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Revisiting the Doctrine of Human Capital Mobility in the information Age

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Prologue

And what for I, with my brains and talent, was born in Russia?

Alexander Pushkin, the famous Russian poet of the 19th Century

Coming back to my native Pakistan in 1951 after taking my Ph D in theoretical physics at Cambridge and after a research period at the Princeton Institute for Advanced Studies, I began to teach at the Lahore Government College. In this position, I found myself desperately isolated. As the only theoretical physicist in the country, I had no one in my vicinity to talk to, to discuss or share ideas with. The academic climate was not stimulating at all. After three years, I realized that staying any longer would not make sense; my work would deteriorate, the harvest of my achievements in physics would go to waste and I would be of no use to my country.... I reluctantly decided to return to Cambridge.

Abdus Salam, Founder of the Trieste Center for Theoretical Physics, Italy

I feel frustrated when I want to do a piece of work but fail because of lack of basic facilities to do the job. Sometimes I look for a sabbatical leave to go and do research in a more sophisticated laboratory so that I can publish a standard paper.

A Tanzanian Chemist (1999)

I feel somehow isolated because of lack of appropriate research facilities.

A chemist at University of Dar es Salaam, Tanzania (1999)

Salaries of Third World continuously remain low, thus some people are tempted to look for better salaries elsewhere, thus Africa will become a brain-drained continent.

A Geologist at University of Botswana (1999)

Introduction

The movement of scholars from one country to another is known by numerous synonyms—Brain drain, brain hemorrhage, and euphemistically as brain circulation. The controversy over the concept has been

such that some refute concerns over the issue as emotional nationalistic nonsense (Das, 1974) while others urge for a serious commitment by some developing countries, particularly Africa, to staunch the serious outflow of their trained personnel (Sattaur, 1989). While one school of thought treats such movements as an extreme form of institutional nomadism (Hountondjii, 1990) another views it as a circulation of skilled labor in the emerging interdependent global economy (North, 1992).

As much as the terms to describe the phenomenon of skilled labor mobility are used interchangeably, their particular use often connotes the magnitude of the net flow and the perceived impact the movement has caused on losing countries. It is appropriate to state as well that the terms coined to express the events in a particular country at a particular point in time evolve as the overall state of that country shifts. While this article favors the term “brain mobility” owing to the current technological, economic, demographic, and social developments in the world and the complexity of the phenomenon, it, however, uses existing terms flexibly and interchangeably largely based on the premise they were initially conceived.

The international migration of scholars is a phenomenon as old as universities themselves—and therefore not peculiar to developing countries. Generally perceived to be a constructive dynamic, the movement of teachers and researchers from one national setting to another—ranging from permanent relocation to short-term visits or exchange programs—facilitates the dissemination of knowledge and the broadening of cultural horizons. However, when one nation becomes a substantial net exporter of academic (or other intellectual) talent, a “brain drain” condition is said to occur. The presence of this condition suggests that the sender nation is at risk of depleting its natural supply of intellectual talent (Schuster, 1994).

Brain drain emerged as a concept in the 1960s during massive migration of mainly British scholars to the US. After the culmination of the Second World War, “between 1949 and 1965 about 97,000 high-skill scholars emigrated to the USA, mainly from Great Britain, Germany and Canada.” Since the mid-1960s and in particular during the 1970s the geographic structure of the brain drain process noticeably changed, the developing countries becoming its “nutrient medium” (Simanovsky, et al 1996). With worsening economic hardships, social unrest, political turmoil, and declining work and living conditions at home, the volume of this nutrient medium has expanded, consequently intensifying the outflow.

Some statistics to indicate the current wave is in order. In 1998 nearly 120 doctors were estimated to have emigrated from Ghana and between 600 to 700 Ghanaian physicians are practicing in the USA alone. This represents roughly 50 percent of the total population of doctors in the country. It is estimated that about 10,000 Nigerian academics are now employed in USA alone and more than 1,000 professionals left Zimbabwe only in 1997. The estimates for Ethiopia indicate that about 50 percent of the Ethiopians who went abroad for training have not returned home for the past 10 to 15 years after completing their studies. Between 1980-91, a total of 5,777 students have returned from studies abroad out of the 22,700 students who went abroad—which is a mere 39 percent (Sethi, 2000).

Some specific figures may probably tell the story even better. In Addis Ababa University, Ethiopia—where the author worked for over 10 years —, of about 20 faculty members of the physics department who left for Ph. D. studies—almost all to the United states—none returned (Teferra, 1997). The same holds true for Mathematics department at the same university where the extent of non-returnees continues to force the department to employ fresh graduates regularly.

