BRAIN DRAIN FROM AFRICAN STATES: EMPIRICAL EVIDENCE AND POLICY IMPLICATIONS

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"As yet, the African governments have had little concern about brain drain. Within the next decade, however, the high-level manpower situation is likely to undergo substantial change. First, the supply of new talents is likely to increase more rapidly than expected because of the very high rate of growth of enrollments in the universities. Secondly, the net annual increase in effective demand for high level African manpower will decrease sharply as soon as most of the expatriates are replaced. As a consequence of increasing supply and decreasing effective demand, African countries may find themselves with a staggering surplus of educated people seeking high-level and high-paying jobs, which will not be available." --Frederick H. Harbison

Introduction

Harbison's prognosis of the brain-drain situation in Africa dates from the late 1960s, but it is as relevant today as it was then, a few years after most the sub-Saharan African countries attained nationhood. Prior to independence, these nations were almost wholly dependent upon the more advanced countries for highly skilled personnel. Countries like Nigeria, Ghana, Sierra Leone, and Gambia looked to Britain for strategic high-level personnel, while Benin, Togo, Ivory Coast, Guinea, and Senegal received skilled expatriates from France, due mainly to the colonial linkage and the economic hegemony of the metropolitan countries. During this period, it was commonplace to find expatriates holding high positions in these African states. In effect, the African countries were the beneficiaries of brain drain from the metropolis.

After the attainment of political independence in the early 1960s, the brain-drain situation in African states vis-à-vis the metropolitan countries started to change. One of the earliest gains
of independence was the replacement, albeit gradual, of expatriates with Africans in most countries. In some cases, expatriates were retained longer for the purpose of training their African subordinates for the position they were to vacate. During this initial period of independence, outmigration of high-level African personnel was negligible since high-level positions in public-sector employment were relatively abundant and were attractive in terms of salaries and other perquisites. (Although this was largely limited to a few assignments of high-level African personnel by international agencies seeking to fill quota positions.) While the situation continued to encourage dependence on critical skills supplied by expatriates through technical assistance programmes of the developed nations, it also generated a growing urge for self-sufficiency in the supply of high-level personnel to match the aspirations and stated goals of political independence in the new African nations.

Well after independence, one of the reverberating slogans of development remained the clamour for educational expansion, especially for positions in the basic and applied sciences, engineering, and medicine that hitherto were provided by expatriates. This meant an upsurge in enrollment, both in local higher educational institutions and in foreign institutions, through national scholarship awards and foreign aid to students. Table 1 compares the commitment to educational expansion in sub-Saharan Africa to other regions since the 1960s, when most of the African countries attained political independence. In almost all regions, irrespective of economic performance levels, education budgets experienced substantial increase.

As more and more Africans went overseas to study, as either private or sponsored students, the issue of brain drain began to arise. Many students either remained abroad or returned there after a brief stay in the home country. The phenomenon first attracted attention in the developed nations that were usually the destination of these newly skilled migrants, as well as among the international community.

Discussion in the remainder of this paper will focus on the nature and causes of brain drain from African countries (especially from the sub-Saharan region), types and cases of brain drain, the interpretation of empirical findings, and, finally, remedial measures for addressing the brain drain, taking into account the international dimension.

The nature and causes of the problem

Brain drain is a special kind of migration that occurs when a country that faces shortages in the supply of certain critical skills experiences the emigration of persons with such skills. Brain drain can therefore have serious adverse effects on the productive capacity of the affected country. Usually, the direction of brain drain is from Third World countries to the developed countries of Western Europe and North America. Brain drain from the sub-Saharan African states is often towards the developed nations where such skills are normally acquired through formal education and training. The recipient countries are mainly the United States, Canada, the United Kingdom, and France. While countries like the United Kingdom and France had colonial linkages with various sub-Saharan African states, newer metropolitan powers like the United States may have not only strong economic ties but also
linguistic compatibility with these nations. Hence factors such as colonial heritage and cultural and economic ties underlie brain drain from sub-Saharan African countries to the developed countries.

