationals in Sub-Saharan African (SSA) countries has resulted in more high school and university graduates fighting for a fixed number of employment opportunities. Consequently, there is a high level of unemployment and chronic under-employment among educated youth. They quote a study in Malawi, Uganda, Tanzania and Zimbabwe on graduated youth that found that international migration mostly affects university-trained professionals which results from lack of opportunities in sending countries and higher relative wages available in receiving (developed) countries. They observe that secondary school leavers mostly move to other African countries. They conclude that economic and political situations in sending countries seem to give a bigger ‘push’ for emigration. Whereas earlier literature on immigration focused on losses to the sending countries, Al-Samarrai and Bennell report that later literature documents benefits of emigration that include remittances, technology transfer and positive effects on education. *See entry no. 86 for another of Bennell’s work.*

3. Ansah, Esi E. "Theorizing the Brain Drain." *African Issues*. 30, no. 1 (2002): 21-24. <https://doi.org/10.2307/1167085>

Ansah reports that brain drain as a phenomenon began in the 1950s following the great migration of scholars to the US after the World War II. He states that many scholars traveled, first from the global north followed by the global south after the US became a prominent global actor. He explores three theoretical perspectives to the brain drain: the internationalist approach which argues that donor countries do not lose from the migration of high qualified personnel (HQP) because a “brain bank” is created in the developed world that the developing donor countries can draw from. He states that internationalists argue that migration is purely an individual choice based on what’s best for the emigrant dependent on demand and supply of resources. Ansah reports that this view fails to recognize other socio-political reasons for emigrating, and the loss of tax revenue to the donor government. He explains that this differs from the nationalist perspective which views the brain drain as a deliberate exploitation of intellectual resources by the western world that creates a neocolonial dependency of donor countries on developed

¹¹ Peter Kuhn and Carol McAusland. “The International Migration of Knowledge Workers: When is Brain Drain Beneficial?” (Working paper no. 12761, National Bureau of Economic Research (Cambridge, Massachusetts), 2006), 18. [DOI: 10.3386/w12761](https://doi.org/10.3386/w12761)

countries as their (donor countries) much needed HQP leave. He states that nationalists argue that HQP are usually products of training sponsored by public funds, and, therefore, when they migrate donor countries are left with unskilled labor; and HQP become a 'gift' to rich countries that donor countries cannot afford to lose and rich countries do not 'need'. Anah is talking about a third globalization perspective that argues that globalization is a valuable tool where resources from the brain drain can be employed in circulating intellectual resources to benefit all parties involved in the network. He explains that it involves a "brain circulation" that does not necessarily involve physical relocation to the home country, but brains can be circulated and used from wherever they reside. He concludes that this approach even though gaining traction due to globalization, fails to address the bigger problem, which is retaining the brains within the donor countries.

4. Bach, Stephen. "International Mobility of Health Professionals: Brain Drain or Brain Exchange." *The International Mobility of Talent: Types, Causes, and Development Impact* (2008): 202-235. <https://www.econstor.eu/bitstream/10419/63297/1/516498525.pdf>

Bach reckons that doctor and nurse migration data is incomplete and inaccurate because of the sources of information used. He opines that population registers in receiving countries and work permits issued at immigration points of entry detailing occupation and country of origin have largely been used to determine migration trends and this continues to make it difficult to effectively manage migration. Bach reports that international medical graduates (IMGs) emigrate for several push and pull factors. Push factors include wage differentials in source and receiving countries, working conditions; and management and governance factors that cause physicians to exit their own health systems. Pull factors include shortage of health professionals in receiving countries and direct recruitment of health professionals from low-income countries. Bach reports that immigration data is gender-blind and does not accurately capture skill data on women as they are considered passive caregivers. However, he notes that women migrants are not homogenous and are more reliable remitters, despite being de-skilled in employment. In Sub-Saharan Africa, Bach reports that migration has affected the availability of physicians the most, citing examples like Ghana that had a 47% vacancy rate in 2002, worse for nurses at 57%. Zambia and Zimbabwe had vacancy rates of 20-40% per annum during the same period. Overall, he states that historical links play a big part in where medical professionals migrate to, for example those migrants from English speaking countries usually move to Australia, Canada, UK, and the US; Portugal has links to Mozambique while The Netherlands has historical links to former Dutch colonial settler communities like the Afrikaners of South Africa. These historical links, however, declined as migration moved from bilateral agreements between governments to unilateral management of migration in which receiving countries signal their willingness to accept migrants.

5. Barclay, Anthony. "The Political Economy of Brain Drain at Institutions of Higher Learning in Conflict Countries: Case of the University Of Liberia." *African Issues* 30, no. 1 (2002): 42-46. <https://doi.org/10.2307/1167089>

Barclay states that human capital growth is necessary for an economy to develop. He notes that production of human capital is primarily through universities and specialized training

institutions, which in African countries are mostly government sponsored. Barclay explains that when instability occurs in any region, the government's ability to sustain tertiary institutions is affected, and in African countries this has led to an outflow of human capital generally referred to as brain drain. He explores this phenomenon in Liberia from the perspective of University of Liberia founded in 1862 and one of the oldest degree granting institutions in Africa. According to Barclay, before 1980 Liberia was viewed as a country of political stability but following the 1980 bloody coup, it became politically unstable due to a prolonged civil war. He explains that this affected programs at the University of Liberia because faculty development programs were scaled down, there were delays in salary payments, and the general structural functionality of the University deteriorated leading to a brain drain among other ills. The author reports that university students and faculty were vocal against the government and were considered as political opposition and this, along with lack of facilities and equipment, led to a brain drain that affected the production of human capital in the country. Barclay states that to address and reverse the brain drain, the government applied restrictive, incentive and compensatory policies that included: compulsory national service and bonding following completion of education; incentives were offered to highly educated staff in remuneration packages; and receiving countries or emigrants themselves were required to pay back the cost of their education. In politically unstable countries like Liberia, the physical return of drainees has been difficult and, therefore, the use of diaspora skills remotely or "virtually" since the 1990s has begun to contribute to national development.

6. Chikanda, Abel. "Medical Migration from Zimbabwe: Magnitude, Causes and Impact on the Poor." *Development Southern Africa* 24, no. 1 (2007): 47-60. <https://doi.org/10.1080/03768350601165850>

Chikanda observes that professional emigration from Africa has caused great losses in skilled labor in the African continent. He opines that these migration trends are generally due to a lack of opportunities in the sending countries and availability of opportunities in the receiving countries. Emigrating professionals are sometimes replaced by high-cost expatriate professionals from developed countries, and according to Chikanda, it is estimated that African governments spend US\$ 4 billion annually in replacing lost professional skills through emigration with expatriate labor¹². He reports that health professionals in Zimbabwe have often expressed their dissatisfaction with the remuneration packages by going on strike but the government has been unable to meet their demands due to ongoing economic hardship in the country. Consequently, Chikanda reports that Zimbabwe loses its health professionals through emigration at an average loss rate of 24% annually due to economic and political factors. He argues that this leaves government hospitals seriously lacking health workers. Additionally, he opines that the workload of health professionals in public health institutions in Zimbabwe has increased due to emigration of their colleagues. He observes that health professionals in district hospitals have heavier workloads than those in provisional and central hospitals. The role of

¹² Commission for Africa, *Our Common Interest Report of the Commission for Africa* (London: Commission for Africa, 2005), 141. –via ReliefWeb: <https://reliefweb.int/report/world/our-common-interest-report-commission-africa>

nurses in rural hospitals has increased due to shortage of health professionals to include taking on the roles of pharmacists, doctors, physiotherapists, etc.; and observes that less qualified nurses (nurse aids) are carrying out nurse duties in rural areas due to staff shortage. Chikanda reports that consultation in public health sector has been reduced due to these shortages and this leads to long lines and long wait times for patients seeking medical attention. He opines that time spent waiting could have been used on other beneficial income generating activities, making a bad situation worse. In addition, patients have to travel long distances looking for quality health care because nearby institutions may not be adequately staffed. Chikanda concludes that policy makers should come up with ways to alleviate this problem to protect the users that need public health services the most: the poor.

7. Commander, Simon, Mari Kangasniemi, and L. Alan Winters. "The Brain Drain: Curse or Boon? A Survey of the Literature." In *Challenges to Globalization: Analyzing the Economics*, edited by Robert E. Baldwin and L. Alan Winters. Chicago: University of Chicago Press, 2004.

Commander, Kangasniemi and Winters argue that if brain drain encourages more skill creation than skill loss, then it is a good thing for sending countries because they increase their stock of skill. Additionally, they state that accumulation of skill benefits not only the private individuals that acquire the skill, but the economy as a whole. Commander et al. explain that in this scenario emigration has a "drain effect" or negative direct effect on the sending country but with a "brain effect", a potentially beneficial effect of encouraging human capital formation. They explain that beneficial brain drain occurs when the possibility of migration raises education levels, which leaves a significant proportion at home after some skill emigrates because not all skilled labor will migrate for various reasons or barriers. Commander et al. maintain that another benefit of migration is that when skilled labor emigrates, they leave vacancies that can be filled by equally skilled labor at home, ensuring continuity of employment to skilled labor left behind.

8. Crush, Jonathan, Eugene Campbell, Thuso Green, Selma M.W. Nangulah and Thokozani Simelane. *State of Vulnerability: The Future Brain Drain of Talent to South Africa*. Cape Town: Southern African Migration Project, 2005. <https://www.africaportal.org/publications/states-of-vulnerability-the-future-brain-drain-of-talent-to-south-africa/>

Crush et al. report that brain drain has become a major policy and research issue in national, regional and continental levels in Africa. They report that African countries emerged from colonialism with inadequate skilled labor and after independence, they embarked on programs to generate skilled labor locally by sponsoring students, even taking them abroad for further training. The authors state that in the 1980s some of these students stopped returning home and in the 1990s, home grown professionals started looking for jobs abroad, largely due to economic and security situations at home; further complicating the challenge of retaining skilled labor. According to Crush et al., large countries like South Africa and Nigeria lost a lot of skilled labor to the North, but also have the potential to attract skilled labor from smaller African countries. To address this, the authors report that since 2000 South Africa has relaxed its immigration policies to make it easier to import skilled labor from outside the country. Secondly, six SADC countries, including South Africa, ratified a SADC Draft Protocol on Facilitation of Movement of Persons and thirdly, political and economic conditions in neighboring countries like

Zimbabwe has continued to deteriorate, making skilled Zimbabweans migrate to South Africa to fill some skilled labor gaps. This trend is likely to be observed in Swaziland and Lesotho as well, making regional brain drain negatively impact poorer SADC countries more. They opine that only local economic growth and development will keep people at home. *Another work by Crush is below in entry no. 9.*

9. Crush, Jonathan, Wade Pendleton, and Daniel S. Tevera. *Degrees of Uncertainty: Students and the Brain Drain in Southern Africa*. Cape Town: Southern African Migration Project, 2005. <https://www.africaportal.org/publications/degrees-of-uncertainty-students-and-the-brain-drain-in-southern-africa/>

Crush, Pendleton and Tevera report that accelerating cases of brain drain became such a problem in Southern Africa that governments were concerned about its impact on economic growth and development, and its service delivery. They state that the situation was made worse by the impacts of HIV/AIDS that was killing off skilled labor in their prime. According to Crush et al., governments chose to adopt “brain train” [training new skills to replace what was lost] rather than “brain gain” [importing skilled labor to replace what was being lost]. Crush et al. state that politicians were optimistic that the new university graduates were more patriotic and would remain in the country compared to their parents. However, a study done on final year students in six SADC countries by the Southern African Migration Programme (SAMP) in 2003 found that although more than 80% had a strong sense of patriotism and were keen to build their respective countries, more than 70% were less optimistic about their government’s ability to provide employment, safety and health solutions within five years of their graduation. Consequently, 79% had thought about leaving the country, or were in the process of leaving the country after graduation in search of greener pastures. Crush et al. concluded that this was a worrying trend that government officials needed to pay attention to and do better to get solutions to retain skilled labor. Additionally, emigration potential among graduates is high because students’ economic factors are paramount when they considered their future. The biggest losers are Lesotho, Swaziland and Zimbabwe while the primary beneficiaries are North America and Europe and within the region, South Africa and Botswana. *See entry no. 8 for another work by Crush.*

10. Dei, George J. Sefa and Alireza Asgharzadeh. "What Is To Be Done? A Look at Some Causes and Consequences of the African Brain Drain." *African Issues* 30, no. 1 (2002): 31-36. <https://doi.org/10.2307/1167087>

Dei and Asgharzadeh explain that the brain drain happens in two phases: firstly, skilled labor educated in Africa migrate abroad for various reasons and these include scientists, engineers, physicians, health workers, entrepreneurs and other. Secondly, African students who graduate abroad tend to stay abroad, find jobs, settle down and become permanent residents and citizens. The authors identify four main reasons for emigration: 1) inequality between the North and South that has Africa poor, less industrialized and underdeveloped while the North is rich, developed and industrialized; 2) colonial legacy that began more than 300 years back with forced slavery that has seen Africa dependent on colonial masters and Africans imitating the West, aspiring to be like the West and eventually migrating to live a better life in the West while abandoning their indigenous world, languages and lifestyle; 3) Eurocentric vision of the world –

pursuit of greed, materialism and self-interest has African professionals abandoning indigenous magnanimity and seeking better pay and living conditions in the West that sadly, Africa cannot provide; 4) for the die-hard Africans who want to stay and build their economy, unfortunately socio-political matters like political strife, civil wars, religious intolerance, anarchy and lack of human rights sends them to the West in exile, as seen in cases from Angola, Sudan, Somalia, Ethiopia etc. Dei and Asgharzadeh opine that consequently, Africa not only loses its best human capital, but the flight of resources through brain drain deprives it from growth that helps the West instead, and Africa remains in perpetual instability, imbalance and asymmetry. They state that even though brain drain cannot be stopped, it can be significantly reduced if African governments created a socio-political environment conducive for development, investment and made it safe for raising families and enjoying a good social life. In addition, they argue that African heritage should be taught in schools and universities to encourage Africans to be proud of their culture and want to stay and build Africa. Finally, the authors opine that inclusion of the diaspora to fight oppression and injustice in Africa through virtual and information technology to become part of the development solution in Africa will slow down the brain drain.

11. Docquier, Frédéric. "Brain Drain and Inequality across Nations." Discussion Paper Series No. 2440, The Institute for the Study of Labor (IZA), 2006.

<https://dx.doi.org/10.2139/ssrn.947463>

Docquier explains that international migration has been a cause for discussion with policymakers, scientists, etc. and would continue to gain traction with rising wage gap and demographic features that is bound to increase brain drain to developed countries. According to Docquier, there is severe shortages of health professionals in smaller developing countries due to, but not limited to, medical brain drain to Australia, Canada, UK and US. In addition to the negative effects of emigration, Docquier focuses on the positive feedback effects and argues that these possibly outweigh the negative effects. According to Docquier: (a) the anticipation of skilled brain drain increases the incentive for higher education, hence improving the net brain gain at source countries even though some of them will be leaving; (b) skilled migration induces remittances that improves GNP and is a major source of income in many developing countries; (c) return migration and brain circulation are good for growth because emigrants accumulate more knowledge and financial capabilities in rich countries before retiring back home, which are good for productivity and technology infusion; (d) the skilled diaspora facilitates technology transfer and finally; (e) skilled migration can affect governance. *More works by Docquier are in entry no.12 and no. 52.*

12. Docquier, Frédéric and Hillel Rapoport. "Documenting the Brain Drain of 'La Crème de la Crème': Three Case-Studies on International Migration at the Upper Tail of the Education Distribution." *Jahrbücher für Nationalökonomie und Statistik* 229, no. 6 (2009): 679-705.

