

**INTERNATIONAL MIGRATION
PAPERS**

45

**POLICY RESPONSES TO THE
INTERNATIONAL MOBILITY OF
SKILLED LABOUR**

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Foreword

This report forms part of the series of studies conducted by the International Labour Office under the DFID-sponsored project on “*Skilled labour migration (the ‘brain drain’) from developing countries: Analysis of impact and policy issues.*”

International migration of skilled persons has assumed increased importance in recent years reflecting the impact of globalisation, revival of growth in the world economy and the explosive growth in information and communications technology. A number of developed countries have recently liberalized their policies to some extent for the admission of highly skilled workers.

The problem lies in the fact that this demand is largely met by developing countries, triggering an exodus of their skilled personnel. While some amount of mobility is obviously necessary if developing countries are to integrate into the global economy, a large outflow of skilled persons poses the threat of a ‘brain drain’, which can adversely impact local growth and development. The recent UK government (DFID) White Paper on International Development, “*Eliminating World Poverty: Making Globalisation Work for the Poor*” has rightly pointed out the need on the part of developed countries to be more sensitive to the impact of the brain drain on developing countries. It was in this context that the Department for International Development, United Kingdom, approached the ILO for carrying out research relevant to the above issues.

In this report, Professor Lowell reviews policy responses by source countries to the international mobility of their highly skilled workers based on an extensive survey of literature. He has grouped these policies into six convenient categories under the umbrella term ‘Six Rs’: *return, restriction, recruitment, reparation, resourcing* (diasporas) and *retention*. The paper deals with these policy strategies in detail. Three of the ‘Rs’ are variants of migration policy, e.g. *return, restriction* or *recruitment*. For those who remain abroad, *resourcing* or ‘diaspora options’ rely mainly on the creation of expatriate networks that return knowledge to the home country, facilitating transfer of technology and increasing the possibility of *remittances* through outreach to skilled expatriates. Retention policies focus on improving domestic opportunities in the educational sector, as well as those that target domestic economic growth and lessen the incentive to emigrate.

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Executive Summary

The international mobility of highly skilled workers presents developing countries with a serious challenge. Theory and research suggest that the direct impact of a brain drain, that is a sizable loss of highly educated natives abroad, represents a reduction in the accumulation of human capital or knowledge (Straubhaar 2000; Lowell 2001). Such losses are greater than the simple loss of investment in educating the emigrants in the first place and the immediate result is a reduction in economic growth of developing countries.

Still, many observers note that a brain drain can generate feedback effects that may yield positive economic gains for the migrant source countries. Indeed, the bulk of the policy literature is uncomfortable with the term brain drain and prefers terms such as “brain gain” or “brain circulation.” But whether a brain drain reduces sending country growth depends upon the degree to which its direct negative effects are offset by favourable economic and migratory feedback effects: there is the notion that there may be an optimal level of emigration or a “beneficial brain drain” (Beine et al. 1999; Mounteford 1997).

This review describes “Six Rs” or policies that can facilitate feedback effects and, thereby, take advantage of high skilled emigration. Calls in the 1970s for the *reparation* of the direct loss through a brain drain tax has long since been disregarded as a viable way of offsetting the adverse effects of high skilled emigration. Three of the “Rs” are variants of migration policy, e.g. *return, restriction, or recruitment*. Restrictive admission (or exit) policies touch on the rights of the individual international migrant, as well as run the risk of impeding positive feedback effects. Policies that encourage return migration may be in the best long-term interest of the migrant source countries, but almost no policymakers in receiving countries as yet justify temporary admission standards on such a basis.

For those who remain abroad, there are *resourcing* policies. These “diaspora options” rely mainly on the creation of expatriate networks that return knowledge to the home country, e.g., that facilitate the transfer of technology. To date, most expatriate networks are autonomously founded and there may be role for the expanded involvement of both source and receiving countries. Further, *remittances* are a significant source of income for developing countries. Outreach to skilled expatriates can take advantage of the greater likelihood that they will save in foreign currency accounts in the home country, invest in remittance backed bonds, or invest in entrepreneurial activities when incentives such as reduced tariffs or income tax breaks are offered.