These factors operate at two levels to encourage brain drain from African states. First of all, they encourage governments to send their citizens to the recipient countries to acquire education and professional expertise that fit into their colonial institutions. Secondly, the yearning to study abroad among African students is facilitated by their familiarity with the language and culture of the metropolitan countries.

The factors that perpetuate international brain drain are akin to those that account for internal brain drain and rural-urban migration. Thus international migration of high-level personnel is usually explained by the general push-pull model of labour mobility, wherein the individual's decision to migrate or relocate from one place to another is influenced by a combination of economic, social and political factors, greater emphasis being placed on the economic factors of employment and higher material benefits. In this framework, push factors combine with pull factors in a complex manner to determine who migrates.

In sub-Saharan Africa, the desire to acquire a high-level skill or education that is either not available or inadequately developed in one's own country may encourage an individual to seek such opportunities in the developed countries, after which he or she subsequently decides to stay abroad -- not simply because jobs are not available at home but for a wide variety of other reasons: in the home country, underemployment, overproduction of acquired skills, limited job opportunities and mobility, poor working facilities, comparatively low salaries and wages, and discriminatory evaluation of foreign qualifications and diplomas, limited promotional opportunities, and ethnicity of origin; and, in the developed countries, higher salaries, greater job mobility, opportunities for professional growth, large research grants, fewer bureaucratic frustrations and higher living standards. Table 2 summarizes these factors of international migration of skilled personnel in the sub-Saharan region. Where the negative factors outweigh the positive factors of remaining or returning to one's home country, skilled personnel are likely to stay abroad or emigrate.

Generally, it can be surmised that it is the comparison (real or imagined) of the highly trained individual's situation in his or her country of origin with the prevailing situation of persons of similar qualifications and skills in the country of destination that enters into the decision. The interplay of these factors will be highlighted through an examination of the types and cases of brain drain.

**Diagrams 1**

**Types and cases**

The phenomenon of brain drain from sub-Saharan Africa since the 1960s can be broken
down into the following typology:

1. The foreign-trained student completing studies with a relevant post awaiting him or her in the home country is persuaded that he or she could have neither personal nor professional satisfaction given the limited opportunities in the field of expertise and thus does not return home.

2. As a result of frustration at home and job contacts abroad, returnees work in the home country for a while before migrating back to the developed countries where they obtained their diplomas.

3. High-level personnel refuse to stay in the home country but leave for another developing country, either after completing studies or shortly after arrival in the home country.

According to a study conducted among Nigerians in the United States in the 1960s, non-returning foreign-trained students were distributed throughout eight different fields of specialization: agriculture, education, engineering, humanities, medical and paramedical fields, natural sciences, physical sciences and mathematics, and social sciences. Respondents were selected mainly from cities along the eastern coast of the United States. They were mainly young male graduates under 35 years of age. Most claimed to be the oldest siblings in their families of orientation and had accepted responsibilities of financial assistance to their parents as well as to younger brothers and sisters living in the home country. Slightly less than a half were either married or engaged to be married.

When the occupational status of these non-returning graduates was examined, it was found that about 5 percent were working as university professors; 32.6 percent and 20.9 percent respectively worked for private research organizations or industries, as engineers, architects, technicians, physicians, chemists, or medical researchers; and 41.8 percent were classified as self-employed, in such varied fields as medicine, architecture, radio, accounting, public administration, commerce, and social work.

Information was sought about current and previous income. All without exception had experienced sharp increases in income as a result of higher wages in the United States. As for financial support for their education in the United States, only 10.2 percent stated that their education had been financed by their parents. Scholarships from home or abroad, but largely from U.S. sources, had supported 48.6 percent. 28.6 percent had financed their own education, and 14.4 percent did not indicate their source of sponsorship.