Corpus of literature on skilled labor mobility list a variety of pros and cons of the phenomenon. The major perceived negative impact of brain mobility that are often stated includes the erosion of the national scientific and technological potential of the losing country, cost of education of emigrants in the home country, and lost investment and benefits due to departure of specialists needed for the country. On the other hand the following are considered as major positive developments: better opportunity and personal development for the immigrant, financial benefits (by way of remittances) to home country, and serving as “safety net” for excess expertise produced. It is important however to stress that the pros and cons of the migration of skilled labor is far more complex and complicated than outlined here that necessitated a brief discussion later in the chapter.

Brain Mobility in the Emerging Virtual World

The motivation of scholars to immigrate or their decisions to stay abroad is a product of a complex blend of economic, political, social, cultural, and personal matters. The impact and chemistry of each factor varies from country to country, from individual to individual, and fluctuates from time to time.

Despite some economic and social success stories, most African countries constantly face economic hardships aggravated by political turmoil and social instabilities making it difficult for scholars to return home—while at the same time prodding those at home to migrate. Depressing news from home on suppression of dissident scholars by national governments furthermore discourages potential returnees, consequently frustrating the various efforts to contain the overflow of skilled personnel out of Africa.

Most African institutions perpetually face the arduous task of ensuring a healthy working environment to keep their scholars contented, up to date, and integrated with the rest of the world scholarly community. The prologue—excerpts at the beginning—vividly attests to this reality. It is not my intention to dwell on the concerns reflected by the excerpts heretofore, but rather particularly underscore the significance of the conference theme.

The main thrust of this article is to emphasize on the latency of skilled labor *circulation*—both in the traditional *physical* form as well as *virtual* mode—and the mechanism to tap its *fluidity* and *power* as enhanced by unprecedented and profound developments in information and communication technologies (ICTs). As much as the effort to regulate the impact of skilled personnel mobility relies on managing *physical* movement, the endeavor to exploit their potential in their place of residence has been apparently limited. It is the purpose of this article to underscore this domain that has been poorly exploited.

It has now become a cliché to state that we live in an information age and the world has grown into a small village. The ramifications of these developments are however beyond the comprehension of many ordinary citizens of the world. In particular, numerous economically less developed countries that live at the backwaters of science and technology watch helplessly while the information high train speeds away. The urge to board this speedy train is tremendously intense and this is particularly so for the elite in these countries who follow up innovations and developments earnestly and jealously. African scholars make up the large proportion of this group.

A few Africans however have managed to break the isolation iceberg owing largely to developments in ICTs through the Internet and email. They communicate with their colleagues internationally, locally, and regionally on scholarly, administrative, and personal matters; and this has helped to minimize the chronic problem of isolation many Africans still continue to face. The prologue and epilogue in this article testify to that effect.

In 1994, the world map of the Internet connectivity showed only two countries in Africa having full Internet connectivity—South Africa and Egypt. To date, there is hardly any country in Africa without some form of connectivity to Internet and almost all countries in Africa can be reached by email. Now the question is no longer whether or not Africa will ever get access to the Internet. Instead inquiries are about what African organizations and institutions will do with the technology (Dzidonu, 1999).

The contribution and impact a technology can make largely depends on the existence of an enabling environment and critical mass of expertise that can exploit it, and the concern and consciousness to employ it in solving problems as well as exploring ways and means to reach new frontiers. Developments in ICTs—such as the World Wide Web and the Internet—have enabled to reach many frontiers that were just impossible some years back. It is hoped that these developments in technology can help to maximizing the exploitation of the brain mobility potential.

The effort to enhance the contribution of native experts settled elsewhere in nation building in general and capacity building in particular—as well as to counteract the challenges of brain drain—has been hitherto focused on resettling the scholars back to their respective countries. The success of the various programs that are generally based on physically moving native experts has been however mixed. This is because the pull-push factors in the mobility process are so complex that they continue to frustrate many of these programs.

Studies show that many immigrant scholars—particularly from Asia and Latin America—contribute tremendously to their native countries. Their contributions are not only through foreign currency remittances but serving as visiting scholars, creating virtual networks, and generally shaping the direction of the scholarly environment and capacity building.