<https://doi.org/10.1515/jbnst-2009-0603>

According to Docquier and Rapoport, the size and quality of medical professionals in least developed countries (LDCs) is a key determinant of human development and economic performances. They state that in developed countries (DCs) the number of physicians per 1,000 people is more than 3.0 while it is less than 0.25 in many LDCs. They reckon that from figures

collected in 2000, the number of immigrant doctors living in OECD receiving countries was higher than the number back home. Countries most affected were in Sub-Saharan African (SSA), East and South Asia, and Latin America. Consequently, the authors state that this affected the level of medical care given in these countries, especially in pandemics like HIV/AIDS. In SSA, Docquier and Rapoport suggest that a larger prevalence of HIV/AIDS indicates a higher potential rate of medical brain drain because physicians emigrate to DCs to get better conditions of work that will not put them and their families at risk. This creates a vicious cycle because lack of physicians affects medical provision in LDCs and increases death from AIDS and the number of orphaned children. Interestingly, Docquier and Rapoport observe that three major items in Millennium Development Goals are health related, and wonder if this is an impact of prior medical brain drain?-given that there weren't an adequate number of physicians left behind to facilitate good health. They conclude that this situation underscores the importance of retaining physicians in SSA, especially with the advent of anti-retroviral treatment. *More works by Docquier are entry no. 11 and no. 52.*

13. Dominic, Milazi. "Sub-Saharan Africa: Is Regional Economic Integration a Relevant Factor Affecting the Changes Taking Place in International Migration?" *Journal of Social Sciences* 5, no. 3 (2001): 139-152. <https://doi.org/10.1080/09718923.2001.11892298>

Dominic argues that migration can be seen as positive or negative, depending on one's school of thought. He discusses migration trends in Sub-Saharan Africa (SSA) in light of regional economic integration that has taken place in the last 30 years. He states that this was facilitated by resource-poor but skill-surplus countries and resource-rich but skill-shortage small countries like Botswana and Namibia, and post-apartheid South Africa. Dominic states that post-independence Botswana was a hub for high-skilled labor migration from other SSA countries in the early nineties as it offered unparalleled high pay and benefits. This was because Botswana's local labor at that time was unskilled, and worked in South African mines for the most part. Dominic adds that post-apartheid South Africa then became the next hub because it offered higher salaries, and skilled labor from SSA were absorbed in South Africa to fill high-skilled labor gaps. The author observes that Namibia followed this trend offering attractive higher salaries; as well as Lesotho that only had water as a natural resource, and was highly dependent on South Africa where about 45% of its economically active male labor were employed in South African mines. According to Dominic, Malawi's population migrated to work in South African mines while Mozambicans, Rwandese and Somalis fled to Malawi following unrest and insecurity in their countries. While blacks were migrating to South Africa, white South Africans were migrating mostly northwards to farm commercially in Mozambique and Zambia; and to Europe and Australasia. Dominic observes that regional economic integration and the right of movement have contributed to international migration as people search for higher pay while fleeing from poor socio-economic factors, violence, political unrest and instability at home.

14. Dovlo, Delanyo. "The Brain Drain and Retention of Health Professionals in Africa." A Case Study Prepared for a Regional Training Conference on Improving Tertiary Education in Sub-Saharan Africa: Things That Work! Accra, September 23-25, 2003.

[http://library.health.go.ug/sites/default/files/resources/The Brain drain and Retention of health Professionals in Africa.pdf](http://library.health.go.ug/sites/default/files/resources/The%20Brain%20drain%20and%20Retention%20of%20health%20Professionals%20in%20Africa.pdf)

Dovlo states that the African continent faces a health crisis occasioned by several factors that have affected the sector over the past decades, citing migration as one of them. He reports that brain drain from Africa reached peak levels, mostly due to high demands of health professionals from the developed countries. According to Dovlo, studies in Ghana found several push and pull factors for the brain drain. He explains that push factors emanate from the sending countries and include low remuneration, poor working conditions, low job satisfaction, political and ethnic problems as well as civic strife and poor security. The author states that pull factors emanate from the receiving countries and include increased demand for health professionals from developed countries, including aging populations that need more care; and economic changes that make entry-level positions in nursing unattractive. Dovlo concludes that a balance of these push and pull factors lead to a threshold decision to migrate. Furthermore, he suggests possible mitigation measures to slow down the emigration rate to include bonding of health personnel post training; and improving localized training and remuneration packages. *See entry no.15 for another work by Dovlo.*

15. Dovlo, Delanyo. "The Brain Drain in Africa: An Emerging Challenge to Health Professionals' Education." *Journal of Higher Education in Africa / Revue de l'enseignement Supérieur En Afrique* 2, no. 3 (2004): 1-18. <http://www.jstor.org/stable/24486291>

Dovlo gives possible mitigation measures that will encourage health professionals trained in Sub-Saharan Africa to stay home. He acknowledges that retention of medical professionals remains a big challenge and argues that medical institutions should adjust their training to adapt the professionals to the environment they will operate in, making them want to stay after they're trained. Medical institutions should also influence the environments in which these graduates will work to the greatest satisfaction of the health consumers, authorities and graduates themselves. Additionally, he reckons that profiling medical candidates to be admitted will determine their retention rate. For example, in South Africa students recruited from poor and underdeveloped regions are more likely to stay after graduation to facilitate improvement of health facilities in their localities, thereby slowing down the draining rate. Other mitigation efforts would include incentives with higher pay to professionals most likely to migrate; agreements with recruiting countries to slow down active recruiting practices; bonding graduates and compulsory service schemes; skills substitution and delegation where local physicians can do tasks recognized by international professionals, e.g. presence of 'clinical officers', 'assistant medical officers', 'surgical and medical technicians' in Sub-Saharan African countries that perform full functions of physicians. Finally, Dovlo states that return migration has been encouraged, and some countries have extended the retirement age of professionals to enable them work longer and fill any staffing gaps arising from loss of skilled labor. *See entry no. 14 for another work by Dovlo.*

16. Easterly, William and Yaw Nyarko. "Is the Brain Drain Good for Africa?" Working Paper No. 19, Brookings Global Economy and Development, 2008.
<http://dx.doi.org/10.2139/ssrn.1121853>

Contrary to popular belief that brain drain is bad for Africa, Easterly and Nyarko argue that it is, in fact, good. They reckon that fears are overblown and the costs and benefits have a net gain for Africa. They opine that if one had stayed home, one would have added to the socio-economic growth, contributed to their income growth or of those left behind, added to the development of institutions and avoided family separations that might cause non-monetary effects. However, they assert that emigrants are better off in a new location with better benefits; family left behind are better off from assistance given; incentives for better education arise for people aiming to migrate, therefore, positively contributing to the home-country's wellbeing; remittances are beneficial for development and growth; reverse migration may bring back technology, better human capital and ideas from the West that spur growth and development; political institutions may benefit from the emigrants' influence and input; governments may pay better and tax less to retain human capacity at home in response to emigration and emigrants may enhance trade between the host country and home country. According to Easterly and Nyarko, Africa still has a low level of skilled labor compared to worldwide standards, and argue that even if all emigrants had stayed home, Africa would still be below the required level of skilled labor needed. They argue for improved lives of the emigrants themselves which is substantial, rather than negative effect on the sending countries and they conclude that brain drain (or brain circulation because of the benefits brought back home) is good for Africa. *See entry no. 78 for another title by Nyarko.*

17. El-Khawas, Mohamed A. "Brain Drain: Putting Africa Between a Rock and a Hard Place." *Mediterranean Quarterly* 15, no. 4 (2004): 37-56. muse.jhu.edu/article/176892

According to El-Khawas, brain drain from developing countries rendered them incapable of handling their respective country's biggest threats: poverty, disease and underemployment. He opines that even though there is no quick fix, human capital flight can be addressed: African governments must expedite political, economic and social reforms to make Africa attractive to skilled manpower, both at home and in the diaspora. He gives the Kenyan example: at the end of Daniel Moi's reign in Kenya as a long-term president, his successor Mwai Kibaki called on Kenyan emigrants to return home and build back Kenya. Kibaki noted that Kenya needed all her brains back, and all hands-on deck to fix the country. El-Khawas notes that Africa needs to concentrate more on retaining the brains at home before wooing back emigrants as it can be futile to train brains in science and technology that will end up leaving the country. He insists that retaining skilled labor ought to be a priority, and this means raising wages, improving work conditions, creating viable career opportunities and career ladders and doing away with ethnic and tribal discrimination in employment. Additionally, he opines that African governments must concentrate on offering incentives and research possibilities to the diaspora, to attract them back and keep them at home to build Africa. By 2004, El-Khawas states that Kenya had managed to attract six hundred doctors back by offering higher salaries, even though Kenya could not match salaries offered in most developed countries.

18. Gerein, Nancy, Andrew Green and Stephen Pearson. "The Implications of Shortages of Health Professionals for Maternal Health in Sub-Saharan Africa." *Reproductive Health Matters* 14, no. 27 (2006): 40-50. [https://doi.org/10.1016/S0968-8080\(06\)27225-2](https://doi.org/10.1016/S0968-8080(06)27225-2)

Gerein, Green and Pearson discuss the possibility of perception of risk of occupational HIV/AIDS infection among health workers in Sub-Saharan Africa causing their emigration to developing countries. They discuss the implications of emigration on maternal health back home and report that a regression analysis of 117 countries showed that doctor, nurse and midwife densities affect maternal health and mortality. According to Gerein et al., the effects of emigration can be put into two main categories: effects on existing health professionals and effects on maternal health care including availability and quality of services. They report that remaining health workers in this region suffer burnout because their numbers are inadequate to meet the local demand. Gerein et al. report that job satisfaction is lower due to understaffing of health personnel and loss of co-workers to emigration. This increases workload and changes role expectations, increases levels of stress and fatigue as well as emotional exhaustion. They opine that all these factors affect the quality and level of services provided and might lead to high maternal and newborn mortality, seen mostly in rural areas compared to urban areas. Gerein et al. report that health care shortages are felt acutely in rural areas more than urban centers in Sub-Saharan Africa.

19. Hagopian, Amy, Matthew J. Thompson, Meredith Fordyce, Karin E. Johnson, and L. Gary Hart. "The Migration of Physicians from Sub-Saharan Africa to the United States of America: Measures of the African Brain Drain." *Human Resources for Health* 2, no. 1 (2004): 1-10. [DOI:10.1186/1478-4491-2-17](https://doi.org/10.1186/1478-4491-2-17)

Hagopian et al. report that international migration of physicians to developed countries has been on the rise. While the UK has tried to come up with its own physicians to curb recruiting of international physicians from poor countries, nurses are still recruited in large numbers. They state that the US, in contrast, has been reluctant, unable or unwilling to reduce its importation of foreign-trained international medical graduates (IMGs) and has programs in place to encourage emigration from African countries. They state that the US has policies to make it easier for IMGs to migrate by having visa waivers, offering visas to IMGs who will work in underserved areas in the US and will grant permanent residency to IMGs under a number of circumstances. All these factors create a demand for IMGs from poor countries looking for greener pastures, and accelerates the brain drain of physicians from developing countries like the Sub-Saharan African region. Hagopian et al. suggest that data should be tracked on the number of graduates produced by local educational systems, the number that remain in the country and those that migrate. This will assist in formulating policies to retain trained personnel and change the curriculum not to make emigration such a prestigious outcome that skilled labor aspire to take up. *See also Hagopian in entry no. 28.*

20. Ite, Uwem E. "Turning Brain Drain Into Brain Gain: Personal Reflections on Using the Diaspora Option." *African Issues* 30, no. 1 (2002): 76-80. <https://doi.org/10.2307/1167096>

Ite states that even though the brain drain phenomenon has always been there, it forms a large component of recent migration streams. He reports that the brain drain can be detrimental to the sending countries and slow down development. However, he argues that it may also increase the productivity of a developing country when the involvement of the diaspora in national development strategies turns brain drain into brain gain. He draws from his personal experience of being drained from Nigeria to studying in the UK and states that brain drain is not only a drain on skilled manpower but the “draining of results” or escape of knowledge and information. It discusses two options of using the diaspora: the *return option* where expatriates physically return to their country of origin, an option successfully promoted in India, Singapore and China. In order for this to be successful, however, the economy needs to open up to foster domestic investment as well as research and development. It explains that the *diaspora option* involves the remote mobilization and association of expatriates to the development of their countries of origin. According to Ite, this can be pursued without the physical relocation of the expatriates often by involving diaspora in professional bodies in their host countries which sponsor programs that are beneficial to the development of their home countries. He states that the diaspora can use their linkages to Western institutions with African universities and institutions to spur growth and development back in their home countries. He concludes that it is unrealistic to expect the diaspora to physically return to their home countries, and encourages political leaders and university managers to take advantage of and use the diaspora option to encourage the diaspora to contribute towards development of higher education in Africa, which will hopefully reduce the drain in the long run.