The same study also examined returnees -- individuals who had received at least one professional or academic credential, returned home, and later migrated to United States to seek employment or study or both. All of these were males and were generally much older than the non-returning graduates (50 percent were 35 years of age and above). A higher proportion (60.1 percent) also reported that they were either fully or partially responsible for the upkeep of aged parents and/or younger siblings. These returnees did not differ much from non-returnees in occupational profile or in the sharp increase in income due to higher
wages in United States. As for the source of educational financing, none had been sponsored by parents. 16.7 percent financed their own education, 5.6 percent had received scholarships, and 5.6 percent did not disclose how they had been supported. The remaining 72.1 percent received financial aid from U.S. sources.

The other type of brain drain that has come to our attention as a result of its magnitude and recurring incidence in recent times is the migration of African skilled personnel to other developing countries. This involves persons who, after receiving high-level education both overseas and at home, either refuse to stay in their home country or stay there only for a while before emigrating in search of better employment opportunities and higher remuneration. Among this group, one can identify West African nationals who have migrated to countries such as Nigeria and Ivory Coast since the mid-1970s. These became the destinations of high-level personnel from neighbouring countries as a result of short-lived prosperity arising from increased prices for oil and agricultural produce respectively. Nationals of Gambia, Sierra Leone, Liberia, and Ghana with high-level skills in engineering, applied science, medicine, and so on migrated to Nigeria from home countries where the impact of inflation and recession had been considerable. In Ivory Coast, highly trained migrants came from places like Upper Volta (Burkina Faso), Senegal, Mali, and Guinea.

The tragedy of development in the latter countries since the late 1960s is reflected in low per capita income, limited access to basic social services, malnutrition, high mortality rates, and so on. The economic crisis that which plagues them is especially evident in agriculture, their major source of development funds. Not only has export crop production stagnated, but the increase in agricultural production registered during the 1960s was wiped out by a decline of similar proportions in the 1970s. This deterioration in agriculture and other resources led to a widespread balance of payment crisis in the 1970s and thus generated much inflation and a significant downward trend in real earnings. For high-level personnel of these countries who had hitherto enjoyed most of the fruits of earlier high rates of economic growth and development, there was ample opportunity to exploit their professional expertise and contacts in more prosperous countries like Nigeria and Ivory Coast.

Ironically, Nigeria's oil-driven prosperity came to a halt towards the beginning of the 1980s. As a result, the country began to experience an outflow of highly skilled personnel to Saudi Arabia and similar oil-rich Arab countries. About half of Nigeria's orthopaedic doctors and 23 of its airline pilots emigrated in the 1980s to Saudi Arabia, Guinea, Libya, and the United States. Furthermore, over 250 doctors in general practice were lost through this process of human resource export.

**Interpretation of the phenomenon**

As noted earlier, the literature on brain drain in recent years has documented several reasons for permanent or temporary emigration of high-level personnel from their home countries to foreign lands, presumably to those developed countries where they received their high level
skills and education. Their acquired educational status at time of interview, based on reported previous and current educational and occupational attainment, is usually the inertia that encourages either unwillingness to return to country of origin or a desire to remain in the country where education was obtained. This circumstance would have been avoidable if the recipients of foreign education and skills had not had a ready market for skills such as engineering, medicine, or the applied sciences in the countries where such skills were acquired. It is also obvious from the previous and current social characteristics of the migrant that higher economic rewards for skills as well as the long period of exposure -- depending on the duration of education -- to social and cultural life in foreign lands predispose him or her to choose between this foreign experience and the expected (in the case of non-returning graduates) or the experienced (in the case of a returnee or an intra-African migrant) difficulties in making necessary adjustments to social and cultural life at home.

After the attainment of high-level skills and education, one of the reasons usually adduced for remaining outside the home country is the inadequacy of opportunities for career advancement. In this context, emigrants often state reasons such as rigidity of government employment systems, power of entrenched civil servants, lack of research funds, professional isolation, prejudice based on ethnic or tribal affiliation, discrimination against foreign diplomas and certificates, and competition with nationals of foreign countries where skills and training were acquired. For non-returning graduates, these reasons can be very subjective and are often based on experiences prior to departure from the home country. This could be attributed to the fact that most did not continue to maintain regular contact with the home country regarding changes that might have taken place in employment opportunities and conditions for their professions and education at home during their sojourn abroad. Most tended to rely upon informal communication channels such as friends and relatives -- not only on family matters but also on political and social issues and job opportunities.