There are networks of ties that professionals working abroad often maintain with their home countries. Many Taiwanese scholars and scientists living in the US, for example, have maintained ties to colleagues in Taiwan, providing expertise, contacts with the Western scientific community, and in

general providing a means of communication. Some return home to serve as consultants or visiting professors. A few have invested money in Taiwanese high-tech and other companies. Indians who have emigrated to the US have been active in the growing software industry in the Silicon Valley in California. They maintain contact with colleagues at home, often investing in the Indian companies or assisting in joint ventures between American and Indian firms in the computer industry. This pattern of contributing to scientific and technological development is repeated for many Third World countries, though not so for most of Africa yet (Altbach, 1991).

Government policies of some of these countries also actively promote and strategize the manner in which nationals contribute to their native countries. A particular case in point is Thailand that promotes brain mobility virtually—on the Internet. Under a very attractive banner on a web site that reads “The Reverse Brain Drain Project,” it states dual missions. Of the two missions, the “high priority” is not to “promote and facilitate the return of Thai professionals overseas to work in government agencies or in the private sector [in Thailand].” It is rather to “identify and attract experienced high-level Thai professionals living overseas to participate in mission-oriented projects, and promote development of core teams led by the respective Thai professionals.” In fact, the mission explicitly acknowledges de-emphasis on the permanent return program. It should be emphasized that the primary and major objective of the whole initiative is to make the immigrant nationals become part of the nation building process without uprooting them from their bases elsewhere.

Philippines is a country where both “brain drain” and “brain hemorrhage” play themselves out at the same time. Gonzalez (1992) holds that this is a consequence of mismatch between the manpower needs of the country and the output of higher education—which he describes it as interlocking conflicts in policy and practice that produced both oversubscribed and undersubscribed expertise. Incidentally such mismatch is a very common phenomenon in numerous African countries where they

suffer from lack of highly trained experts while at the same time many of their highly trained personnel remain unemployed and underemployed.

Gonzalez holds that no uniform solution is possible, as the nature of the problem is different for each area. For oversubscribed professionals, he proposes overseas employment as a viable option; it is a source of foreign exchange and a natural way of population control. For undersubscribed professionals a system of incentives tied to a period of mandatory service, after which the beneficiary may exercise his/her options. Some lesson can be learned from this Asian experience.

Certain government policies in Africa as well do not consider the movement of its scholars as brain drain—rather the contrary. Egypt, for example, considers its Diaspora as its treasures kept abroad. It is vital to affirm that these unclaimed treasures can potentially serve as *another* window to the industrialized world, as *another* bridge in knowledge transmission and exchange, and as *another* catalyst in fostering knowledge creation and utilization. It is apt to remark, therefore, that the Diaspora is a vital and influential community of “undercover” ambassadors—of their home countries and regions—without formally designated portfolio.

Some African Diaspora communities have taken it upon themselves to contribute in the development of their home countries, among others, by establishing knowledge networks that span across the world. The Ethiopian community in Diaspora, for example, has established several virtual communities that discuss various social, political, ideological, economic, developmental, scientific, and technological issues. The recently established Association for Higher Education and Development (AHEAD) that is concerned about the migration of expert Ethiopians is an interesting case in point. In its recent communiqué, the authors succinctly wrote, “The purpose of this article is not, however, about the past. It is about the future. It is

not about mistakes; it is about corrections. It is not about who is wrong and who is right. It is about lessons learned. It is not about failed duties, it is about paying back our country. It is not about brain drain, it is about reversing it.” It goes on to say “Our long-term objective is to coordinate and channel the resources, expertise and creativity of Ethiopians in the Diaspora toward development efforts in their motherland. This means developing and operating a program that will facilitate the identification, selection and assignment of Ethiopian professionals to various voluntary activities in Ethiopia. It also means coordinating the Ethiopian community to establish a foundation to support Ethiopian higher education institutions and students” (AHEAD, 2000).

With the expansion of online capabilities and access, many such virtual and “real” institutions have multiplied rapidly by many committed and concerned Africans in Diaspora. The impact, scope, and significance of such institutions, however, remain to be investigated.

If the main purpose and objective of reversing brain flow is to build capacity of those countries that export and continue to export their experts—unwillingly or otherwise—the approach to moderate the flow should not therefore adopt one single strategy that predominantly leans toward repatriation. It is important to realize that skilled labor has propensities to mobility and appears futile to attempt to control it. Even numerous Western scholars whom we most of us trust as enjoying a far better autonomy and academic freedom and working and living conditions than their counterparts in the Third World, and especially Africa, crave for even more greener pastures elsewhere.