21. Kapur, D. and J. McHale. *Give Us Your Best and Brightest: The Global Hunt for Talent and Its Impact on the Developing World*. Washington, D.C.: Center for Global Development, 2005. <https://www.cgdev.org/sites/default/files/9781933286037-Kapur-Hale-best-and-brightest.pdf>

Kapur and McHale explain the sea of change of migration trends from alarm (brain drain) to hope for remittances; for ‘brain gain’ when potential emigration is a possibility leading to greater incentives for human capital growth; and for network effects of enriched and savvy diaspora (brain trust). They opine that emigration of skilled labor is gaining tract in recent years, driven by migration policies from rich countries being relaxed to make it easier for immigrants. Cost-focused outsourcing is likely to strengthen high-tech sectors and bolster confidence of skilled workforce. Additionally, Kapur and McHale state that international competition of skilled labor will be abetted by the aging of a rich country’s population. They state that fiscal costs of an aging population are huge, creating a targeted effort to recruit higher-earning foreign workers to pay for the pension and health care benefits of the domestic population. As globalization expands, Kapur and McHale argue that familiarity with foreign cultures encourage recruitment of foreign skilled labor. All these factors cause emigration from poor countries and is escalated by targeted recruitment from rich countries. Kapur and McHale discuss the advent of African populations’ migration to the West from as far back as slave trade periods where the active male workforce was sold into slavery in the West. They compare this to the current voluntary

emigration of the middle working class that equally leaves the African countries deprived of scarce skilled labor. In 2002, the biggest losses were from Ethiopia, Nigeria and Ghana. Additionally, they argue that emigration hurts sending countries in a number of ways: they lose a major source of tax revenue paid by skilled workers, domestic income levels and long-term economic developments are reduced, and the smaller number of skilled workers left behind are faced with an ever-increasing workload. Conversely, Kapur and McHale contend that the potential to migrate might increase human capital growth in sending countries, if they do experience return migration, resulting in some positive effects for sending countries, citing the example of African footballers who are recruited by European football leagues, who then return to their sending countries to play in the World Cup. *More works by these authors are in entry no. 1 and no. 22.*

22. Kapur, Devesh. "Diasporas and Technology Transfer." *Journal of Human Development* 2, no. 2 (2001): 265-286. [DOI: 10.1080/14649880120067284](https://doi.org/10.1080/14649880120067284)

Kapur states that migration rates for individuals with tertiary education from small countries is especially high, citing African countries among others. He states that historical links and proximity to European countries enabled the migration trends, combined with continued economic and political travails on the continent. According to Kapur, the situation of skill loss is bigger than captured because discussions do not take into account "non-immigrants", a category that is skill-intensive. He explains that these include those with business and work visas that leave their sending countries for 3-5 years to work in developed countries like the US. This further aggravates the skill loss situation from sending countries. He notes that the rate at which the diaspora is involved back home is dependent on the extent to which their sending countries have political and economic stability. Kapur cites the efforts of International Organization of Migration (IOM) that founded the "Return of Qualified African Nationals Program" that aimed to return and reintegrate qualified nationals. He notes that their efforts were moderate because African countries continued to have political and economic instability that deterred the diaspora from returning. Kapur observes that it was an expensive irony that many talented Africans lived abroad while the number of foreign expats coming to the African continent to give technical assistance, more often dubious, is rather high. He reckons that it would be more beneficial to repatriate brain-drain for technical assistance as this is more cost-effective compared to importing expats. Kapur concludes that developing countries would need to improve their economic and political status to turn brain drain into brain gain. *More works by Kapur are in entry no. 1 and no. 21.*

23. Kasusse, Michael. "Bridging the Digital Divide in Sub-Saharan Africa: The Rural Challenge in Uganda." *International Information & Library Review* 37 no. 3, 2005: 147-158. [DOI: 10.1080/10572317.2005.10762676](https://doi.org/10.1080/10572317.2005.10762676)

A study done by Kasusse on bridging the digital divide in Uganda found that it was wide between the rural and urban areas. Kasusse argued that bridging the digital divide was crucial in Uganda's economic progress. He reported that Uganda was known for its policies and institutional measures to increase rural participation in the development process. The reality, however, was that majority of the rural population still did not have access to the internet, and a

big percentage of the national population was in rural areas. His study aimed to find ways of bridging the digital divide. One of the major findings was that developing IT in rural areas would help fight brain drain, and reduce emigration to developed countries internationally. He reckoned that this would be done by developing IT and offering skilled people job opportunities and co-ownership of new joint venture businesses.

24. Mattes, Robert and Namhla Mniki. "Restless Minds: South African Students and the Brain Drain." *Development Southern Africa* 24, no. 1 (2007): 25-46.

[DOI: 10.1080/03768350601165769](https://doi.org/10.1080/03768350601165769)

Mattes and Mniki did a study to establish the potential to migrate among tertiary students in South Africa. They argued that at that point in time, potential to emigrate did not necessarily translate to permanent skills loss and the government investment made in the training. They reported that those that were very likely to emigrate still planned to make annual trips back home on vacation and/or send money back home on a monthly basis. This lot also planned to stay in their new destination for five years at least, according to Mattes and Mniki. They found that the most likely destination for emigration was the UK, followed by the US, Australia, Canada and Europe. According to Mattes and Mniki, there were racial differences in the desired destination. Black, white and colored respondents desired to end up in Europe although Indian respondents were significantly less likely to say so. Black respondents were slightly more likely to end up in the US while white respondents were more likely to end up in Australasia. Mattes and Mniki concluded that the government would need to put policies in place to encourage retention of skilled graduates like creating employment, good schools, reduce crime, and good infrastructure to give graduating students a reason to stay and build up their professions locally.

25. Meyer, Jean-Baptiste. "Network Approach versus Brain Drain: Lessons from the Diaspora." *International Migration* 39, no. 5 (2001): 91-110. [DOI: 10.1111/1468-2435.00173](https://doi.org/10.1111/1468-2435.00173)

Meyer reports that the 'brain drain' phenomenon or phrase was first used in 1963 referring to human capital being moved from one location to another. He explains that the human capital approach views skills as a stock of knowledge or abilities embedded in an individual and literally moving the body means moving the knowledge accumulated in it. He discusses the influence of migration networks on migrants and reports that migrants generally give information to networks at their home countries about opportunities available abroad, financial expectations and processes needed that diminish the risks of migration. He states that these can be based on the geographical location or occupation of the initial immigrants. Consequently, Meyer explains that subsequent migrants tend to migrate to locations or occupations where their networks are based, terming it the network approach to migration. He notes that highly skilled migrants (HSM) do not rely on their kin's information alone the way lower skilled migrants do, and states that HSM have a wider network of colleagues, fellow alumni and relatives that they can consult. Even then, Meyer argues that institutions consider social capital (networks) more important than human capital because it determines the productivity of the HSM. According to Meyer, HSM tend to be more qualified than skilled labor back home because of the competitive nature of their professional environment in their host countries, they do not keep up with their nationals nor attend national ceremonies in the host country, do not join national associations but they travel

back home as frequently as every two years and keep in touch with personal contacts in their home country. However, he notes when they are called upon to be involved in a home country knowledge network they may react positively and unexpectedly get involved. Meyer notes that HSM find it difficult to reintegrate back into home country because of socio-political, economic and cultural differences from their host countries, making reverse migration rare. *Another work by Meyer is entry no. 26.*

26. Meyer, Jean-Baptiste and Jean-Paul Wattiaux. "Diaspora Knowledge Networks: Vanishing Doubts and Increasing Evidence." *International Journal on Multicultural Societies (IJMS)* 8, no. 1 (2006): 4-24.

Meyer and Wattiaux explore diaspora knowledge networks (DKN) that have existed in various forms in the science and technology (S&T) sphere, whose goal is to contribute to the development of their members' places of origin through their skills' input. They opine that DKN have turned brain drain into brain gain by converting the loss of human capital and enabling circulation of brains remotely through the DKN. They report that DKN began with the Colombians mobilizing skills abroad to address gaps back home. They state that due to the successes of this venture, from 1998 onwards South African Network of Skills Abroad [SANSA] launched a similar venture to bring together S&T expatriates living in the West to tap into their skills virtually to enable S&T development back home. With extensive use of the internet to facilitate the process, the success rate was higher than originally anticipated. They point out that critics of DKN have questioned its consistency and efficiency and report that the rise of the internet has made it possible to achieve consistency as the number of DKN available seem to increase rather than decrease. According to the authors, DKN are substantial, consistent initiatives of international cooperation which states and inter-governments agencies, including NGOs may consider seriously. *Another work by Meyer is entry no. 25.*

27. Muula, Adamson S. "Is There Any Solution to the "Brain Drain" of Health Professionals and Knowledge from Africa?" *Croatian Medical Journal* 46, no. 1 (2005).
<http://neuron.mefst.hr/docs/CMJ/issues/2005/46/1/15726672.pdf>

Muula argues that African governments are responsible for finding a solution to the health brain drain plaguing the continent: by making work conditions acceptable to health workers and creating environments that promote job satisfaction. Additionally, Muula argues that it helps to train more healthcare workers although this is potentially a short-term solution because most workers leave after a few years of work. However, he points out that with more workers trained, even with the brain drain more health workers are bound to still remain in the country. He suggests that interviewing candidates before training would reduce the problem because only candidates more likely to stay in the country would be trained. Muula also proposes that school curricular should be geared towards the countries of origin to deter recruitment from developing countries. He explains that this is because most curricular follow the syllabi left behind by colonial powers which is similar to the colonial countries. The author reckons this makes it easier for locally trained workers to assimilate in the developed world. Indigenizing the curricular should not be too specific though as it may prevent workers from pursuing advanced training in the developed world. He concludes that a balanced approach needs to be considered.

Other methods of mitigation that the author mentions include encouraging African workers to join unionism of health professionals; bonding of health professionals; stopping recruitment from developed countries and encouraging return of health professionals living abroad.

28. Nguyen, Lisa, Steven Ropers, Esther Nderitu, Anneke Zuyderduin, Sam Luboga and Amy Hagopian. "Intent to Migrate Among Nursing Students in Uganda: Measures of the Brain Drain in the Next Generation of Health Professionals." *Human Resource Health* 6, no. 5 (2008). <https://doi.org/10.1186/1478-4491-6-5>

Nguyen et al. report on a study done on nursing students' career intentions given that the predicted additional nurse requirements for the developed countries was likely to wipe out nursing resources in developing countries through migration. This study intended to collect views of nurses still in training to mitigate migration by graduation, where necessary. The study found that only 39% of nurses thought urban Uganda was safe to work in, with only 19% thinking rural Uganda was safe; only 5% thought financial satisfaction could be found in Uganda while 94% thought it was found in the US or Canada, 89% in the UK and 41% in another African country. The study found that 88% thought their work made a difference in the country while 70% thought that if their studies were government sponsored then they should stay in the country and work. Half of the participants expressed a desire to leave the country since childhood or before joining nursing school even though 46% expressed fear of racism abroad with 34% expressing fear of depression. The participants thought that staying in Uganda was not desirable because of too little pay, inadequate equipment and supplies, poor benefits, not enough public-sector jobs for nurses and nurses treated badly. The study found that only 8% responded that it was unlikely they would migrate with 70% planning to migrate within 5 years of graduation to the US, UK, Canada or another African country. Also, 80% reported to prefer working in urban centers with only 29% in rural areas. Overall, the study found that if pay and terms of employment were good, nurses would stay in the country and concluded that this gives the government matters to work on to reduce brain drain of nurses. *See another work by Hagopian in entry no. 19.*

29. Nullis-Kapp, Clare. "Efforts Underway to Stem 'Brain Drain' of Doctors and Nurses." *Bulletin of the World Health Organization* 83 (2005): 84-85. http://catalogue.safaid.net/sites/default/files/publications/2005_2014_Brain_Drain.pdf

Nullis-Kapp reports that international recognition about the growing shortage of health workers in developing countries that posed a threat to fighting diseases like HIV/AIDS and tuberculosis caused a flurry of mitigation measures to be put in place to stem the exodus of health professionals. She reports that these initiatives include ethical recruitment codes to try and limit damage caused by brain-drain, whereby recruitment puts into consideration potential impact on the source country to avoid depleting it of health workers. The author states that exchange programs were initiated in bilateral twinning programs where health workers from South Africa are allowed to work in the UK for theoretical and practical training while experienced nurses were sent to South Africa to mentor nurses in South Africa. According to the author, IOM reported that emigrants wanted to return home but feared losing their resident status in receiving countries. Consequently, Nullis-Kapp reports that developed countries were encouraged to allow

an open-door policy where migrants were allowed to return home giving them freedom to change their minds. She states that IOM introduced MIDA (Migration and Development for Africa) which tries to encourage mobility of workers. It allows long and short term return of emigrants back home or virtual-returns through video-link-ups that allow skilled emigrants to teach at home.

30. Ogom, Raphael O. "The African Union, African Diasporas and the Quest for Development: In Search Of the Missing Link." *African Journal of Political Science and International Relations* 3, no. 4 (2009): 165. <https://doi.org/10.5897/AJPSIR.9000103>

Ogom reports that Sub-Saharan Africa (SSA) continues to experience underdevelopment in great proportions as 40% of its population still lives below international poverty line at under US\$1.00 per day. He reckons that to make a bad situation worse, SSA is losing skilled manpower to the developed world in high numbers and it is estimated that roughly 35 million citizens of African descent (both voluntary and involuntary, including African Americans) are living in the US with a combined collective purchasing power of \$450 billion per year! He reports that African immigrants boast the highest level of education with 250,000 scientists and physicians living in the US alone. Ogom notes that Ethiopia has more physicians living in Chicago, Illinois, than in Ethiopia! Consequently, African governments have started a push to engage African diaspora (AD) for the continent's growth. Ogom states many efforts to lift Africa up have failed and ponders if engaging the AD is the missing link that will finally lift Africa in development and allow it to access financial backing that it needs for development even though the modalities of this partnership are still under construction. He opines that the AU-AD cooperation will enable AU to tap into the resources that the AD has, and AD's linkages to the developed world to advance development on the continent. Ogom argues that AD can change the negative reporting Africa gets on international media by slowly but surely portraying the significant development that has taken place over the years. According to Ogom, AD not only sends remittances but is actively getting involved in local governance including the right to vote from abroad and advancing ICT through virtual connectivity. However, Ogom concludes that this will not be possible unless a development environment change occurs in African states.

31. Pillay, Anthony L., and Anne L. Kramers. "South African Clinical Psychology, Employment (in) Equity and the "Brain Drain"." *South African Journal of Psychology* 33, no. 1 (2003): 52-60. <https://doi.org/10.1177/008124630303300107>.

Pillay and Kramers state that emigration from South Africa has increased since apartheid ended, especially skilled labor while much less immigrants have been received in the same period, creating a net deficit of skilled professionals. They track the status of psychology professionals in South Africa post internship. They found that a quarter of the interns trained over the last two decades migrated to developed countries after completing their internship. Pillay and Kramers opine that this is a serious problem and sought to identify ways to reduce emigration. According to Pillay and Kramers, South African health professionals are required to compulsorily volunteer their services in local communities for one year following completion of their internship and they argue that while this delays emigration, it does not eliminate it. Pillay and Kramers argue that more permanent solutions need to be sought by the government like providing incentives in form

of better remuneration and safety of nationals; nation-building in its truest sense such that the country transforms its apartheid past and crime-ridden present to make it a country that one would truly want to stay in.

32. Record, Richard, and Abdu Mohiddin. "An Economic Perspective on Malawi's Medical "Brain Drain"." *Globalization and Health* 2, no. 1 (2006): 1-8. [DOI: 10.1186/1744-8603-2-12](https://doi.org/10.1186/1744-8603-2-12)

Record and Mohiddin argue that even though many consider brain-drain as bad for African countries and blamed “rich” countries for “looting” doctors and nurses from developing countries, brain-drain has actually been good for poor countries like Malawi. They report that medical professionals have emigrated from Malawi to the extent that Malawi government has had a difficult time addressing their Essential Health Package and absorbing new international health funding due to lack of doctors. They observe that Malawi, clearly, has demonstrated its ability to produce competitive medical professionals that can work abroad. Record and Mohiddin reckon that Malawi’s medical brain drain is a positive venture for Malawi because, apart from emigrants benefiting directly, they can pay back training costs after migrating, or the receiving government can pay back tax to Malawi, all of which can be used to train new medical professionals for local needs and working abroad. Thereby, Malawi can benefit from the export of medical personnel as a potential source of foreign exchange. Furthermore, Record and Mohiddin report that Malawi’s medical brain drain continued to outstrip its health training rate with an approximate 100 nurses migrating compared to 60 nurses trained annually. The Government of Malawi (GoM) put in place measures to address the dire situation by launching a Sector-Wide Approach (SWAp) for the health sector in a bid to revitalize its medical services. It introduced an Essential Health Package (EHP) of 2-2-1 (2 nurses, 2 medical assistants and 1 clinical officer) per facility even though the health professionals who remained at home were grossly insufficient to fill these gaps. The UK, Norway and the World Bank pooled together resources to give to the Ministry of Health a budget to cover delivery of EHP, strengthening of human resources, systems strengthening and referral over a period of seven years. GoM also committed to give its share to the EHP program. These efforts, even though unable to compete with salaries abroad, were meant to lift Malawians out of poverty and remunerate the medical professionals enough to reduce the rate of brain drain.