As for returnees to developed and developing countries, the fact that they remained in their home countries to work for a period of time before migrating indicates that they either were unable to cope with the social, cultural, and/or work situation in their home countries or preferred to remain outside having weighed the comparative advantages of staying abroad.

One of the characteristics of both non-returnees and returnees is the source of educational finance while studying abroad. The Nigerian case study shows that a higher proportion financed their education mainly from their own resources and through foreign donors. While loyalty to professional opportunities and goals, better remuneration in the country of destination, and difficulties in adjusting to social and cultural conditions at home may exert pressure to remain outside the home country, personal and induced loyalties to one's own country also exert a powerful force towards returning home. It can thus be inferred that the extent to which the nation invests directly in the education and skill acquisition of citizens studying abroad will strongly affect their enthusiasm to return to that country to contribute to its development after the completion of studies.

**Measures for stemming the outflow of high-level personnel**
"It is a paradox of today's world that the underdeveloped nations that have the greatest need
to use engineers, scientists, doctors and other professionals to help them along the road of
economic and social development are not using them effectively and are, in fact, losing many
of their best educated young men to the developed societies." --Frederick H. Harbison

One of the important reasons for this phenomenon, as highlighted by the educational and
occupational characteristics of highly trained emigrants is the integration of African
countries into the international market in professional and scientific skills. One indicator of
this integration is the extent to which a country sends its students to train abroad.

Table 2 shows that the number of students in United Kingdom and United States per 100,000
population from Nigeria, Kenya and Ghana is quantitatively large. As soon as these students
complete their training, they at the same time possess internationally negotiable
qualifications which are usually in high demand in the economically advanced countries, at
least in times of economic boom.

A major policy response to this condition would be educational development in the home
countries of these emigrants. This would necessitate the expansion of training institutions for
students who now must migrate to acquire the same type of training. In this regard, it is
noteworthy that all sub-Saharan African countries have been engaging in rapid educational
expansion since the attainment of political independence. In most cases, this effort has led to
attempts at developing training programmes that are equivalent to those available in
metropolitan countries.

According to a recent survey carried out in West and Central African countries concerning
their high-level personnel supply and training, most countries surveyed have nearly achieved
self-sufficiency in high-level personnel requirements in the liberal arts and humanities, while
less than 60 percent of required high-level personnel were obtained in other critical
disciplines such as finance, physical sciences, human sciences and technology, as of 1986.
While the sources for meeting national requirements in the humanities and liberal arts are
local institutions of higher learning, high-level personnel requirements in the sciences and
technology in all countries except Nigeria, Ghana and Cameroon were still being met
through foreign institutions. This was especially the case for Zaire, the Republic of Congo,
Rwanda, Burundi and the Central African Republic. The foreign sources of acquisition of
these critical skills are usually the metropolitan countries and their allies in Western Europe
and North America. The former Soviet Union joined these countries much later to become
another major foreign source of high-level personnel in the sciences and technology.

In the English-speaking sub-Saharan African countries, until recently, British qualifications
were more important than local qualifications in financial and commercial professions like
accountancy and insurance. In other fields as well, very few local qualifications have been
recognized as fully equivalent to their British counterparts. And, of course, many of the local
qualifications which have not actually achieved international negotiability have been modeled upon British patterns and are aspiring to full negotiability. In some cases, attempts to fundamentally reform elitist personnel training strategies originally implanted by the British have been vehemently opposed, despite growing realization by politicians and planners of the need to eliminate to some extent the highly artificial distinction between foreign and local qualifications.

A related issue is the tying of job descriptions and the content and length of training to the prevailing standards of the international market. The net effect of this requirement is a tendency among aspirants to higher education and professional qualification to seek opportunities for professional advancement and recognition in metropolitan countries where they are also exposed to higher remuneration and better conditions of work.