A study made by Schuster (1994) that surveyed British faculty shows that 40 percent of all surveyed replied that they had “seriously” considered making a

permanent move abroad. The study also shows that roughly twice as many faculty whose primary interest is “research” are emigration-prone compared to those whose primary interest is “teaching.” Recalling that 40 percent of all university faculty say they have seriously considered moving abroad, the proportion climbs to 47.3 percent among the “researchers” but slips to 23.8 percent among the “teachers.”

Such studies urge that the traditional discourse to manage skilled labor mobility that predominantly leans on physical movement of experts be revisited. It should be noted as well that, what at one time was a “one way street” in which Third World professionals migrated to the West, maintaining few contacts at home, has been transformed into a complex set of relationships in which emigrant professionals contribute significantly to a growing world economy and to the flow of expertise—and sometimes capital—from the industrialized nations to many Third World and newly industrialized nations (Altbach, 1991).

Because the mobility of skilled labor is a complex process, it is imperative to adopt various strategies and approaches to address it. Even the variety of strategies and approaches that are often adopted have to be reexamined in the face of changing social, economic, political, demographic, and technological paradigms. The economic paradigm of the twentieth century that was largely dependent on natural resources has now shifted to an information-dominated one driven by knowledge creation and dissemination. On the technological front, unprecedented developments in ICTs have opened the world of opportunities that were not even imagined a couple of years ago. In the political front, the culmination of the Cold War brought about a massive movement of people across the strategic divide. These snapshots of developments therefore underscore the point that strategies and approaches to address the brain mobility issue take heed of these global dynamics. As a matter of fact, the global

dynamics that currently spins on information and knowledge platforms brings a whole lot of meaning to the philosophy and doctrine of the movement of skilled labor force that creates, consumes, manages, and distributes information and knowledge.

It is, therefore, pertinent to underscore that the national and international endeavor, like the current one to address the issue of African skilled labor mobility, should as well focus on fostering the utilization, contribution, and exploitation of the brain power of native immigrants wherever they reside.

It is therefore crucial that the doctrine of human capital circulation—dominated by *physical* movement of skilled personnel—be dutifully reformulated to accommodate and mobilize the growing potential of immigrant African scholars to participate in nation building *virtually* as well. Virtual in this particular context is used to signify skilled immigrant participation in nation building without physically relocating them into their native countries where their expertise is sought.

Capacity Building in the Realm of Major Educational Policy Shift

There is high optimism in the air as regards to special role and contribution of highly trained citizens in this era of information that advances on highly skilled labor force. The current shift in educational policy—that reaffirms the impact of skilled human labor in the information age and the ever importance of higher education—by major and influential institutions will have a very positive role to play in the effort to building capacity in Africa in general and brain mobility in particular.

The policy affirms that the participation in this revolutionary world requires a new set of human resources: trained to higher qualifications, capable of greater intellectual independence, and possessing the flexibility and capacity for lifelong learning—better human capital. It goes on to warn that not to participate means falling behind, enduring intellectual and economic marginalization and isolation,

and continuing, if not rising, poverty. It reaffirms that the main practical sources of supply for the newly required human resources to be found in higher education. It emphasizes that the role of higher education was not suggested as insignificant before the current knowledge revolution, but it is to affirm that higher education has never been as important to the future of the developing world as it is right now (World Bank, 1999).

It appears that the era of education policy, which was grounded on narrow econometrics of rate of return that resulted in measures that disfavored higher learning in the Third World, specially Africa, is over. The current discourse in education policy strongly affirms the pivotal role of higher education in the 21st century that passionately recommends more emphasis and attention to higher learning institutions. This policy shift has a lot of meaning on the lives of most African higher learning institutions that are often poor, derelict, and alarmingly deteriorating.

Should the new policy guidelines become important maps that direct the education sector, it is hoped that, they will play a positive role in higher learning institutions that affect the lives of students, faculty, researchers, and, administrators which in turn impacts the lives of many others in the nation. The role this policy therefore plays in terms of capacity building in Africa and the decisions of brain mobility—that are often associated with poor working and living conditions—should not be underestimated.

Higher learning institutions are vital for training and graduating highly skilled labor force. Unlike the Western World, Africa and the developing world heavily rely on these institutions to produce skilled labor force. The contribution of higher learning institutions in these countries to producing highly skilled labor

force, therefore, is of paramount significance that entails the commitment and attention to strength and rebuild them.