Finally, grand policies of *retention* are likely to be the best long run response to a brain drain. The most active policies have and continue to be academic ventures based on regional and international cooperation where receiving countries play an active role. Additionally, many developing countries have individually, or in the context of regional accords, targeted ICT development as means of getting on the information-age bandwagon. Such projects promise to be a fruitful way of stimulating economic growth and reducing permanent out migration of highly educated natives.

1. Introduction

A country's loss of highly educated persons to other countries, a.k.a., the brain drain, has been a concern of policymakers ever since the most recent wave of global migration took off in the post-World War II era. At first, it was a concern of cross-Atlantic flows primarily from Britain and Germany to the United States, but by the late 1960s developing countries began to lament their losses to Western Europe and North America. While quickly dismissed by some, many policymakers from different levels of government express concern both within and across developed and developing nations.

A review of the theoretical literature shows that most economists believe that the direct impact of a sizable brain drain will reduce the economic growth of the sending country (Lowell 2001). What little empirical research exists appears to, as expected, show that the direct impact of a brain drain is to significantly slow GDP growth (Straubhaar 2000). And what little comparative research exists on the demography of the phenomenon also demonstrates that the losses of tertiary (college) educated persons can be truly significant (Carrington and Detragiache 1999). Seriously affected countries such as Iran, Ghana, El Salvador, or Guyana lost nearly a third of their educated elite to OECD countries in the pre-1990 period. It seems clear that the outflow of highly educated elites has accelerated and has been especially been remarked upon during the late 1990s boom in information, communications, and technology (ICT).

Recent economic thinking on economic development suggests that the human capital assets of a nation are one its most important tools for growth. Indeed, the average level of human capital in a society has positive effects on productivity. The greater a country's average level of education, the greater its economic growth (Lee and Barro 1993; Barro and Sala-I-Martin 1995). More skilled workers permit countries to lower their production costs and be more competitive, but they also generate knowledge that drives adaptability and economic growth. One study of 111 countries 1960 to 1990 found that a one-year increase in the average education of a nation's workforce increases the output per worker by between 5 and 15 percent (Topel 1998). When a nation loses significant numbers of its most educated, it stands to lose a critical asset that can damage the earnings of its low-skilled workers, increase poverty, and widen inequality.

Not that all policymakers are concerned. Recently, a Pacific Economic Cooperation Council meeting denounced the idea of brain drain for Asian countries and stated that it is the advanced industrial countries that are competing more, and suffering more, from brain drain (Japan Economic Newswire 1999). Perhaps, it is true that highly educated emigrants generate positive feedback effects that readily offset the direct, negative effects of brain drain. Return migration is one obvious factor. Not all those who leave stay abroad and when one-time expatriates return they may return with greater experience, knowledge, and savings. For those who stay abroad, there are workers' monetary remittances. Technology and knowledge are transferred home; and an expatriate population may stimulate exports. Taken individually or together, these feedbacks may make an initial brain drain a long-term brain gain.

But in fact, even if individual academics and global businesspersons are typically cavalier about brain drain, policymakers and local businesspersons are concerned. And some nations are clearly worried; these are not restricted to developing countries such as South Africa or the Philippines,

but also Canada, Australia, Britain, and other industrialised nations. When faced with significant numbers of highly educated elite leaving for better wages elsewhere, it is natural for warning flags to be raised. At the least, the loss represents losses to past educational investments, or it may signal failing employment conditions in the source country, and it can portend losses to future productivity.

What can policymakers do? This paper classifies 6 general policy responses to brain drain and reviews selected examples of each. The available formal literature was reviewed and, in addition, some 150 newspaper articles from around the world were collected in March of 2001. They cover a bevy of interesting examples of courses of actions taken by governments in developed and developing countries. In fact, it is interesting to note that the bulk of international reporting places little emphasis on the purported adverse, direct impact of a “brain drain,” and rather more emphasis on the various types of favourable feedback effects of the international mobility of the highly educated. The focus here is on developing countries, but the options available are in many cases pioneered by the developed countries. Examples of regional plans to address shortages of highly skilled manpower are presented in appendixes to the paper.