It is hoped that the regional convention on the recognition of studies, certificates, and diplomas in higher education in Africa will help further the training and retention of high-level personnel in Africa, through encouraging the exchange of teachers, researchers, and students whose integration into the life of their countries will be easier on their return. Although it has been recognized that many sub-Saharan African countries have progressed considerably in their educational expansion programme, personnel remain in short supply in most professional fields.

Let us examine, for example, the situation in medical care presented in Table 3. Irrespective of the level of social and economic development in sub-Saharan Africa, health indicators such as population per physician or medical nurse show very high ratios of inadequacy, which are considerably worse for the rural communities where the majority live.

In addition to the necessity of expanding training institutions in relevant professions, it is imperative for those countries that have not done so to identify and develop such professions to meet local needs rather than to emphasize international comparability, which is a major factor in the emigration of medical manpower from home countries.

Most of the reasons why possessors of high-level skills who could have added to the personnel stock in their home countries prefer to remain abroad have been highlighted. Some if not all of these are amenable to appropriate policies. In the case of non-returning graduates, their educational and occupational opportunities were limited at the time they left home. At the time of completion of their training and education, their familiarity with the changing conditions of employment and the general social situation in their countries may not be sufficient and accurate. One of the fundamental reasons is that they are likely to be in contact with friends and relatives whose knowledge of the employment opportunities for these graduates willing to return may be limited. In this circumstance, the governments of sub-Saharan African countries should evolve and establish relevant institutions to close the communication gap between graduates in foreign lands willing to return and the opportunities that exist for them to gain employment at home. Public and private employers, including multi-national corporations, should be encouraged to disseminate information on
job vacancies to students abroad, while the government should continue to maintain contacts with students in foreign institutions as to the relevance of their course of study to the nation's manpower requirements in the short and long term. It is also essential for each country to collect regular statistics on their nationals studying or working abroad, especially in disciplines critical to the nation's development.

It has already been stated that most emigrants and returnees financed their education from their own resources and from foreign sources in the form of scholarships, assistantships, and fellowships. This is further confirmed by our survey, in which nearly 80 percent of nationals of African countries trained in foreign countries are financed through assistance given by the host countries (see Appendix, Table A-1). Since this type of aid is not likely to be reciprocated by recipient countries that in most cases do not have identical facilities for the training of personnel from the economically advanced countries, it is likely to induce the loyalty of emigrants towards the donor countries, especially if the conditions for employing their acquired skills are more favourable in these countries than in their home countries. A national response to the situation should be a deliberate effort on the part of African countries to financially assist their citizens in acquiring critical skills abroad in order to enlist their commitment to national service.

Another issue pertinent to the stemming of brain drain from Africa is the need to accommodate the career aspirations of emigrants. Most of them, according to the case studies presented, worked for universities, research institutes, and private research organizations in the developed countries. Such institutions exist in the home countries but are yet to be adequately developed. Efforts should be made so that more fields of study and training become available in home-country institutions so that would-be emigrants may attain the self-improvement and fulfillment that they now find in more developed societies. This could be achieved through selective support of research grants and fellowships for those researchers whose field of study and training are on the nation's priority list.

At present, however, we observe that domestic economic policies in the form of structural adjustment programmes have stimulated the urge for highly skilled African nationals to emigrate to destinations where they can earn better income and have better opportunities for professional accomplishment. This is due to the unprecedented depreciation of the national currencies, which has led to a sharp decline in real wages and the standard of living. Since brain drain constitutes a leakage of skills from the economy and often a loss of critical personnel resources with concomitant financial and economic losses, policies should be designed to minimize it.

Other reasons given for staying back after the completion of studies and training, such as socio-cultural maladjustment after arriving in their home countries, may be exaggeration on the part of graduates unwilling to return to country of origin. An appeal to their nationalism is not out of place, since the migrant may often forget that the emergence of a viable strategy for development also depends on leadership, especially in politics and administration. This in itself depends in some degree on the proportion of highly educated people in the population.
Their continued absence from their home countries will continue to deny the nation its quota for development and eventually slow the process of change that is often responsible for the social discontent experienced by them.