33. Robertson, Susan L. “Brain Drain, Brain Gain and Brain Circulation.” *Globalisation, Societies and Education* 4, no. 1 (2006):1-5. [DOI: 10.1080/14767720600554908](https://doi.org/10.1080/14767720600554908)

Robertson discusses the effects of brain drain on sending countries and states that in addition to skilled labor emigration mainly from doctors, teachers and nurses, the world is now seeing emigration of unskilled labor as well. She notes that skilled labor mostly emigrate permanently (with their families), making it unlikely that they will return to the sending country, and hence tend to remit less than their unskilled compatriots. Robertson reports that unskilled labor leave their families behind and remit funds back home, though these are too small to quantify. Consequently, she argues that there is doubt that remittances can ultimately relieve poverty and reduce income gaps. Robertson argues that there should be more discussions on unskilled labor emigration as they are now most likely to make remittances. Besides, she states that brain gain is experienced when emigrants return home, something she claims is a big assumption they come

back to stay. Robertson explains that brain circulation happens in cases, for example between Botswana and South Africa where the former is a net importer of teachers while the latter is a net exporter of teachers. Robertson opines that countries are now working to attract best labor or to lure talent back. In any case, she argues that migration of labor in whichever direction should be free without restrictions.

34. Schrecker, Ted and Ronald Labonte. "Taming the Brain Drain: A Challenge for Public Health Systems in Southern Africa." *International Journal of Occupational and Environmental Health* 10, no. 4 (2004): 409-415. <https://doi.org/10.1179/oeht.2004.10.4.409>

According to Schrecker and Labonte, reasons for migration are not necessarily limited to higher income in destination countries but sometimes due to several push, pull and stick factors. They opine that quality of life in sending countries vs receiving countries, crime and education possibility for children play a role in the decision to emigrate. They report that the rising emigration phenomenon and its negative effects are unlikely to be offset by remittances back home. The long periods of training required for the skilled labor means that when they migrate, their remittances flow back disproportionately to a few well-off households. They argue that these remittances, therefore, increase inequality in the countries of origin. According to Schrecker and Labonte, the cost of health professionals' emigration is far greater than the direct cost of their training. They argue that the provision of health care is reduced and there is reduction in training and research capacity as well. These undermine long term domestic economic and social development. Schrecker and Labonte are doubtful that these remittances will be sufficient to address these costs.

35. Scott, Mark L., Anna Whelan, John Dewdney, and Anthony B. Zwi. "'Brain Drain' or Ethical Recruitment?" *Medical Journal of Australia* 180, no. 4 (2004): 174-176. [DOI: 10.5694/j.1326-5377.2004.tb05862.x](https://doi.org/10.5694/j.1326-5377.2004.tb05862.x)

Scott et al. state that migration of highly skilled medical personnel from poor countries to rich countries has been going on since the 1960s and severely impedes provision of basic medical care infrastructure in poor countries, especially in sub-Saharan Africa. For example, they explain that failure to get Australian doctors to work in rural and remote areas in Australia, and their shortfall in producing medical personnel relies on health professionals from poor countries to fill this gap, taking healthcare provision from countries that can ill afford to lose their healthcare professionals. Scott et al. ponder on whether this is unethical because Australia is an affluent country or if it would be unethical to prevent health professionals from emigrating for better personal opportunities in rich countries. According to Scott et al., some argue that skilled professionals are "exportable" assets and sending countries can benefit from their remittances to offset the cost of the loss. However, they argue that these remittances are small and are not reinvested directly into the human capital in health systems, and therefore, their remittance cannot offset cost of the loss of highly experienced health professionals in a grossly understaffed health service.

36. Siphambe 1, Happy Kufigwa. "Botswana's Economy and Labour Market: Are There Any Lessons for SADC Regional Integration?" *Development Southern Africa* 21, no. 2 (2004): 353-364. DOI: [10.1080/0376835042000219578](https://doi.org/10.1080/0376835042000219578)

According to Siphambe, Botswana has been a recipient of skilled labor, especially medical professionals, university lecturers and artisans from regional SADC countries. However, he reckons that Botswana has not been equally receptive of unskilled labor. Siphambe explains that Botswana and South Africa are considered the richer countries in the SADC region, and sending countries have not taken it kindly that they [Botswana and South Africa] are recipients of brain drain from regional countries. He states that these countries have argued that training labor is expensive and capital intensive and, therefore, losing their skilled labor to Botswana or South Africa takes a toll and leaves labor gaps. According to Siphambe, Botswana and South Africa argue that it is not brain drain but brain circulation within the region. Observers fear that brain drain will lead to under investment in education because governments are losing skilled labor after spending a lot of money on training. Siphambe argues that this will lead to insufficient labor within the region in the long run and he calls for policy coordination.

37. Stern, Matthew and Gábor Szalontai. "Immigration Policy in South Africa: Does it Make Economic Sense?" *Development Southern Africa* 23, no. 1 (2006): 123-145. DOI: [10.1080/03768350600556380](https://doi.org/10.1080/03768350600556380)

According to Stern and Szalontai, most emigrants from South Africa end up in Australia, Canada, New Zealand, the UK and the US. They opine that most of this emigration happened between 1989 and 2003 and most of the emigrants were relatively skilled labor, leading to brain drain from South Africa. Accordingly, they state that this higher level of emigration compared to a much lower level of immigration into South Africa caused a net loss effect on skilled labor in South Africa, with recalculations of emigrants coming to approximately eight times the number of professional immigrants into South Africa over the same period. Difference in wages, living and working conditions are main causes for emigration. Additionally, Stern and Szalontai report that rising age demographics in developed countries has opened new job opportunities for workers from developing countries, especially teachers and nurses. They state that in recent years, South Africans have emigrated, not only to the five English-speaking countries and the UAE, but to other Sub-Saharan African and EU countries as well which has contributed to brain drain.

38. Sydhagen, Kristine and Professor Peter Cunningham. "Human Resource Development in Sub-Saharan Africa." *Human Resource Development International* 10, no. 2 (2007): 121-135. DOI: [10.1080/13678860701347156](https://doi.org/10.1080/13678860701347156).

Sydhagen and Cunningham explore the drivers behind Human Resource Development (HRD) in Sub-Saharan Africa (SSA). They state that SSA has been influenced by environmental issues such as disease, wars and weak institutions which have led to inequalities and less social development in society. They argue that there is no shortage of human resources but for people to meet the challenges and seize opportunities, HRD must play a strategic role in ensuring fairer access to resources and sustainable development in the region. Additionally, HRD helps in

eradicating poverty in the region. Accordingly, Sydhagen and Cunningham opine that SSA is vulnerable to skills migration in a globalized world. However, they state that there is an increasing focus on African management identity and HRD can improve political and economic development, educational and vocational training, global leadership development etc. that will improve lives of people and society as a whole. The authors report that skills emigration has been going on for decades, and if not reversed it might prove devastating for economies. Sydhagen and Cunningham conclude that countries must take up strategies to build up and keep their workforce by building attractive labor markets through sound HRD strategies and policies.

39. Tebeje, Ainalem. "Brain Drain and Capacity Building in Africa." *IDRC reports 22* (Feb. 2005). <https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/34566/126237.pdf>

Tebeje reports that the African professional sector is dwindling due to brain drain to the Western world. Consequently, Africa employs 150,000 foreign expats at a cost of US\$4 billion per year. Additionally, she reports that the departure of medical professionals has made it impossible for Africa to meet basic health and social services in most SSA countries, and 38 of the 47 countries fall short of the World Health Organization's requirement of 20 physicians to 100,000 persons. Tebeje also reports that over four decades of brain drain, the world focused more on remittances and overlooked the impact on human resources, institutional capacity and health/social services. She states that studies have shown that reverse migration has not worked very well because African governments have still failed to address the push and pull factors that led to migration in the first place. Notwithstanding, Tebeje argues that some factors have potential to address the brain drain phenomenon: virtual participation is the art of tapping into the diaspora's capabilities without their physical relocation. She argues that brain drain becomes a potential gain and not a loss because the diaspora become a potential pool of human resources. According to Tebeje, the African Diaspora has taken steps to become more involved in the development of their home countries because of their intellectual and material input. Out of this, she reports that AHEAD (Association for Higher Education and Development) based in Canada was founded by the IDRC (International Development Research Centre) to facilitate the Diaspora's involvement in African issues¹³. Tebeje explains that virtual linkages are independent, non-political, non-profit networks facilitating skill transfer and capacity building. She reports that the networks mobilize skilled diaspora members' expertise for the development process in their home countries by investing in companies, becoming visiting scholars and investing in joint ventures between the hosts and sending countries.

40. Teferra, Damtew. "Brain Circulation: Unparalleled Opportunities, Underlying Challenges, and Outmoded Presumptions" *Journal of Studies in International Education* 9, no. 3 (Fall 2005): 229-250. <https://doi.org/10.1177/1028315305277>

Teferra talks about the recent discussions and occurrences of brain drain from Africa to the West and consequent brain circulation that engages the brains in African sociocultural and sociopolitical development of their home countries. He emphasizes that there's no amount of

¹³ Ainalem Tebeje is a former journalist and was Vice President of AHEAD at the time this report was written in 2002.

brain circulation that can fully compensate what is lost to massive brain drain and notes that the outflow of highly skilled personnel are serious threats to socioeconomic and sociocultural development in developing countries like Africa. Teferra talks about the emergence of the information era that has birthed virtual engagement of the diaspora and points out its benefits to include getting involved no matter the geographical location; and that it's not bound by any control or regulation because the players do so at the comfort of their homes or private spaces. He notes that developed countries consciously recruit highly skilled manpower from developing countries (LDCs), and the LDCs cannot compete due to lack of resources. Moreover, Teferra opines that LDCs are not able to spur socioeconomic development to deter or reduce the brain drain. He makes mention of several international organizations that have actively taken up discussions on the brain drain, how to manage it and circulate the brains as a mitigation factor; as well as remittances that have increased to millions of dollars to donor countries. According to Teferra, brain circulation faces several challenges: political interference and lack of supporting government policies; social factors that lead to envy, jealousy, rivalry, turf protection by home-based manpower that affect the mobilization of the diaspora in their home countries; academic factors where sometimes political interference impedes home-based academics' involvement and at other times, interactions between diaspora and home-based academics are seen to be in different leagues; intergenerational differences between the diaspora and the home-based manpower is not necessarily a bad thing but needs to be infused with a sense of the common good; infrastructural factors that are necessary to enhance collaboration and interaction between the diaspora and their colleagues back home in addition to economic and cultural factors that differ between developed and developing countries. *See more works by Teferra in entry no. 41 and no. 42.*

41. Teferra, Damtew. "Mobilizing the African diaspora." *International Higher Education* 35 (2004): 20-22. [DOI: 10.6017/ihe.2004.35.7409](https://doi.org/10.6017/ihe.2004.35.7409)

Teferra reports that the push to return African migrants back home to facilitate socio-economic and political development was an uphill task that plans to involve the brains without their physical relocation began to gain momentum. According to Teferra, NEPAD, AU and IOM formed MIDA to tap into the African diaspora virtually, and several African countries opened up African diaspora coordinating offices to facilitate this. He reinforces the value of the diaspora and states that remittances alone have become the highest source of foreign direct investment and have surpassed bilateral and multilateral sources. He states that for this move to be successful, various factors like mobilizing the diaspora, home country governments' commitment, investment options back home, perception of home communities and their willingness to work with the diaspora have to be considered. Consequently, Teferra states that some African governments are getting engaged in involving their diaspora in development of their respective home countries. Even then, he states that other African governments that have been repressive and responsible for their nationals fleeing the country in the first place are doubling down on their grip on mobility of their nationals and functionality of institutions back home. *See more works by Teferra in entry no. 40 and no. 42.*

42. Teferra, Damtew. "Unleashing the Forces of the Diaspora: Capitalizing On Brain Drain in the Era of Information and Communication Technologies." In *Diasporas Scientifiques—Scientific Diasporas*, edited by Barré et al. Paris: IRD Editions, 2003.

https://www.researchgate.net/publication/228965707_Unleashing_the_Forces_of_the_Diaspora_Capitalizing_on_Brain_Drain_in_the_Era_of_Information_and_Communication_Technologies

Teferra states that the decision to migrate or stay abroad is a complex blend of social, cultural, economic, political and physiological factors. He states due to failure to bring expats back home, and with physical distance being less of a factor due to advancement of communication technology in Africa, more emphasis ought to be put on tapping the diaspora's intellectual from their respective physical locations. He argues that this can be used to involve them actively in the development of their home countries. He states that national, regional and international human capital mobility affects most African countries. He gives examples of Lesotho, Swaziland and Zambia that lost its highly skilled lecturers (HSL) to South Africa and Zimbabwe while Ethiopia, Kenya and Nigeria lost its HSL to South Africa and Botswana. Teferra states that not much attention has been given to regional migration even though regional immigrants better understand the socio-cultural, economic and political environments, its teaching and research and look into regional issues with a regional perspective that results in better outcomes. For international migration, Teferra emphasizes on the importance of tapping and maximizing the diaspora because they have exposure in financial, educational, and international avenues available to them within the international community that enhances economic and financial capital, scholastic capital, visibility capital, political capital that can be beneficial back home. Teferra concludes that its success is dependent on a cooperative government and professionals back home. *See more works by Teferra in entry no. 40 and no. 41.*

43. Veney, Cassandra R. "The Ties That Bind: The Historic African Diaspora and Africa." *African Issues* 30, no. 1 (2002): 3-8. <https://doi.org/10.2307/1167082>

Veney states that the historic African diaspora in the US is a result of the European slave trade that resulted in millions of people being taken from Africa. She states this lot is often forgotten as research centers on the contemporary African diaspora. Additionally, she reports that discussions center on Africans' influence on African American community and not the influence of African Americans on Africa. She asserts that the historic African Americans maintained linkages with Africa despite the sociocultural breakages and can be beneficial in solving the current African brain drain. Veney examines the contribution of various linkages: a) during slavery the Black community were not allowed education in the south until the emancipation, where they attended historically Black colleges and universities (HBCU) before affirmative action allowed them into white educational institutions. Veney reports that educational linkages were established between lecturers in HBCU and Africa where the lecturers went to Africa to perform research, and prominent African leaders and physicians were sponsored for education in HBCU. Veney notes that HBCU still admits several African students in this continued collaboration that contributes to addressing the African brain drain, whether the students remain in the US or return home. b) Veney reports that TransAfrica formed in 1977 is an African American initiative in the political linkage that was formed to advocate for Africa, and whose

activities included advocating for abolition of apartheid in South Africa, colonialism in Zimbabwe and Namibia, and for the world to recognize the genocide in Rwanda, among others. c) Veney reports that many African American and African immigrant professionals were engaged in economic linkages that contribute to brain gain in Africa. d) Veney observes that cultural linkages have not always been positive with the initial American Americans feeling superior to Africans as they traveled to Africa to ‘civilize’ Africans. This notwithstanding, she concludes that these linkages are ties that bind African Americans and African diaspora to Africa, and if they’re willing to engage seriously in Africa, the result will be a brain gain to Africa.