2. Policy Responses to High Skilled Emigration: The Six R’s

Highly skilled emigration typically generates its own feedback loops, most of which operate more or less independently, and some of which can be facilitated by policymakers. In many cases, if policymakers do not step in feedback loops are likely not to operate at all. At least six general policy types can be identified, each of which has subtypes and varied examples of policies that are actually implemented. The six types, referred here to as the “six Rs” are:

- Return (migration)
- Restriction (migration)
- Recruitment (migration)
- Reparation (monetary)
- Resourcing (diaspora options)
- Retention (opportunities)

Of course, the choice of “Rs” is simply expository; there is no agreed-upon terminology for the policies used to respond to the brain drain. Thus, return, restriction, and recruitment are policies directly affecting the movement of people (e.g., migration policies). Reparation refers to schemes to create monetary compensation to source countries for brain drain. The resourcing option includes a variety of approaches that might be grouped under what are variously known as diaspora options, e.g., ways to benefit from expatriates. Retention includes policies that focus on improving domestic opportunities in the educational sector, as well as those that target domestic economic growth and lessen the incentive to emigrate. Table 1 shows brief definitions of each and in the balance of this paper tables are shown with selected examples of each brand of policy.

Table 1. Policy responses to high skilled emigration: The “Six R’s”

<p>Return of migrants to their source country</p> <p>The return of emigrants is one sure way to cultivate human capital for source countries, especially when there is value added from working abroad. Permanent return tends to be the focus of most such policies (kindred temporary return programs are under Diaspora Options below).</p>
<p>Restriction of international mobility</p> <p>Many developing countries have restrictive emigration policies that make it difficult for their national to take jobs abroad. Most all countries restricted the immigration of foreign nationals to protect their domestic workers from competition.</p>
<p>Recruitment of international migrants</p> <p>If there are domestic shortages of skilled workers, for any reason, why not court foreign workers? For example, the information technology revolution sparked a worldwide competition for workers: new policies worldwide ease numerical and “protective” regulations on admissions.</p>
<p>Reparation for loss of human capital (tax)</p> <p>A favourite but never implemented economic prescription in the 1970s, the idea is that developed countries either compensate source countries, or that that emigrants directly submit taxes, to deal with externalities created by the immediate loss of human capital.</p>
<p>Resourcing expatriates (Diaspora options)</p> <p>Skilled emigrants abroad can be a significant resource, especially if ongoing contact between academic and private sector institutions is fostered. Government and private sector initiatives seek to increase communications, knowledge transfer, remittances, and investment.</p>
<p>Retention though educational sector policies</p> <p>Creating a highly educated workforce begins with strengthening domestic educational institutions. A viable system that encourages graduates to stay with the system, that retains people, ensures that the source country keeps its original investment in education.</p>
<p>Retention through economic development</p> <p>Giving people a reason to stay (or return) is doubtless the most effective policy for reducing emigration and the surest long-term means of boosting average human capital, as well as economic growth.</p>

3. Return of Migrants to their Source Country

Return policies are active, incentive, and information based. An active program would be the International Organization for Migration (IOM) program of return that funds the expatriate family’s return and helps establish them in their home country. Given the scope of the program, it is described at greater length below. Funding for such a program logically comes from

governmental or international organizational sources. While somewhat costly, having to cover job matching, travel, and settlement, the cost of such programs in the medium term is likely to be small relative to the advantages it creates for the source country, as well as the increase in global productivity over the longer run.

Table 2. Return of nationals abroad: Selected policy examples

Policy	Description
IOM African return program	The International Organization for Migration (IOM) manages the program for the Return of Qualified African Nationals (RQAN). IOM aids countries identify areas that would benefit from the experience of expatriates who must satisfy certain criteria. The program helps émigrés and their families resettle in their country of origin or in another country designated as “target” country.
Irish Christmas recruitment	The Irish Ministers of Enterprise Trade and Development are recruiting expatriates to return to build the software industry; targeting those returning home for Christmas (Belfast Telegraph 1999)
Malaysian return incentives	Malaysia hopes to provide incentives for return by giving out tax exemptions, permanent resident status for spouses and children, and relaxed immigration policies (Hamid 2000; Hong 2000).
Mexican student loan forgiveness	The Mexican government program Becas CONACYT grants loans to students who study abroad, if they return much of the loan is forgiven, and if they go on to work at a Mexican university the loan is forgiven (Verhaal 2000).
Canadian tax incentives	Now discontinued, Canada for a short time gave federal income tax holidays for up to three years to its emigrants who returned for employment.
Malaysian internet job postings	Created on an exploratory basis with hopes to expand, Malaysia’s JobsDB.com lists domestic high-skill jobs to inform expatriates about positions available back home (Boey 2000).