Conclusions

Until recently, most sub-Saharan African countries expressed little concern about brain drain. What has been responsible for this phenomenon was their continued dependence on foreign sources for the supply of skilled manpower. Despite post-independence efforts at replacing high-level foreign personnel with local ones, many sub-Saharan African countries appear to have become accustomed to their traditional dependence on "rented" foreign skills in critical areas of development, to such an extent that a feelings of loss or inadequacy of local replacements seem not to attract serious attention.

This inertia in the outlook of these countries is influenced by the internationalist view of brain drain from developing countries. The internationalists have argued that brain drain tends to increase the welfare of the emigrants without reducing the welfare of those left behind. It is assumed that, quantitatively, the number of personnel from developing countries involved in brain drain is proportionally small. Thus the argument in fact tends to justify personnel flows that benefit the rich countries of the world and to ignore the need to correct this imbalance. While the loss may appear marginal from aggregate figures, this is not really the case, as Table 3 shows: The average ratio of doctors to total population in sub-Saharan Africa is scarcely one-tenth the ratio in the United States or the United Kingdom -- major destinations of African anglophone migrants. This is evidence that the contribution to human welfare of a medical doctor, say in Ghana, is greater than in England or the United States. Similar arguments could be developed for other categories of professions involved in international migration.

It is argued further by the internationalists that the developed countries provide the incentive and ideal environment to develop and exploit available skills from whatever source while they pass on the end-products of their investments to all nations which want them as members of one big international community. In this sense it is assumed that the technological community, the intellectual community, and the scientific community are one. This argument neglects the fact that brain drain from developing countries intensifies underdevelopment of their resources since actual and potential emigration of skilled persons means simply that fewer people are capable and willing to work on the development of appropriate technologies and research problems for these countries.

Given the international dimension of brain drain from sub-Saharan African countries and the covert support that brain drain receives from the developed nations, mitigative measures suggested for African countries will not alone suffice unless they are given support by developed nations that are the usual destinations of the emigrants. So far, developed nations such as the United States, Canada, the United Kingdom, and France -- with obvious social
and economic hegemony among the African countries -- have facilitated the continued stay of some of the trained personnel beyond the time of completion of their education because of their own preference for these emigrants in those personnel areas whose output they are in a position to increase for their own national needs. In this circumstance, the international community should continue to put pressure on the developed nations to modify the existing laissez-faire policy on the immigration of professionals from developing countries, especially in those areas critical to the personnel requirements of these developing nations.

### Table 1. Trends in Educational Expenditure as Percent of GDP, 1960-1986

<table>
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<tr>
<th>Group of Countries</th>
<th>Education Expenditure (% of GDP)</th>
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<tr>
<td></td>
<td>1960</td>
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<tr>
<td>Least Developed Countries</td>
<td>1.5</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>2.3</td>
</tr>
<tr>
<td>Industrial Countries</td>
<td>3.7</td>
</tr>
<tr>
<td>World</td>
<td>3.5</td>
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</table>


### Table 2. Students from Selected African Countries in the United States and United Kingdom, 1977-78

<table>
<thead>
<tr>
<th>Country of Origin</th>
<th>Total Population, 1978 (in thousands, est.)</th>
<th>Students in the USA and UK, 1977-78</th>
<th>Students in the USA and UK, per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>10,480</td>
<td>2,827</td>
<td>27</td>
</tr>
<tr>
<td>Kenya</td>
<td>14,340</td>
<td>3,065</td>
<td>21</td>
</tr>
<tr>
<td>Nigeria</td>
<td>66,630</td>
<td>20,521</td>
<td>31</td>
</tr>
<tr>
<td>Group of Countries</td>
<td>Thousands of Persons</td>
<td></td>
<td></td>
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<tr>
<td>---------------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Per Doctor</td>
<td>Per Nurse</td>
<td></td>
</tr>
<tr>
<td>Least Developed Countries</td>
<td>23.3</td>
<td>4.7</td>
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</tr>
<tr>
<td>Sub-Saharan Africa</td>
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<tr>
<td>World</td>
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<td>1.6</td>
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</tbody>
</table>


### Appendix Table 1

**REFERENCES**


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