44. Wadhwa, Vivek. “A Reverse Brain Drain” *Issues in Science and Technology* 25, no. 3 (2009): 45-52. <https://issues.org/wadhwa-2/>

Wadhwa states that immigrants to US with science and technology skills are more and more returning to their home countries. He observes that with immigrants’ home countries scaling up on development of high-technology industries, they are returning home because they can work in such institutions in addition to other benefits like closeness to their families, cultural appeal and quality of life. The author reckons that highly skilled immigrant workers have been in limbo in the US stuck in the same position at work with little to no chance of moving upwards. Wadhwa explains that this, combined with the rising xenophobia in the US is causing immigrants to return home. He explains that the process of getting or changing a visa if an immigrant arrived on a student or temporary work visa is tedious. He explains that the backlog with US department of immigration is large, which leads to many immigrants waiting in limbo for the approval of permanent resident visas. Wadhwa explains that these frustrations from waiting have also led to some immigrants returning home or moving to neighboring countries like Canada. Wadhwa’s study focused more on Chinese and Indian immigrants, but this trend can be reported true of African immigrants as well.

45. Zeleza, Paul Tiyambe. "Contemporary African Migrations in a Global Context." *African Issues* 30, no. 1 (2002): 9-14. <https://doi.org/10.2307/1167083>

Zeleza reports the rate of global migration has increased in the last decades from 75 million in 1965 to 120 million in 1990, an average annual rate of 2.4%. He states that the African brain drain can be viewed as a curse if dismissed and ignored or a blessing if embraced and used. Zeleza reports that the general composition and direction of migration changed over the years. He reports that migration to Europe was dominant from Asia and the Caribbean islands until the 1960s and 1970s when African immigrants started increasing, with migration patterns following former colonialists. He explains that Anglophone commonwealth countries migrated to England, Francophone countries to France as these were the predominant colonizers. Additionally, Zeleza states that Belgium had migrants from the Democratic Republic of Congo while Portugal had immigrants from Angola, Cape Verde, Guinea-Bissau and Mozambique. According to Zeleza, it was not until 1970s and 1980s that African migrants started flocking to European countries that they did not have colonial ties with, Germany and Netherlands being the most popular. Zeleza notes that before the 20th century migration to North America, especially the US was through slavery. Following the abolition of slave trade very few Africans migrated to North America and

by 1990, African migrants constituted only 1.9% of foreign-born immigrants. Zeleza argues that the level of African migrants to the US seem to be correlated, and the largest numbers of African migrants have tended to come from countries with “a large population, a pro-Western capitalist outlook, speakers of English rather than other European language, unstable economic conditions, a long history of well-established higher education and colonial legacy that had not been too culturally dominant”¹⁴; countries like Nigeria, Egypt, South Africa, Ghana, Morocco and Kenya. Zeleza reports that the number of African migrants entering America has increased as more families migrate to join family members who have acquired citizenship. In Canada, Zeleza states that migration is more for skilled workers than family members.

2011 – 2020

46. Agbiboa, Daniel Egiegba. “Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances.” *Third World Quarterly* 33, no. 9 (2012): 1669-1683.

[DOI: 10.1080/01436597.2012.720847](https://doi.org/10.1080/01436597.2012.720847)

Agbiboa states that the decision to migrate is made up of push factors from the sending countries: low wages, poor working conditions, economic and political instability; as well as pull factors from the receiving countries: higher wage differentials, political stability and family support from earlier migrants. He explains that this decision is not always on the individual emigrant but sometimes it is a collective decision from families giving an example of Senegal where societies are known to collectively raise funds for their brightest to emigrate. This is because emigrants send back remittances to help those left behind. According to Agbiboa, OECD countries like Australia, Canada, UK and the US have had shortages of skilled labor and have offered special visas to skilled labor in developing countries (LDCs) to fill these gaps. He states that there has been an outcry of the brain drain loss to LDCs after investing in this skilled labor. However, he opines that in recent years more attention is being paid to benefits of emigration, and emphasis is being placed on brain gain or ‘beneficial brain drain’. Agbiboa reports that in 2000 one out of every eight Africans with a university degree lived in the developed country (DCs), an effect of brain drain. He reckons that African countries are severely deprived of doctors, for example: half of Ghana’s doctors live outside the country, seriously affecting medical assistance in Ghana. He refers to a quip by the UN Health Commission that the city of Manchester holds more Malawian doctors than the number in HIV stricken Malawi! According to Agbiboa, South Africa is seriously deprived of doctors due to brain drain while its doctors and nurses make up 10% of medical staff in Canada to the extent that South Africa asked Canada to stop recruiting its health professionals. He argues that even though DCs ‘poach’ skilled labor from LDCs, they [DCs] still spend additional funds in advanced training to bring the labor up to date in some cases, or pay for scholarships in other cases. He states that the advanced trained professionals either go back home better equipped to contribute to their home

¹⁴ I.B. Logan, "The Reverse Transfer of Technology from Sub-Saharan Africa to the United States," *Journal of Modern African Studies* (25, no. 4, 1987), 603.

<https://doi.org/10.1017/S0022278X00010119>

countries, or stay on in the developed world and send remittances home, thereby reducing poverty. Either way, the original sending country benefits from further training at the cost of the receiving countries. Agbiboa notes that this part of the equation is often lost on the argument of brain drain only benefiting receiving countries.

47. Amde, Woldekidan Kifle, David Sanders, Baltazar Chilundo, Etienne Rugigana, Damen Haile Mariam and Uta Lehmann. "Exploring Multiple Job Holding Practices of Academics in Public Health Training Institutions from Three Sub-Saharan Africa Countries: Drivers, Impact, and Regulation." *Global Health Action* 11, no. 1 (2018).
<https://doi.org/10.1080/16549716.2018.1491119>

Amde et al. explore the prevalence of senior academic staff holding multiple jobs in public health institutions in Ethiopia, Mozambique and Rwanda. They report that the driving forces are low salaries, poor working conditions and poor incentive structures, among others, a situation that is made worse by faculty migrating to developed countries that have better pay and working conditions.

48. Anokye, Sampson Ahmad, John Arikpo Okri, and Emmanuel A. Adie. "Retention and Brain Drain of Academic Staff in Higher Institution in Nigeria: A Case Study of University of Calabar." *Global Journal of Educational Research* 18, no. 2 (2019): 99-105.
[DOI: 10.4314/gjedr.v18i2.6](https://doi.org/10.4314/gjedr.v18i2.6)

Anokye, Okri and Adie discuss the importance of academic staff within tertiary institutions, and note that Africa experienced an exodus of lecturers to the UK due to its inability to provide necessary conditions for work. They report that in 2002, 119,000 migrants entered the UK, and the numbers have grown bigger since because of Africa's inability to fulfil its promises to academic staff despite lecturers going on strike to press home their case. Anokye et al. opine that for retention of academic staff to take place, reversal of push factors for the brain drain like poor quality governance, political regression and equitable economic development needs to take place. For academics, this includes policies that invest in research and teaching infrastructure, expanding and promoting academic freedom. Anokye et al. report that brain drain of academic staff affects students left behind negatively, which affects the quality of graduates these universities produce and local development by extension. They state that human, social and institutional capacity is central to development with education playing a key role in the process, which President Rawlings saw and brought back some staff that had emigrated by offering them better conditions of service to improve the economy.

49. Babu, Suresh Chandra, Rupak Manvatkar and Shashidhara Kolavalli. "Strengthening Capacity for Agribusiness Development and Management in Sub-Saharan Africa." *Africa Journal of Management* 2, no.1 (2016): 1-30, [DOI: 10.1080/23322373.2015.1112714](https://doi.org/10.1080/23322373.2015.1112714)

Babu, Manvatkar and Kolavalli report that agribusiness in the Sub-Saharan African region is expected to grow, particularly in food processing and distribution which will enhance food security. To achieve this, they state that agribusiness training and education is necessary to ensure success. Consequently, Babu et al. argue that there are many cases of successful agribusiness education and training programs in Sub-Saharan Africa, including The University of

KwaZulu Natal's African Center for Crop Improvement (ACCI). ACCI works with national research institutions from Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Africa, Tanzania, Uganda, and Zambia; to train young researchers, linking them with experienced plant breeders as they work to obtain a PhD. Mozambique, Tanzania and Uganda also have similar research centers. According to Babu, et al., locally designed and context-specific programs like these have the potential to reduce brain drain from African countries as well as addressing current research challenges.

50. Banya, K. and J. Zajda. "Globalization, the Brain Drain, and Poverty Reduction in Sub-Saharan Africa." In *Second International Handbook on Globalisation, Education and Policy Research*, edited by J. Zajda, 263–285. Springer: Dordrecht, 2015. https://doi.org/10.1007/978-94-017-9493-0_16

Banya and Zajda report that globalization has caused a lot of things to change in the world, especially in education and brain drain with some 214 million people (3% of the world's population) living as migrants outside their country of origin. They state that highly skilled migrants are living and working out of their countries of origin and some of them are overqualified for the work they are doing because it still pays more than what they would get at home, while others do not use their skills. On the plus side, Banya and Zajda state that remittances sent home by migrants to developing countries are three times the size of development assistance, and can have profound implications for development and human welfare. Banya and Zajda argue that internal and external remittances have an equalizing effect on high-migration areas; international remittances reduce rural poverty more than internal remittances and the larger the share of households with migrants the more favorable the effect of increased remittances. Conversely, according to Banya and Zajda, brain drain de-skills emigrants in destination countries while reducing skilled labor in countries of origin and is parallel to capital flight from sending countries.

51. Bassioni, G., G. Adzaho and D. Niyukuri. "Entice Africa's Scientists to Stay." *Nature* 535, 231 (2016). <https://doi.org/10.1038/535231c>

Bassioni, Adzaho and Niyukuri report that the Dakar Declaration from the 2016 global meeting of the Next Einstein Forum held in Dakar, Senegal focused on advancing African science, technology, engineering and mathematics (STEM) with special reference to women and young scientists. Bassioni et al. opine that this research should focus on utilization of scientific research for economic and social development and related sectors in the economy. They argue that the focus should be on developing returning young scientists from studies and work abroad to reintegrate them back into society. They opine that this will reduce brain drain in the long run.

52. Boeri, Tito, Herbert Brucker, Frederic Docquier, and Hillel Rapoport. *Brain Drain and Brain Gain: The Global Competition to Attract High-Skilled Migrants*. London: Oxford University Press, 2012.

Boeri et al. report that at least 20 of Africa's ruling presidents were educated in the West, having emigrated as skilled labor and then pursued further education. They reckon that brain drain can have positive effects on the sending country's governance which further leads to diplomatic

gains for both sending and receiving countries and helps developing countries advance in migration remittance, good governance and development. Noteworthy, Boeri et al. state that highly skilled migrants usually bring their families along, and return migration becomes highly unlikely. However, these migrants are very sensitive to social acceptance, and will most likely return-migrate or move on to another location if their receiving country/area is xenophobic. Boeri et al. discuss effects of migration on sending countries and argue that in the long run, sending countries may not be badly affected because of remittances, return migration, network effects favoring international transactions and technology diffusion; all which work to compensate the sending country for human capital loss. *See entry no. 11 and no. 12 for works by Docquier.*

53. Bredtmann, Julia, Fernanda Martínez Flores and Sebastian Otten. “Remittances and the Brain Drain: Evidence from Microdata for Sub-Saharan Africa.” *The Journal of Development Studies* 55, no. 7 (2019): 1455-1476. [DOI: 10.1080/00220388.2018.1443208](https://doi.org/10.1080/00220388.2018.1443208)

Bredtmann, Flores and Otten state that brain drain in Sub-Saharan Africa is a major problem as it depletes their already small number of highly skilled manpower to nations that have a high number of human capital. They report that Sub-Saharan Africa particularly, has among the lowest levels of high-skilled manpower but emigration rate has steadily increased since the 1990s from 11% in 1995 to 16% in 2010, representing today the highest emigration rate among high skilled manpower from developing countries. According to Bredtmann et al., this poses policy challenges from the sending countries as loss of one of their scarcest resources, high skilled manpower, affects economic growth and poverty reduction. They reckon that migration of doctors and nurses, especially, is harmful because the number of physicians per inhabitant in Sub-Saharan African is low, leading to severe shortage in health workers and decline in population health.

54. Campbell, Catherine. “Power, Politics and Rehabilitation in Sub-Saharan Africa: From the Personal to the Political.” *Disability and Rehabilitation* 33, no. 17-18 (2011): 1699-1701. [DOI: 10.3109/09638288.2010.541546](https://doi.org/10.3109/09638288.2010.541546)

According to Campbell, Sub-Saharan Africa is beset with many challenges, one of which is brain drain of skilled medical health and rehabilitation personnel to wealthier countries. Despite these challenges, Campbell opines that there is increasing evidence that it is possible to innovate rehabilitation, especially community-based rehabilitation. This involves combining partnerships between those with more skills and those with local skills and knowledge in order to get things done. Campbell argues that challenges facing Sub-Saharan Africa can be reversed by all parties concerned, Western donors and local authorities working towards a common good.

55. Dako-Gyeke, M. "Exploring the Migration Intentions of Ghanaian Youth: A Qualitative Study." *Int. Migration & Integration* 17, (2016): 723–744. <https://doi.org/10.1007/s12134-015-0435-z>

Dako-Gyeke explores the intentions of university students to leave Ghana upon graduation. He conducts a study of 34 students between 22–34 years old and reports that reasons generally fall within the economic difficulties in the poorer countries compared to the richer ones, where income differences and population imbalances is a big problem. Generally, Dako-Gyeke states that migration trends happen due to economic, political and social trends and differences between the developing and developed countries that has seen an aging industrialized world and a youthful developing world; which leads to the developed world harnessing labor from the developing world. Dako-Gyeke explains that while the developed world is looking to replace its aging workforce, youth in developing worlds are willing to substitute misery without hope to misery with hope by migrating to work in developed countries. This drives the brain drain experienced in Sub-Saharan Africa. The author reckons that the Government should seriously consider these reasons for out-migration and create an environment that would eventually stem the flow and cause youth to want to stay in Ghana.

56. Federici, Silvia. *African Roots of US University Struggles; From the Occupy Movement to the Anti-Student-Debt Campaign: Part 1*. EIPCP.net, October 2012. <https://transversal.at/transversal/0112/federici/en>

Federici discusses the strategy employed by the World Bank to dissuade African governments from funding university education. The World Bank argued that university education was being funded while other important programs like paying back government debt and funding elementary education was falling by the wayside. According to Federici, The World Bank (WB) got African governments to defund university education and have students fund their own education as this would supposedly produce better-educated graduates while having better allocation of funds to other programs. The WB argued that only motivated students would self-sponsor and complete tertiary education but this only opened the education market up to international agencies and NGO's sponsoring selective programs. Consequently, Federici states that this led to brain drain of skilled labor from Africa to the US at cheaper salaries while the developed worlds exported their teachers to Africa at more expensive salaries, which ended up burdening the African governments anyway.