Numerous other developments in various fronts will continue to influence the status quo in the higher learning landscape. In the current market-driven world economy, most policies are launched on profit platforms that often spare almost no institutions. Education has not been the exception either. While the debate—on whether or not higher learning is a public or a private good—continues to rage, private postsecondary institutions are flourishing and diversifying all across the world. In Africa, for example, private postsecondary institutions are the fastest growing tertiary educational institutions that cater to a huge potential market.

On the distance education front, numerous attempts are underway to reach the millions of people that are desperately seeking higher education in many developing countries and Africa. Notwithstanding several challenges, developments in ICTs have made this educational approach ever more a reality.

As much as these two developments stated heretofore play an important role in addressing the thirst for skilled labor and higher learning, they lack most elements that directly nurture the development of national capacity building. Most private institutions understandably shy away from important, but less profitable, disciplines, such as the hard sciences and the humanities. As much as distance education promises to deliver to the vast market, its significance on building national capacity remains to be seen in African environment.

While national governments should vigorously promote the expansion of private postsecondary institutions and distance learning, they have to make a serious effort and commitment to improve the state of traditional higher learning

institutions—notably universities—that produce the vast majority of African highly trained labor force. It is important to affirm that this force is a vital asset that enables Africa to compete in the emerging knowledge- and information-driven world. It will be a serious policy flaw to forsake the development of capacity building either to market forces—driven by private institutions—or distance learning that yet have to take off. The major platform to launching the development of capacity building should remain with national universities—and national research institutions—and the momentum that is gathering in favor of higher learning should be directed towards them. The strengthening of major regional higher learning and research institutions should as well be seen in this light.

Earlier experience in the development of African higher education vividly reminds us how excellent and highly regarded institutions were built in the 1960s through a concerted effort by governments and nongovernmental agencies notably—the foundations. Though various other factors conspired, these institutions however regrettably declined in a matter of years as emphasis on higher education came out of vogue.

What experience can be drawn from this scenario? If past is of significant value to advance ideas to the future, initiatives should focus not only to take effective advantage of the momentum created by current environment to ensure better quality teaching and research in African higher learning and research institutions. It is also extremely important to make an indelible mark of this momentum on these institutions long after this momentum gets attenuated. Introducing the concept of *sustainability* to see these institutions through difficult times—like the one most African institutions currently find themselves—will be

a very pragmatic one. Endowing African universities, among others, to ensure a sustained, competent, and recognized level of academic achievement is one major pioneering initiative Africa has to vigorously experiment with while the momentum is in its favor.

The Way Forward

The reformulation of the mobility paradigm calls for the reassessment of the responsibility and duties of existing infrastructure. It also requires that new bodies that may have to be instituted conform to the new paradigm. What does the shift in paradigm therefore entails?

First, it requires that all the stakeholders in the issue of skilled labor mobility trust that alternative ways exist to mobilizing the expertise without necessarily relocating them. It has been acknowledged that, the attempt to return African scholars to their respective native lands has been an uphill struggle. While the decisions of the scholars to immigrate—or not return—and the social, political, and economic fabrics of a country cannot be altered by these institutions committed to addressing the problem—at least directly and immediately —, it is however pragmatic to deal with the situation in a manner that exploits the status quo. This entails therefore that concerned bodies—be it governmental or nongovernmental—should *also* act as positive catalysts in mobilizing the skilled labor force for African capacity building wherever it exists in various frontiers, for example, by employing virtual fora.

Second, bodies with clearly and pragmatically defined missions, objectives, and plan of action that explore and coordinate should be set up. This may only require a reorganization of existing bodies to help capitalize on current developments. For example, given the unprecedented developments in ICTs, the establishment of bodies that create, maintain, and foster virtual scholarly community is an important and timely approach; if these bodies exist they should be strengthened and upgraded.

Third, the impact, contribution, and significance of the approach to the new paradigm shift in addressing the mobility issue could be positively and negatively influenced by the amount of resource at its disposal. Bright ideas and initiatives not complemented by commensurate resources are often doomed to failure. It is therefore important to consider seriously, either in the reorganization of existing infrastructure or the creation of one, to ensure comparable financial and technical resources for such initiatives.

The collaboration and cooperation of the stakeholders are vital for the success of this initiative. It is believed that all the stakeholders have their share of contribution and the effort should focus on complementing and integrating the commitments and contributions. International organizations, for example, have the financial and technical resource, experience and expertise in coordination and administration, and enjoy better credibility and prominence. National governments provide a platform upon which initiatives are launched and their role is deservedly paramount. In the absence of full commitment by governments and their officials, such initiatives may find it difficult to take off. Gathering the support and the commitment of national bodies is vital for the success of such initiatives. Various institutions may have to be approached and engaged to implement such initiatives and most notably scholarly and academic institutions. By their very nature, scholarly institutions, in particular, often tend to be very conservative and change-resistant that have a potential to attenuate such initiatives. Even if national governments consent to a particular initiative without the approval, participation, and engagement of these institutions and their scholars, chances are that they will be thwarted by the various local institutions at different level.