Some countries have experimented with tax incentives such as tax holidays for returnees. Canada tried but abandoned such a scheme, while Malaysia has planned to implement tax holidays and other incentives for returnees. It would grant citizenship status to the foreign spouse and children of a returnee, certainly a boon for any returnee. The judicious combination of economic and special immigration rights is a creative approach to creating incentives for return.

In fact, citizenship policies figure into this policy approach (see Aleinikoff and Klusmeyer 2001). Emigrants may be loath to return to their source country if they risk losing residency status, e.g., typically a complaint of U.S. temporary migrants or even legal resident aliens. Expatriates will stay in the United States because lengthy trips home disrupt the legal requirements for continuous residence needed to obtain/retain either legal permanent status or as a prelude to claiming citizenship. Having made the decision to move to a higher-wage economy, the emigrant is likely to wish to retain access to the earnings and lifestyle available there; as well as to any family, home ownership, or investment commitments they have made. Simultaneously,

if they are able to secure and retain permanent residency (citizenship) rights in their new country, the emigrant may feel freer to return to their home country: the option to go back to the higher-wage economy at any time creates an option that buffers the risk of returning home to the lower-wage economy.

Advocates of dual nationality or citizenship argue that the maintenance of rights encourages regular movement and even return. For example, while as a practical matter U.S. persons can hold dual citizenship, many source countries do not permit their expatriates to retain citizenship once they claim citizenship in another country. Having established residency or citizenship status abroad, but having lost it at home, undercuts a host of legal rights and connections to the source country—and, hence, the likelihood of return. If they lose the right to own land or other privileges (including the right to vote) in their home country there is little incentive to return.

Information-based approaches round out the key return policies available to source countries and, perhaps, require the least economic or political capital. In particular, the Internet's role has increased over the past decade and governments are creating internationally assessable job databanks in an attempt to help expatriates learn of opportunities. Malaysia, Thailand, and South Africa have online job listings. Typically, these websites also provide forums for other sources of information and exchange, e.g., encouraging return of workers as well as ideas (see diaspora options below). Industry information and economic performance are given to familiarize the expatriate with conditions at home. Naturally, a job candidate listing would complete the information loop, giving home-country employers a chance to consider expatriates looking for return opportunities.

3.1. Program for the return of qualified African nationals

The Return of Qualified African Nationals (RQAN) is a program developed and implemented through the International Organization for Migration (IOM). RQAN aims to develop a country's economy by seeking persons who are highly trained and qualified to either "return" or find positions in each country that will benefit from the person's training. The RQAN is currently used by 10 African governments and has succeeded in returning and integrating 1,500 skilled Africans to fill positions in important sectors of the economy (Africa News 2000).

The countries who will benefit from this program are divided into two categories; target and non-target countries. In Target Countries, there are particular priority sectors that have been identified, and RQAN seeks to find persons to aid these sectors. In Non-Target Countries, RQAN will facilitate a national's return, but will not generally aid in finding employment in those countries.

Persons who intend to participate in the RQAN program must satisfy certain criteria. These persons must be skilled African nationals who live or reside outside their country of origin. The skills these persons have must be a "priority" to the country receiving the person. The person must have at least two years of work experience and/or have a doctoral degree. If the person is a national of a Non-Target Country and intends to return to that country, they must already have a firm employment offer.

RQAN Target Countries include Angola, Cape Verde, Ethiopia, Ghana, Guinea Bissau, Kenya, Uganda, Zambia and Zimbabwe. IOM will assist nations to identify positions in these countries with employers, will provide pre-departure briefings and post-return follow-up, will arrange locally-based training during the post-return time period and if the person intends to be self-employed, technical assistance to do so. All the countries in sub-Saharan African, except South Africa, are considered Non-Target Countries because they have no ability to reintegrate qualified nationals. However, if a person has firm employment with a company in one of these countries, the RQAN program will provide some assistance.

Finally, the RQAN program will provide some services to the returning national. These services include, return airline tickets for the candidate and any dependents, shipment of personal effects, purchase of some professional equipment or materials, some settling-in expenses, modest interest-free, reimbursable loan for those candidates who will be self-employed.