57. Gaillard, Jacques, Anne-Marie Gaillard, and Venni Venkata Krishna. "Return from Migration and Circulation of Highly Educated People: The Never-Ending Brain Drain." *Science, Technology and Society* 20, no. 3 (2015): 269-278. <https://doi.org/10.1177/0971721815597168>

Gaillard, Gaillard and Krishna report that brain drain can be turned into brain gain. They argue that return policies can be put in place to re-attract emigrants to return to their home country with new found skills acquired in the receiving country. Additionally, programs can be put in place linking together educated expatriates via internet, known as the Science and Technology (S&T) diaspora option. They argue that S&T diaspora options can link nationals and diaspora communities and take advantage of diaspora skills and expertise without their physical return.

Gaillard et al. state that return of professionals is still preferred as the S&T diaspora collaboration is less attractive because professionals back home prefer linkages with bigger scientific and technological giants in developed countries, rather than their diaspora. Gaillard et al. state that brain circulation is another way of addressing brain gain. This allows countries, whether sending or receiving to gain from a common pool of skilled professionals wherever they are located since professionals have become global citizens. They reckon that other mitigation factors include high-quality education systems and advanced infrastructures and technology in sending countries to re-attract or retain skilled professionals.

58. Gibson, John and David McKenzie. "Eight Questions about Brain Drain." *Journal of Economic Perspectives* 25, no. 3 (2011): 107-28. [DOI: 10.1257/jep.25.3.107](https://doi.org/10.1257/jep.25.3.107)

Gibson and McKenzie opine that even though there has been a lot of discussion about brain drain of health professionals from developing countries, there has been more emigration of teachers, scientists and professors to developed countries. Also, they report that not all educated emigrants that migrate end up in skilled occupations, a phenomenon they call "brain waste". Gibson and McKenzie argue that even though many educated persons emigrate from developing countries at an estimated rate of 13% for Sub-Saharan Africa, more skilled labor remains at home. Notwithstanding this relatively low number, they give reasons that make emigration more likely. The authors opine that most emigrants leave the country expecting to earn more and to send funds back to remaining family members at home to empower them. Countries with less population have a higher rate of brain drain, as is the case with countries with religious fractionalization and political instability. There is also higher brain drain rates for females than males because a lot of low income countries have education rates for women lagging behind those of men. Generally, Gibson and McKenzie conclude that emigration is driven by career decisions like more research opportunities and working with leaders in the profession, as well as lifestyle and family reasons more than additional income they could earn abroad.

59. Gueye, Abdoulaye. "From Brain Drain to Brain Gain: Countries Engaging Their Diasporas." *The Role of the Diaspora in African Higher Education and Research*. Carnegie Corporation of New York (February 10, 2020). https://production-carnegie.s3.amazonaws.com/filer_public/e9/77/e9770ee4-f63c-423e-8876-edbe7a8f5c01/african_diaspora_forum_2019_gueye.pdf

Gueye reports that the scientific community is a global one that knows no boundaries, country, culture or race. He traces brain drain back to the period following World War II when Britain and Germany lost its brains to America, and brings it forward to the present where developing countries are currently losing brains to the West. He traces the link between brain drain and the underperformance of a country and highlights strategies that earlier countries like Britain, Germany, India, China and Colombia used to lure back their brains; and he discusses how these strategies can be used by African countries to address the modern day brain drain phenomenon. He states that due to the lack of economic resources and stable academic institutions, African countries send their best and brightest to study in the West, although the courses studied are often not relevant to home countries which makes African graduates stay on in the host country and those that returned home had degrees they could not apply leading not only to brain drain but

brain waste, as well. He recommends that African countries should sponsor students to study courses relevant to their economies. He points out that the World Bank currently funds academic institutions, which is a short term solution and African countries often lack the capacity to continue with these projects. He recommends that these countries should come up with strategies to fund these projects once the World Bank period lapses. Gueye recommends the pooling together of countries in the same region to set up academic institutions in neighboring countries that can be accessed within the region. He reports that this brings together the region's best, even though political and economic instability may threaten this approach. He recommends that African countries implement a Federated Academy of Arts and Sciences, funded by all African states and supported by the diaspora's brains, organize a 'National Day' in each country to recognize local academic accomplishments to curtail the assumption that recognition is only found when one lives and works abroad; and establish a post-doctoral scheme funded by AU member states to improve academic staff performance and create fellowships open to diaspora and local PhD holders alike.

60. Hagander, Lars E., Christopher D. Hughes, Katherine Nash, Karan Ganjawalla, Allison Linden, Yolanda Martins, Kathleen M. Casey and John G. Meara. "Surgeon Migration Between Developing Countries and the United States: Train, Retain, and Gain from Brain Drain". *World J Surg* 37 (2013): 14–23. <https://doi.org/10.1007/s00268-012-1795-6>

Hagander et al. report that the extent of health workforce migration from low- and middle-income countries (LMIC) has increased significantly in recent decades with migration happening locally, nationally, continentally and globally. They report that migration to more sophisticated locations and developed countries takes place in search of better livelihoods. According to Hogander et al., the top three professional reasons for surgeons migrating to the United States were: better surgical facilities, surgical training and surgical career prospects. Consequently, Hagander et al. opine that public health infrastructure reform in source countries would encourage return migration and retain newly trained surgeons, thereby preventing emigration of newly trained surgeons. Additionally, they reckon that establishment of comprehensive surgical residency programs, adequate clinical and academic surgical career paths and secure provision of surgical resources and supplies would slow down or reverse the brain drain trends. Hagander et al. opine that these measures would encourage retention of surgeons born and trained in LMIC.

61. Hutch, Avril, Abebe Bekele, Eric O'Flynn, Andrew Ndonga, Sean Tierney, Jane Fualal, Christopher Samkange, and Krikor Erzingatsian. "The Brain Drain Myth: Retention of Specialist Surgical Graduates in East, Central and Southern Africa, 1974–2013." *World Journal of Surgery* 41, no. 12 (2017): 3046-3053. [DOI 10.1007/s00268-017-4307-x](https://doi.org/10.1007/s00268-017-4307-x)

Hutch et al. report that surgical shortage in the world is directly proportional to deaths that are avoidable through surgery. In East, Central and Southern Africa region (ECSA), Hutch et al. state that there is an insufficient number of practicing surgeons at 1,690, which translates to 0.53 surgeons per 100,000 people. The World Health Assembly resolution in 2015 stated that availability of surgery and anesthesia when needed is fundamental to universal health care, and

practitioners and policy makers scaled up efforts to increase the number of surgeons and anesthetists in their regions. Hutch et al. reckon that attraction, retention and enabling surgeons to deliver in low- and middle-income countries (LMIC) are challenging and sought to examine the retention of surgeons in Africa, as a particular subset of health professionals. At the time of their data collection, there were 24 university teaching hospitals offering 3–4-year Master of Medicine (MMed) in surgery in ECSA, in addition to the College of Surgeons in East, Central and Southern Africa (COSECSA) offering surgical residency programs. According to Hutch et al., a retrospective cohort study was done: out of 1,038 surgical specialist graduates from Burundi, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe between 1974 and 2013; 85.1% were retained within the country of qualification, 88.3% within the ten countries and 93.4% within Africa. Only 6.6% have migrated outside Africa. This study indicates that increased investment in surgical training is necessary for retaining surgeons in the ECSA region after qualification. Hutch et al. urge governments and donors to invest in training as a way of slowing down migration, and to enable pursuit of Sustainable Development Goals (SDGs) and development of National Surgical Plans in LMIC.

62. Kalipeni, E., L. L. Semu and M. A. Mbilizi. “The Brain Drain of Health Care Professionals from Sub-Saharan Africa: A Geographic Perspective.” *Progress in Development Studies* 12, no. 2–3 (2012):153–171. <https://doi.org/10.1177/146499341101200305>

Kalipeni, Semu and Mbilizi state that the global free movement of labor and competition for human resources has enabled developed countries (DCs) to fill their shortages of health workers with doctors and nurses from less developed countries (LDCs). Kalipeni et al. explain that this pilfering of highly trained African health care and other personnel has been termed “brain drain”. Consequently, this has impeded Africa’s push towards achieving its Millennium Development Goals (MDG), especially in health care. Kalipeni et al. opine that brain drain is a costly affair for Africa because the highly trained personnel take with them to the DCs much needed labor and Africa cannot compete to retain its own health professionals. Furthermore, the International Development Research Center (IRDC) estimate that Africa spends about US\$500 million to train personnel that are recruited by, or move to the developed world while these DCs save billions of dollars in training costs of their nationals. Conversely, Kalipeni et al. report that emigrants send home remittances that improve the livelihoods of their families back home and alleviates unemployment, which encourages others to emigrate. They opine that migration is a very complex process that affects both sending and receiving countries.

63. Kaplan, David and Thomas Höppli. “The South African Brain Drain: An Empirical Assessment.” *Development Southern Africa* 34, no. 5 (2017): 497-514. [DOI: 10.1080/0376835X.2017.1351870](https://doi.org/10.1080/0376835X.2017.1351870)

According to Kaplan and Höppli, emigration statistics from South Africa between 1987 and 1997 were 2.8 times more than Statistics South Africa (StatsSA) reported, a phenomenon not unique to South Africa. They suggest that this leads to inaccurate estimation of the impact of brain drain on the sending countries. Kaplan and Höppli report that the main recipients of South African emigrants were Australia, Canada, New Zealand, the UK and the US. This was because immigration laws in these receiving countries favored highly skilled labor that South Africa and

other sending countries could produce. Consequently, Kaplan and Höppli report that highly skilled labor from developing countries emigrated. They state that in later years, the United Arab Emirates (UAE) attracted both skilled and unskilled labor, and an estimated 40,000-100,000 South Africans currently reside in the UAE. The authors opine that these trends have caused brain drain in South Africa and other Sub-Saharan African countries to the five receiving countries, the UAE and twenty-five other OECD countries. Kaplan and Höppli conclude that one way of addressing the brain drain is to attract skilled labor from other developing countries to fill the gaps left by emigrants.

64. Kasper, J. and F. Bajunirwe. "Brain Drain in Sub-Saharan Africa: Contributing Factors, Potential Remedies and the Role of Academic Medical Centres." *Archives of Disease in Childhood* 97 (2012): 973-979. [doi:10.1136/archdischild-2012-301900](https://doi.org/10.1136/archdischild-2012-301900)

Kasper and Bajunirwe report that Sub-Saharan Africa carries 25% of the global disease burden but only 3% of the global healthcare workers. Contributing factors include migration, among others. Kasper and Bajunirwe report that remedies to this challenge include, among others, national and international medical organizations' code of conduct, intercountry collaborations, international donors' input in training and partnering with local institutions in equipping and retaining healthcare workers and having less migration. Eventually, Kasper and Bajunirwe opine that there will be sufficient healthcare workers to provide optimal care.

65. Kimari, Wangui. "A Continental Policy Forum and Workshop on the Role of the Academic Diaspora in the Revitalisation of Africa's Higher Education." *The Role of the Diaspora in African Higher Education and Research*. Carnegie Corporation of New York. Carnegie Final Report (October 9, 2019).

https://production-carnegie.s3.amazonaws.com/filer_public/ba/9c/ba9ccc3c-8700-4510-9df9-fb71831ef93e/african_diaspora_forum_2019_setrana.pdf

Kimari reports that there is a growing collaboration between institutions and states, as well as international organizations like The Carnegie, IOM and UNDP to involve sustainable knowledge diaspora with their countries of origin using case studies from Ethiopia, Kenya and Rwanda. She reports that within the Agenda 2063, the Continental Educational Strategy for Africa 2016-2025 (CESA 16-25) targets a qualitative system of education within Africa. She examines diaspora-led higher education and factors that should be raised to support this initiative administratively and financially. In all three countries, Kimari reports that while the need for 'knowledge transfer' with the academic diaspora exists, there are no clear policies to facilitate this transfer which hinders its impact of engagement between locals at home and the academic diaspora.

Additionally, Kimari reports that financing these ventures is hampered by fear of corruption at home like in Kenya's case, which makes the diaspora shy to invest; lack of policy framework and fragmentation within the academic diaspora in the case of Ethiopia and Rwanda. Kimari reports that the lack of a comprehensive database of the academic diaspora and available tertiary level opportunities in home countries is a gap in policy-financing equation. She argues that much attention has been given to the academic diaspora in North America and Europe (The global-North) while less attention given to Kenyan/Ethiopian/Rwanda born academics in Asia, the Caribbean and the Pacific island countries. However, Kimari concludes that harnessing the

academic diaspora wherever they have been transplanted will allow for more robust efforts in achieving CESA 16-25 goals.

66. Kollar, Eszter, and Alena Buyx. "Ethics and Policy of Medical Brain Drain: A Review." *Swiss Medical Weekly* 143 (2013): 1-8. <https://doi.org/10.4414/smw.2013.13845>

Kollar and Buyx report that health worker migration, commonly known as “medical brain-drain” is part of a larger problem known as global health workforce crisis. Kollar and Buyx argue that medical brain drain to developed countries creates barriers to implementing health interventions that improve maternal and child health; and address HIV/AIDS, malaria and tuberculosis. Also, they opine that health-worker shortages affect operations of health facilities and overburdens existing staff, which increases error rates in diagnosis and interventions. They reckon that these shortages may undermine a country’s capacity to absorb external funding and implement international programs of health assistance. Additionally, according to Kollar and Buyx, the perceived returns in remittances are not sufficient because remittances are too small, sometimes far between and inadequate to address the permanent loss of skilled workforce. Additionally, they state that medical migration is unethical due to global injustice of poor versus rich nations, where the poor nations become worse with resulting critical healthcare shortages and violation of human rights of those remaining behind without adequate basic healthcare.

67. Loewenson, R. and C. Thompson, editors. “Health Personnel in Southern Africa: Confronting Maldistribution and Brain Drain.” Equinet Discussion Paper Number 4. Regional Network for Equity in Health in Southern Africa (EQUINET) [2003]. <https://equinetafrica.org/sites/default/files/uploads/documents/DIS3hres.pdf>

Loewenson and Thompson discuss the movement of health professionals. They report that South Africa and Botswana, the richest countries in the region see an influx of health professionals from other SADC countries and rest of Africa. External movement is seen when health professionals in this region move to developed worlds: the US, UK, Canada and Australia. This causes a poor distribution of health workers in the SADC region. According to the editors, even though there are arguments for reverse migration of skilled labor, they contend that once emigrants settle in a new location there are various ‘stick’ and ‘stay’ factors that prevent them from returning home. ‘Stick’ factors include high levels of morale among health workers; rewards and incentives, for example in form of salaries, status and research funds in universities; strong social and cultural ties and costs of relocation and reclassification if one relocates. ‘Stay’ factors include risk of disruption of children’s education and reluctance to disrupt new lifestyle patterns. According to Loewenson and Thompson, International Organization of Migration (IOM) reports that some emigrants do not return home simply because they are unaware of job opportunities back home. Finally, the editors conclude that emigrants tend to move to locations where family already are, which sees emigration of families and communities in large numbers. Additionally, Loewenson and Thompson state that brain drain affects populations remaining at home because there is loss of institutional memory, maldistribution of health professionals; which results in increase in mortality and morbidity. The cost of training health professionals in SADC region is significant, and they reckon that developing countries should consider movement of health professionals to richer countries as a form of trade that will be beneficial to

them. The authors argue that even though sending countries receive remittances from emigrants that contributes to the general well-being of family left behind, it is not sufficient to fill the costs of losing the brains in the first place. Also, they reckon that arguments for beneficial return migration are inaccurate because in the case of doctors, they never return home and therefore return migration is not an option-maybe for nurses, but not doctors. They conclude that brain drain still remains a greater cost considering the benefits these brains would have contributed to the economy and health system had they remained at home.