Summary

A lot has been written on the underlying causes for flight of scholars and various ways to regulate it. Numerous African governments have taken measures to attract their scholars living abroad by providing free housing, duty-free status, tax-relief, and various other benefits. Such traditional approaches to contain the excessive outflow of the skilled human capital, have apparently had limited outcome.

Unless scholars become confident that they have better living and working conditions for themselves and their dependents, bright future to their career development and accompanying financial remuneration, relatively free, stable, and autonomous academic environment, the effort to address the human capital movement—based on the strategies that have been adopted hitherto—will continue to be frustrated. Vast earlier experience from countries such as India, Taiwan, and South Korea could serve as vital reference for remodeling the brain mobility paradigm in Africa.

Approaches to address the movement of scholars in whatever form—brain drain, brain hemorrhage, brain circulation—should seriously consider the complexity of the issue, the technological developments in the world, and the idiosyncrasies of international, regional, and national political, social, and economic realities. Given the world that made physical mobility ever more easy and simple and at the same time ever more redundant, the policies that may be formulated to address the movement of brain capital should seriously take in to account the patterns of these developments and their ramifications.

ICTs continue to make profound impact practically on all walks of life. Networks made possible through virtual fora that dwell on every conceivable topic have flourished over the last couple of years. Concerned institutions should take advantage of these developments by actively participate and involve in the creation, maintenance, promotion, and moderation of effective networks that make possible the invention, transfer, and exchange of knowledge between scholars in Diaspora and their colleagues at home. If effectively exploited, the Diaspora could help make a difference in bridging the widening digital divide between the industrialized world and developing countries. Such non-traditional pragmatic approaches will bring the brain power back in to the circulation to help in capacity building and nation building. It is thus important that the attempt to address the issue of the flow of expertise—reversing the brain drain—focus on capitalizing and exploiting these fora that became possible through ICTs to help build capacity and redress the damage sustained from excessive outflow of experts.

The re-conceptualization of educational policy at the highest level currently favors higher education owing largely to the shift from the resource-based economy to knowledge- and information-driven one. African governments, institutions, and

scholars and concerned non-governmental institutions should take a major and active lead to take advantage of the current momentum in their favor to build their higher learning institutions.

It is hightime that the philosophy and the strategy to address the flow of expertise be reformulated given the social, economic, ideological, and technological developments around the world. It is vital that the strategy to build capacity in Africa and the approach to addressing the issue of brain mobility should as much focus on tapping the Diaspora wherever they exist. The developments just referred heretofore dictate a paradigm shift in the way brain mobility should be conceived, addressed, and tapped.

Whatever approaches should be eventually adopted to address the issue of brain mobility and capacity building by organizations, governments, and other concerned institutions, the strategies should be as complex and diverse as the problem itself. It is wise to blend the effort with a tinge of indebtedness, nationalism and patriotism, responsibility and duty, envy and zeal.

Epilogue

One of the objectives of the Association is “to create linkages between the medical faculty [in Ethiopia] and the Ethiopian Community in Diaspora.”

Association for Higher Education and Development (2000)

Forty-one expatriate knowledge networks have been identified around the world to date. What is disturbing, however, is that of these 41 networks only six are linked to African countries compared to other world regions like Latin America and the Middle East.

Mercy Brown (2000)

The revolution represented by electronic media nowadays is that a small institution in a remote village in Africa has the possibility of posting its priorities and findings in a medium that is accessible to anyone else on earth with a phone line and electricity (and a computer, of course). This in turn would enable small communities dispersed around the world and individually unable to pursue their goals to pool their resources and bring together strategies to, together, support a common goal. At least that's the dream.

Development/ Public Policy Expert (2000)

We do not feel isolated now. Because we are communicating with the rest of our colleagues everywhere thanks to email and the Internet.

An Ethiopian Biologist at Addis Ababa University, Ethiopia (2000)

The Internet has optimized communication which makes collaboration with other institutions abroad more viable. Certain analyses are done abroad and communication about this is fast thanks to Internet. This communication leap has also increased the scientific credibility of African Scientists.

A chemist at University of Dar es Salaam, Tanzania (1999)

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