4. Restriction of International Mobility

There is any number of ways in which either sending or receiving countries can restrict international mobility. In principle, most countries in the post-cold war era permit their citizens to leave, although at the same time almost all countries place restrictions on the kind and number of immigrants who will be permitted to enter. Immigration quotas set restrictions on international mobility and the conditions for issuing a visa. But some countries also set conditions that affect the ease with which exit visas can be obtained.

Table 3. Restriction of international mobility: Selected policy examples

Policy	Description
Malaysian freeze on low-skilled admissions	The Malaysian government intends to freeze the hiring of foreign workers in 138 categories of skilled and semi-skilled jobs (as many as 100,000 positions) in a bid to increase the skill composition of the labour force (see Malaysia's plans to recruit highly skilled workers below; Wong 2000).
U.S. "J" cultural exchange visa	This class of temporary visa is issued primarily to persons whose primary purpose is to gain U.S. experience and to return home. As a result, the visa imposes a 2-year return requirement before the individual may apply for another temporary (other than visitor) or permanent visa.

Receiving countries often have temporary entry programs that require workers or students to return to their source country after a period of time. Australia, for example, hosts several thousand twenty-year-olds who are permitted to work for up to a year, after which they are required to return. This tradition of young people gaining experience abroad is an ingrained part of the Australian heritage and one that is readily extended to foreigners. Somewhat similar in its larger intent, the United States has a "J" visa issued for the purpose of cultural exchange. Most U.S. temporary visas require individuals to express a clear intent to return home, but do not preempt the possibility of changing status to another class of temporary or permanent visa.

Under the “J” visa, students, doctors, camp counsellors, and nannies are permitted to study and work in the United States for a period of a few years, but are then required to return to their country of origin. They must remain in the home country for at least two years before they are permitted to reapply for another U.S. temporary working visa or permanent residency.

Indeed, temporary visas are a type of “restrictive” policy that can rebound to the benefit of both the receiving and sending country. Yet, with the exception of visas such as the U.S. “J” visa, the logic underlying most temporary visas has nothing to do with protecting the source country from a brain drain. Most temporary visas are issued because many individuals only desire a temporary stay (think visitors or businesspersons), or because it is believed that permanent admissions would distort the natural tendency for domestic labour markets to respond to cyclic supply shortages. In other words, temporary admissions for work purposes are designed to protect the domestic market of the developed receiving economy. Further, temporary visas quickly supply workers and are cheaper than domestic training (Van Slambrouck, 1999).

In neither the United States nor elsewhere are temporary visas issued with the intention of ensuring the return of foreign workers for the purpose of addressing the brain drain from developing economies. But, arguably, temporary visas have precisely the favourable effect of offsetting the directly negative impact of a brain drain. In the United States about half of foreign doctoral students remain and, conversely, the rate of return is high enough that some observers prefer to think of the migratory pattern as one of “brain circulation” (Johnson and Regets 1998).

5. Recruitment of International Migrants

Recruitment policies are not intended to bring back expatriates, but rather to offset their loss, or to gain a national advantage in the competition for occupations in global shortage. Indeed, the information, communications, and technology (ICT) revolution sparked a worldwide effort by governments to court ICT workers. The U.S. seems to have won out thus far. Developing countries too have put in their bid to attract skilled workers. Most of the new spate of policies is for temporary visas that are made easier to get for employers and high-skilled foreign workers.

The ICT revolution is not the first, but it is perhaps the most startling example of how an information-age industry can quickly generate global demand for labour. In the United States, the dominant ICT leader, the bulk of that demand filters through the temporary “H-1B” visa whose numbers were tripled in a three-year period. An increase driven by apparent market demand, but also with the necessary legal increase in numerical caps by the U.S. Congress.¹ About one half of H-1B visa holders work in ICT occupations and the program supplied about an average one-quarter of the year-to-year growth of the core ICT labour force during the later half of the 1990s and the “dot.com” bubble. From an estimated 180,000 H-1Bs in 1990, there are an estimated 500,000 in 2001, and over 800,000 are projected by 2003 (Lowell 1999). Nearly half of these workers are now coming from India.