68. Makina, Daniel. "Determinants of Return Migration Intentions: Evidence from Zimbabwean Migrants Living in South Africa." *Development Southern Africa* 29, no. 3, 2012: 365-378.
[DOI: 10.1080/0376835X.2012.706034](https://doi.org/10.1080/0376835X.2012.706034)

Makina reports that following the controversial land program and disputed presidential elections in Zimbabwe, Zimbabweans migrated in large numbers to neighboring South Africa, Australia, Canada, New Zealand, The UK, and The US. Makina did a study on 4,654 Zimbabweans living in South Africa on their potential intention to return to Zimbabwe if political and socio-economic factors stabilized. He found that 66% of those surveyed indicated that they would return. He compared his study to one done by Bloch¹⁵ (2005) on Zimbabweans in South Africa and The UK; and Chetsanga and Muchenje¹⁶ (2005) on Zimbabweans worldwide and found the same results. Makina's study found that male migrants in SA were more likely to return than female, married migrants with families more than single migrants, those with professional skills than low level skilled emigrants, those earning lower than US\$500 equivalent were more likely to return than emigrants earning more, indicating that monetary remuneration was a bigger determinant than profession. He noted that migrants who left after 2000 due to the socio-political unrest were more likely to return than those who left earlier. These factors show that the chances of attracting skills back are high. Makina concludes that for a country experiencing a high level of brain drain, establishing socio-economic and political stability is highly likely to attract skilled labor back.

69. Manik, Sadhana. "South African Migrant Teachers' Decision-Making: Levels of Influence and 'Relative Deprivation'." *Journal of Southern African Studies* 40, no. 1 (2014): 151-165.
[DOI: 10.1080/03057070.2014.889360](https://doi.org/10.1080/03057070.2014.889360)

Manik reports that many teachers were recruited from South Africa, mostly by the UK between 2001 and 2008 causing a shortage of teachers in rural areas, especially in South Africa. He reports that teachers emigrated to build up financial savings in the UK that they were not able to do back home; and used the savings to acquire property in the UK and back home. Additionally, the author states that emigrants acquired British citizenship after working in the UK for five years, giving them flexibility to travel back and forth between home and the UK while making the best of both worlds. According to Manik, some teachers pursued further training and gained

¹⁵ A. Bloch, 2005, *The Development Potential of Zimbabweans in the Diaspora* (IOM (International Organisation for Migration) Migration Research Series No. 17).

¹⁶ C J Chetsanga and T. Muchenje, *An Analysis of the Cause and Effect of the Brain Drain in Zimbabwe* (Harare: Scientific and Industrial Research and Development Centre, 2003).

more qualifications in the UK and this became an incentive for others to emigrate. However, he reports that there were emigrants who returned back home sooner than anticipated because of negative experiences in the UK that included experiencing racism mainly from students; lack of respect from their students in the classrooms; being treated as second class citizens; and being required to take a Qualified Teacher Status in the UK to make them eligible to stay and work in the UK. Manic states that migrant teachers that had families returned because they felt alone and separated from them and would return in the spur of the moment, especially female teachers that returned to get reunited with their families.

70. Manu, Thaddeus. “Exploring a Regional Pharmaceutical Innovation Network as a Possible Solution to the Market Failure in the Innovation of Essential Medicines for Tropical Diseases in Sub-Saharan Africa.” *African Journal of Science, Technology, Innovation and Development* 6, no. 2 (2014): 111-125. [DOI: 10.1080/20421338.2014.931742](https://doi.org/10.1080/20421338.2014.931742)

Manu states that there is consistent logic that Africa must begin to find solutions to its own problems. To achieve this, Manu suggests that Sub-Saharan African (SSA) countries need to work together to form regional integration policies and investments instead of focusing on individual weak national policies. He reckons that due to lack of adequate funding, individual SSA countries cannot achieve investment needs for high investment developments. Therefore, Manu suggests that collaboration within the SSA region be used to identify and fund local R&D projects collectively for the greater good of the region: for example, pharmaceutical innovations needed for the health sector. He opines that this will ensure medical solutions are available at affordable rates for the region. Additionally, it will help to fund local scientific institutions while creating skilled jobs and developing local ownership that will mitigate problems associated with brain drain among African scientists.

71. Mills et al. “The Financial Cost of Doctors Emigrating From Sub-Saharan Africa: Human Capital Analysis”. *BMJ* (2011). <https://doi.org/10.1136/bmj.d7031>

From a study conducted in nine Sub-Saharan African countries: Ethiopia, Kenya, Malawi, Nigeria, South Africa, Tanzania, Uganda, Zambia and Zimbabwe; Mills et al. discuss the effects of brain drain in this region. They report that according to the World Health Organization (2010), these countries are experiencing a critical shortage of medical professionals due to their emigration to developed countries to pursue better career opportunities. They state that most developed countries are training less doctors than is required, and are depending on immigrant doctors to breach the shortfall. According to Mills et al., Sub-Saharan Africa has a prevalence of 5% or more of HIV/AIDS and related problems, and their governments are spending in excess of US\$2 billion on training doctors who then migrate to Australia, Canada, the UK and the US. Mills et al. argue that developing countries are effectively paying to train doctors who then support the health system in developed countries and argue that developed countries should invest in replacing the lost skilled labor in developing countries by providing financial assistance to source countries affected by the migration.

72. Mlambo, Victor H. and Toyin Cotties Adetiba. "Brain Drain and South Africa's Socioeconomic Development: The Waves and Its Effects." *Journal of Public Affairs* (2019) [DOI:10.1002/pa.1942](https://doi.org/10.1002/pa.1942)

Mlambo and Adetiba report that a country's sociopolitical and economic development depends on the reliability of human resources. In South Africa, this has been affected by brain drain to the West. They estimate that South Africa produces approximately 1,500 engineering graduates annually and only half of them work as engineers. They reckon this is due to the poor state of the economy and inevitably, engineers migrate to get better jobs that match their qualifications at a rate of 300 annually, and this will eventually erode the stock of engineers in the country. The authors state that this trend is seen in the health and education sectors as well and South Africa is losing teachers and health professionals especially from the rural areas. To mitigate this, they observe that South Africa has benefited from immigration of skilled labor from other African countries that has reduced the urgency of addressing the drain of South Africans to the West. However, they argue that it is not a lasting solution because African immigrants can decide to leave the country at any time for a number of reasons, and this will put South Africa at a disadvantage with an acute shortage of skilled labor. They argue that South Africa has other nationalities like Europeans and Asians, but when xenophobic attacks occur it is always directed towards African nationals. According to Mlambo and Adetiba, South Africa suffers from Afrophobia rather than xenophobia. Consequently, they report that fewer African nationals are showing interest in working in South Africa and less and less African nationals are coming to South Africa as students because of the unpredictability of xenophobic attacks. They maintain that this all leaves South Africa with skilled labor shortage. *See entry nos. 73-74 for Mlambo and Adetiba and no. 75 for more of Mlambo's work.*

73. Mlambo, Victor H. and Toyin Cotties Adetiba. "Effects of Brain Drain on the South African Health Sector: Analysis of the Dynamics of Its Push Factors." *Journal of Economics and Behavioral Studies* 9, no. 4 (2017): 62-72. [DOI:10.22610/jebbs.v9i4\(j\).1822](https://doi.org/10.22610/jebbs.v9i4(j).1822)

Mlambo and Adetiba state that globalization has led to skills mobility that has seen brain drain of health professionals from South Africa. This notwithstanding, they assert that the push factors leading to the brain drain from South Africa: poor pay, poor working conditions, insecurity, infrastructure challenges, political uncertainty are structural and socio-economic, and generated internally. York (2011) opines that Canada has saved roughly \$400 million in training health professionals by poaching African doctors¹⁷. Mlambo and Adetiba discuss effects of health workers' emigration: experienced health professionals command a higher salary, hence the government gains from collecting higher taxes and when they migrate tax collection declines significantly which affects the government's overall budget. Additionally, they opine that service delivery in the health sector is impacted because of reduced medical personnel and burnout from

¹⁷ G. York, "Brain drain of African doctors has saved Canada \$400 million." (*Global Mail*, 2011). <https://www.theglobeandmail.com/news/world/brain-drain-of-african-doctors-has-saved-canada-400-million/article555168/> [Accessed June 16, 2023.] Quoted in 2017 by Mlambo and Adetiba, "Effects of Brain Drain," 67.

those left at home as they get overburdened with workload. Consequently, they report that global competitiveness of South Africa is affected because of resulting reduced output from the health sector because, according to Mlambo and Adetiba, work morale is low as remaining health professionals are overburdened while their salaries remain low. They warn that unless the outflow slows down, the government will have a collapsed health sector eventually. Additionally, the authors state that the country is affected economically because a highly educated country improves its economic status and if skilled labor emigrates, the government loses, not only their investments in training but also the economic returns from the lost skills. *See entry no. 75 has more of Mlambo's work, see no. 72 and no. 74 for Mlambo and Adetiba.*

74. Mlambo, Victor H. and Toyin C. Adetiba. "The Brain Drain of Teachers in South Africa: Identifying the Dynamics of Its Push Factors." *e-Bangi: Journal of Social Sciences and Humanities* 17, no. 1 (2020): 152-164. <http://journalarticle.ukm.my/14591/1/37504-118404-1-SM.pdf>

Mlambo and Adetiba research the push factors that cause brain drain to the developed countries and report that leading factors in South Africa include: a) better salaries offered abroad, especially in the UK. Teachers are likely to earn three or four times what they would earn back home. b) Pouching: developed countries, specifically the UK, actively recruited well trained and experienced teachers in math and science from South Africa. c) Better working conditions was a big incentive for teachers because classes in most South African schools were overcrowded and filled with undisciplined students. d) Other factors, especially social and economic issues encouraged teachers to emigrate. These included rise of crime in South Africa; government corruption interfering with school governance; better future for their children and load shedding¹⁸. *See entry no. 75 for more of Mlambo's work, while other works by Mlambo and Adetiba are in nos. 72-73.*

75. Mlambo, Victor H., Harris D Madukhu and Mandla A. Mubecua. "Between a Rock and a Hard Place: Fight Brain Drain or Enjoy Remittances: The Case of Sub-Saharan Africa." *AFFRIKA: Journal of Politics, Economics and Society* 9, no. 1 (June 2019): 293-313. [DOI: 10.31920/2075-6534/2019/9n1a14](https://doi.org/10.31920/2075-6534/2019/9n1a14)

Mlambo, Madukhu and Mubecua state that brain drain has left Sub-Saharan Africa (SSA) with a dent in skilled labor that has made it difficult to pursue sustainable economic growth and development in the region. Sadly, they reckon SSA governments have not made any intentional actions to slow down or reverse brain drain in the region because of prevalent corruption, nepotism and elitism. They observe that the rate at which students and professionals are embracing migration is alarming because this is creating a shortage of already scarce human capital. They mention countries with the highest contribution of students studying in the US as Cameroon, Ethiopia, Ghana, Kenya, Nigeria and South Africa. Mlambo et al. state that SSA has

¹⁸ *Load shedding* is the balance of demand and supply of electricity where suppliers introduce power rationing to reduce the load on the generator, accessed on August 25, 2022, <https://www.endeavourenergy.com.au/outages/planned-unplanned-outages/what-is-load-shedding>

become a seed bed for developed countries because it's educating skilled labor but it does not reap the benefits of their skill. This notwithstanding, they point out that political partners have welcomed remittances sent from the diaspora as it has added to their government budgets through taxes, improved accessibility to finances and livelihoods of families left behind. They note that this has spurred skilled labor as more opt for higher education due to possibilities of emigration. Additionally, they report that remittances make a good percentage of foreign injection to the economy, estimated in 2021 at \$40 billion from SSA diaspora, excluding "informal remittances". That said, Mlambo et al. argue that remittances cannot make up for the skills lost that could have been used to spur socio-economic development in SSA. They explain that in as much as individuals have the right to cross borders, it leaves the country with less skilled and less experienced labor, and this hinders the socio-economic development of SSA countries which leads to more migration to seek better living conditions. Mlambo et al. conclude that the social cost of migration far outweighs the benefits to the SSA region. *See entry nos. 72-74 for other works by Mlambo.*

76. Muhirwa, Jean-Marie. "Funneling Talents Back to the Source: Can Distance Education Help to Mitigate the Fallouts of Brain Drain in Sub-Saharan Africa?" *Diversities* 14, no. 1 (2012). <https://unesdoc.unesco.org/ark:/48223/pf0000218151>

Muhirwa explains that a lot of debate has taken place over the loss of skilled labor to developed countries. However, she states that one side of the debate that's been overlooked is that only a small fraction of skilled labor that emigrate to the developing countries manage to find work that is commensurate with their skills and experience. Apart from health professionals and information technologists, many Sub-Saharan African (SSA) immigrants are underemployed, underpaid, or forced to reorient their careers towards semi-skilled or unskilled jobs, a phenomenon referred to as "brain wash". She states that this impact on such individual migrants is never considered. Conversely, Muhirwa reports that according to economists, SSA benefits from the remittances made by emigrants to assist family back home. She notes that this pushes downwards by 1% those living under a dollar a day and explains that remittances are significant in some countries, like 24% of Lesotho's GDP. Lesotho is the highest recipient of remittances in the region. Muhirwa reiterates that remittances are not sufficient to make a difference in the economy, especially in SSA because these are sent directly to small households, and proceeds are used for basic needs.

77. Negative Population Growth. *African immigration hurts the U.S...and Africa*. An NPG Forum Paper by Edwin S. Rubenstein. December 2018. Alexandria, VA: NPG, 2018. <https://npg.org/wp-content/uploads/2019/01/AfricanImmigrationHurtsTheUS-FP2018.pdf>

This report states that poverty in Sub-Saharan Africa is the main reason for immigration and for more than 35 years, the share of Sub-Saharan African immigrants with a bachelor's degree has surpassed that of Native Americans. More surprisingly, the NPG report states that they are more likely to have a bachelor's degree than immigrants from other developed countries because an African with a bachelor's degree might not do too well at home, and will be compelled to migrate to the US to get a good job and better life. Conversely, the report states that a similar graduate in a developed country will do just well at home, and is less likely to migrate to the US.

During the period 2010 to 2017, NPG reports that the largest share of Sub-Saharan African immigrants immigrated to other Sub-Saharan African countries at 5 million while Europe received 1 million and the US 400,000.

78. Nyarko, Yaw. "The Returns to the Brain Drain and Brain Circulation in Sub-Saharan Africa: Some Computations Using Data from Ghana." In *African Successes, Volume II: Human Capital*, pp. 305-345. Chicago: University of Chicago Press, 2014.

Nyarko states that there has been a lot of discussions about Sub-Saharan African (SSA) countries spending funds on education knowing that a high percentage of them would leave the country for developed countries (brain-drain). However, she argues that this, in fact, was the right decision in post-independence to mid-first decade of the 21st century-for SSA because of the current returns from remittances. Additionally, she argues that effects on the individuals themselves are usually forgotten. For example, she explains that one does not cease to be Ghanaian when they leave the country, and it's not only the welfare of those still living in Ghana that counts. Nyarko argues that any improved livelihood to a Ghanaian at home or abroad is positive and should be included in policy-making. She contends that these individuals emigrate to seek better lives, a positive net-effect of migration. She opines that the probability of being "drained out" results in more Ghanaians seeking tertiary-education, an overall positive effect that discussions should focus on: how to expand tertiary-educated within the local population and have a surplus knowing that a good number might drain-out. She gives an example of an African village setting in Ghana, where the brain drain happens almost always after primary school because pupils move away from the village for high school and tertiary education; and almost always never return whether they leave Ghana or stay in Ghana's cities. These students send back remittances that educate other village members and improve the livelihood of the village[r]s. Sometimes, they return and improve the village's overall wellbeing. Either way, Nyarko insists that benefits of the drain are felt on the ground; and this makes village chiefs happy. Likewise, she argues that those who drain out should be encouraged to pay back the cost of their education so that it is used to train more tertiary-educated labor. *See entry no. 16 for another work by Nyarko.*

79. Okeke, Edward N. "Brain Drain: Do Economic Conditions "Push" Doctors Out of Developing Countries?" *Social Science & Medicine* 98, (2013): 169-178.
<https://doi.org/10.1016/j.socscimed.2013.09.010>

Okeke reports that the number of physicians that emigrated to the US from two African countries, Ghana and Nigeria, rose by 1000% between 1981 and 2002. He notes that more than a quarter SSA countries had about 50% of their stock of doctors living in developed countries. According to Okeke, many explanations have been given why developing countries have high rates of skilled labor migration, e.g. poor working conditions, conflict and political instability. He states that in 2005, there were approximately 190 million international migrations, more than double the number in 1960. According to Okeke, economic conditions influence both skilled and un-skilled labor migration.

80. Olumide, Henrie Benedict and Wilfred Isioma Ukpere. "Brain Drain and African Development: Any Possible Gain from the Drain?" *African Journal of Business Management* 6,

no. 7 (2012): 2421-2428. [DOI: 10.5897/AJBM11.2385](https://doi.org/10.5897/AJBM11.2385) ; see also: https://digitalknowledge.cput.ac.za/bitstream/11189/2136/3/Benedict_SOH_Ukpere_WI_Bus_2013.pdf

Olumide and Ukpere refer to developed countries as ‘brain-drainer countries’ because of their ongoing aggression in recruiting skilled labor from African countries to fill their skill shortages. They state that workers are more likely to migrate to their former colonizers because of similar language and culture left behind post-colonization. For example: emigrants from Cape Verde, Angola and Guinea Bissau are found in Portugal; Algeria, Morocco, Tunisia are in France and most English-speaking SSA emigrants settle in English-speaking countries like Australia, Canada, New Zealand, the UK and US. Unfavorable conditions in Africa has pushed people away: political instability, coups, armed conflict, low wages, poor work conditions, human rights abuses etc. Some push factors that Olumide and Ukpere highlight are that African students leave their countries for further education and training with the intention of coming back to develop their home country, but possibilities of employment and better pay cause many of them to settle in the receiving country. They state that in the most part, African countries do not reap the benefit because the ‘brains’ fail to return home after the ‘train’. According to Olumide and Ukpere, many developed countries lacking skilled labor have relaxed their immigration rules, making it easier for skilled holidaymakers to extend their visa or take up apprenticeship in rural areas, with a long-term expectation of returning as skilled immigrants, which make it easier for emigrants to live and work in developed countries and encouraging brain drain from African countries. Furthermore, luring Africans is made easier with the power of the foreign (hard) currencies used by brain-drainer countries that Africans use to better their lives and lives of family left behind at home. However, the drain leaves Africa in a state of low education quality and lack of skilled labor to ensure sustainable economic development on the continent. They conclude that African government leaders have to work hard to reverse this trend and retain ‘brains’.

81. Oyeniyi, Bukola Adeyemi. “From Brain-Drain to Brain-Gain: Interrogating Migration, Deskilling and Return Migration in Contemporary Nigeria.” In *Global Africans: Race, Ethnicity and Shifting Identities* 1st ed., edited by T. Falola and C. Hoyer, 113-129. Routledge, 2017. <https://doi.org/10.4324/9781315543802>

Oyeniyi reports that between 1986 and 1993, then Nigerian President introduced National Economic Empowerment and Development Strategy (NEEDS) and IMF’s Structural Adjustment Programs (SAP) that were supposed to spur development through government-private sector partnerships. He explains that NEEDS focused on strategy and policy directions while SAP focused on programs and projects. He notes that these worked in the short term, but in the long term they caused the flight of Nigeria’s skilled manpower that included doctors and nurses, university professors and highly trained technical personnel that migrated to more favorable geographical locations, mostly in the West and Gulf states. Oyeniyi states that SAP was discontinued after two years but it led to many years of depletion of Nigeria’s highly qualified professional and technical personnel. Oyeniyi explores how non-migration policies like SAP and NEEDS influenced migration, migration decisions and migrants’ experiences abroad and back

home. He notes that introduction of SAP and NEEDS caused underfunding of some industries, freezing of employment and introduction of user fees in some sectors because concentration was on particular SAP projects and programs. Consequently, people were forced to look outward for better opportunities, one of which was international migration. Oyeniya states that Loss of human capital was mostly felt in Nigeria and Kenya. He states that migration sometimes led to deskilling of labor because some degrees were not recognized in destination countries and migrants ended up in jobs below their qualifications. Also, he reports that discrimination due to race, color, religion and minority status led to deskilling of migrants. He explains that dependents, especially women, get deskilled because they hold H4 visas that precludes them from work irrespective of their professional skills. Deskilling leads to alienation, skills erosion, discrimination that leads to immigrants wanting to improve economic situation of their origin to facilitate reverse migration. NEEDS has eventually bore fruit, spurred economic growth that has led to the return of Nigerian emigrants that fled during SAP period back home to reinvest.

82. Ranga, Dick. "The Role of Politics in the Migration of Zimbabwean Teachers to South Africa." *Development Southern Africa* 32, no. 2 (2015): 258-273.

[DOI: 10.1080/0376835X.2014.984376](https://doi.org/10.1080/0376835X.2014.984376)

Ranga reports that in the mid to late 2000s, teachers in Zimbabwe were being politically persecuted on assumption of being in the opposition party, Movement for Democratic Change (MDC). Ranga states that this led to a large number of teachers fleeing Zimbabwe for safety reasons, with approximately 45,000 teachers (almost half of the primary and secondary teacher population) fleeing the country. He states that most fled to South Africa and neighboring Southern African countries because of reasonable immigration requirements while a few fled to the UK. Ranga reports that generally, African governments have failed to pay teachers well, and this has led to their emigration for better pay. Ranga argues that instead of making working conditions and pay better for teachers, in Zimbabwe, teachers were labelled opposition fighters for going on strike for better pay and conditions of work and, thereby, persecuted and victimized. He notes that majority of teachers that emigrated to South Africa around 2008 were from schools that were affected by political violence and repression and this category of emigrants are unwilling to return home for safety reasons.

83. Sager, Alex. "Reframing the Brain Drain." *Critical Review of International Social and Political Philosophy* 17, no. 5 (2014): 560-579. [DOI: 10.1080/13698230.2014.919061](https://doi.org/10.1080/13698230.2014.919061)

Sager argues that instead of focusing on the permissibility of migration restrictions, we should ask what institutions must be put in place so that migration does not have harmful effects on people but interact with other policies to make people better off. He reckons that if it turns out that migration almost always has beneficial effects on developing countries like remittances, return migration, trade, investment and technological transfer; or by causing remaining populations at home to acquire new skills then brain drain becomes a topic of less interest. Also, Sager opines that in cases of health workers emigration, the quality of medical care is dependent on more than skilled labor; and unless these other factors like infrastructure and economy are addressed, the medical personnel might remain at home but move to other sectors to generate income; thereby resulting in 'brain waste'. He concludes that emigration should not be

addressed in isolation, but socio-economic factors against which it occurs should be addressed by sending countries and financial assistance given by receiving countries so that migration does not harm those left behind.

84. Yasser Moullan. "Can Foreign Health Assistance Reduce the Medical Brain Drain?" *The Journal of Development Studies* 49, no. 10 (2013): 1436-1452.

[DOI: 10.1080/00220388.2013.794261](https://doi.org/10.1080/00220388.2013.794261)

In light of the rising health physicians' emigration to the developed worlds, Yasser reports that from his study, it appears that foreign aid to developing countries might slow down the rate of physicians' emigration to some degree through technical assistance rather than financial assistance. However, Yasser notes that foreign aid is not enough to slow down emigration of physicians; policy changes and implementation is necessary to sufficiently address the phenomenon. He argues that foreign aid in the long run has an effect when infrastructure like hospitals and clinics have been built, then the rate of physicians' emigration might slow down as more opt to stay home. This will be done by financing of medical tools, equipment, and expertise for health care which can be viewed as appropriate tools to stem medical brain drain.

85. Yeboah, Ian E. A. "Capitalism and Sub-Saharan African Human Capital." *African Identities* 16, no. 1 (2018): 67-86. [DOI: 10.1080/14725843.2017.1332983](https://doi.org/10.1080/14725843.2017.1332983)

Yeboah comments on the recent increase of SSA skilled labor emigrants to the global core (developed countries) and notes that global core capitalism has used human capital from SSA to push its agenda. He reckons this has made SSA countries concentrate more on receiving remittances than developing their own economies. Yeboah traces the advent of SSA human capital transfer to the global core to slavery in the 1600s. He argues that initially, Europe forcefully removed SSA labor to Europe as slaves. Then came colonialism where Europe colonized SSA states and used local labor to pilfer raw materials, send it to manufacture in Europe and bring it back to SSA as a premium good for a premium price. Yeboah reckons globalization is the third face where though now voluntary, SSA skilled labor is being actively recruited to fill labor gaps in the global core. Yeboah argues that historical poverty, dependence and underdevelopment under colonialism persist today and have made living difficult for many residents. He opines that to make matters worse, since independence SSA governments have worsened living conditions through inefficiency, corruption, unstable governments and political conflicts. Efforts to combat these conditions have come with austerity conditionalities of restricting government assistance in education, healthcare, employment and other services; making life even more difficult for residents who then opt to voluntarily leave SSA regions for better living conditions in the global core.

After 2020

86. Bennell, Paul. "The Skills Balancing Act: A Review of the 2019 World Bank Report on Skills Development in Sub-Saharan Africa." *Compare: A Journal of Comparative and International Education* (2021). [DOI: 10.1080/03057925.2021.1956878](https://doi.org/10.1080/03057925.2021.1956878)

Bennell reports that a World Bank report on the status of skills development in Sub-Saharan Africa (SSA) found that SSA has a severe skills crisis with a workforce that is “the least skilled in the world”. The report states that for SSA to turnaround its skills’ status, there must be a “smart skills development strategy”. To this end, Bennell states that the World Bank is the largest external funder for technical and vocational education training (TVET) in SSA in coordination with the respective national governments that are the primary funders. He states that the World Bank has advised policy changes that make TVET more demand-driven and inclusive in a bid to improve skills development in the region. There is a new focus on capacity building and institutional training in key sectors like agriculture, water, electricity, roads, small and medium enterprises, tourism and mining. This will eventually slow down brain drain trends as more SSA nationals stay home due to opportunities being available at home, and the desire to build locally, a trend that is currently gaining traction in SSA. *See entry no. 2 for another work by Bennell.*

87. Motiwala, Fatema and Obidimma Ezezika. “Barriers to Scaling Health Technologies in Sub-Saharan Africa: Lessons from Ethiopia, Nigeria, and Rwanda.” *African Journal of Science, Technology, Innovation and Development* (2021): 1788-1797.
<https://doi.org/10.1080/20421338.2021.1985203>

From a study done by Motiwala and Ezezika, they discuss the barriers existing in Sub-Saharan Africa that prevent scaling of health technologies, one of which is brain drain of health professionals in the region. Motiwala and Ezezika found that health professionals in the region, specifically Ethiopia, Nigeria and Rwanda believe that they are professionals who deserve higher pay than what they are currently getting; which leads to brain drain to developed countries for better pay. Additionally, unavailability of health equipment makes some health professionals feel incapable of doing their work well because it leads to death of patients that could have been saved. Consequently, they migrate to countries with better health care equipment where they feel their services make a difference as they have the necessary equipment; and they are valued enough to be equipped. Largely, the desire to seek advanced education abroad, political instability and insecurity in home countries cause professional health care workers to emigrate.

88. Mudzonga, Maureen. “Migration Management and Health Service Delivery: A Case of the Zimbabwe Public Health Sector.” *Development Southern Africa* 39, no. 6 (2022): 801-812.
[DOI: 10.1080/0376835X.2021.1890547](https://doi.org/10.1080/0376835X.2021.1890547)

To mitigate the prevalent medical brain drain in Zimbabwe, Mudzonga reports that the government introduced some steps: a robust strategic turnaround in the economy that will avail access to mortgage; reduction in hiring expatriates while raising payment to nationals; “brain export” where excess skilled labor is exported at a fee or receiving countries paying to train the labor that is exported; improving work conditions in health centers etc. Mudzonga reckons that a strong national policy on emigration to address retention of skilled labor should be implemented. She states that encouraging and monitoring remittances to recipients with less or no taxes/charges will encourage the diaspora to send funds back home. This will encourage development, increase income and reduce poverty that Mudzonga explains will eventually retain skilled labor in the country. Furthermore, she states that diaspora engagement through return

technology, reverse emigration, investing in the health sector back home etc. will improve the health sector and help to retain future health professionals. Other temporary measures that the author highlights include (a) donor fund allowance which was introduced to augment health professionals' pay against harsh economic conditions but failed to retain health professionals because it was considered too little against the rising economic challenges Zimbabwe was experiencing. (b) Bonding of health professionals who benefited from government funding for a duration equivalent to the study period did not deter emigration but delayed it until the bonding period lapsed. (c) Locums made permissible, where professionals were allowed to take up part time jobs to augment their income didn't work very well because the pay wasn't considered sufficient. (d) Reviews and performance management introduced by the government were not a deterrent as it was not done frequently enough and did not match the rising cost of living.

89. Ndjobo, Patrick Marie Nga and Noémia Certo Simões. "Institutions and Brain Drain: The Role of Business Start-Up Regulations." *African Journal of Science, Technology, Innovation and Development* 13, no. 7 (2021): 807-815. [DOI: 10.1080/20421338.2020.1815333](https://doi.org/10.1080/20421338.2020.1815333)

Ndjobo and Simões re-examine the relationship between African nations and the migration phenomenon. They argue that a migrant's decision is not through an isolated individual act but is based on additional factors like family and a complete set of aspects forged in their country of origin. They reckon that these might include income and local markets like labor, insurance and credit. They discuss the influence of effects of colonialism in Sub-Saharan African countries that shape the country's economic environment in post-colonialism which, therefore, shapes institutional rules that shape economic, political and social life. They argue that developing countries invest in producing human capital from start of school through completion, but have a difficult time retaining the human capital through high levels of unemployment and downgrading of educated people. They conclude that these factors lead to brain drain to OECD countries as populations search for better living standards. They propose the establishment of private institutions for the initiative of qualified young Africans to reduce the brain drain and keep skilled labor at home.