The other traditional countries of immigration, Canada and Australia, have rapidly adjusted their existing open policies to attract ICT workers. Indeed, research demonstrates that the three countries compete for highly skilled workers, with the United States tending to win out: each

skilled immigrant admitted into the United States reduces the share of skilled intake by the other two (Cobb-Clark 1997). While no research establishes that there is a global competition for ICT workers beyond the three traditional countries of immigration, it is easily inferred from the flurry of recent admission policy changes in developed countries as can be seen in Table 4.

Table 4. Recruitment of international migrants: Selected policy examples

Policy	Description
Malaysian skilled worker program	Malaysia plans to attract 5,000 skilled workers a year as part of their “knowledge-economy master plan” for 2001 as announced by Prime Minister Datuk Seri Dr Mahathir Mohamad (Wong 2000).
South Africa loosening restrictions	President Thabo Mbeki recently announced plans to make immigration laws less restrictive, hoping to address the difficulty of getting short-term work permits for skilled foreign workers. Already, in 1998 a program placed 404 Cuban doctors in rural clinics and hospitals (Chenault 1998; Agence France Presse 2001).
USA skilled temporary visas	Hot growth for information technology jobs helped fuel demand for temporary “H-1B” visas. The U.S. Congress responded by increasing the numerical cap from 65,000 in 1992, to 115,000 in 1998, to 195,000 in 2000. Employers must sponsor these skilled workers who stay for up to 6 years.
Canadian permanent skilled worker targets	In the 1990s, Canada raised the number of immigrants and those admitted for skills to more than half the inflow. Now it plans to target skilled immigrants workers from China, India, Pakistan, Philippines and South Korea, increasing the intake by 4.4 percent through 2002 (Batcho 2001)
Australian permanent skilled worker targets	Australia’s Migration 2001 program has set aside 76,000 places for these skilled migrants who qualify; and increases the “skill stream” by 5,000 persons. Most are admitted on points for education or talents, a smaller number for employer recruitment.
Australian temporary medical workers	With difficulties finding a sufficient number of doctors, Australia addresses the problem by granting temporary work visas to doctors trained overseas in to work in “areas of need.”
German temporary ICT “green cards”	Germany announced in 2000 that it would grant up to 30,000 special work visas to foreign information, communication, and technology (ICT) specialists. Workers from India are sought, although thus far a small number of Eastern Europeans have applied (Islam 2000).

European Commission President Prodi has called for up to 1.7 million immigrants to fill an EU-wide labour shortage through a system similar to the US “green card” for “qualified immigrants” (AFX 2001). This, of course, refers to the large problem of the population aging of the Western nations and the implied future shortage of workers. Thus far, most of the policy innovations have targeted temporary workers, despite the misuse of the “green card” analogy that in the United States refers strictly to permanent citizenship-track admissions. For example, Germany’s “green card” initiative to attract up to 30,000 ICT workers permits a stay of only up to 5 years in duration.

Or course, “temporary” admissions may be preferred from the source countries point of view because the return requirements offset the brain drain (see discussion above). In fact, most observers who dismiss the problem of brain drain point out that a large share of those who move abroad end up returning to their country of origin after all. In the case of the U.S. H-1B visa; however, it is estimated that fewer than half will ultimately return to their country of origin, with most remaining permanently in the United States (Lowell 2001). Thus, there is some controversy that source countries will experience shortages as their most educated workers go to the United States and stay. Perhaps more than any other single development in the past decade, the global ICT competition and increasing flow of these workers to the U.S. and Western Europe has again raised concerns about the brain drain.

And the issue is unlikely to stop with just the ICT industry. Developing countries experience shortages across a range of highly skilled occupations. There is now a shortage of teachers with increasing “millennium generation” cohorts of students entering primary and secondary schools in many developed Western nations. Britain has been criticized for poaching teachers from South Africa, as well as looking to Australia and New Zealand to fill the gaps. South Africa’s education minister accused Britain of “raiding” his country with mass recruitment drives by London schools in South Africa (Smithers and McGreal 2001).² Britain recruits teachers at a salary of four times what they earn in South Africa. At least in this instance, it is argued that South Africa is able to, and may benefit from, supplying teachers to Britain, but a government-to-government consultation may have reduced the perceptions of poaching and led to beneficial arrangements for both countries.³ A similar tale could be told in several countries.

The medical field is another area that faces chronic shortages, particularly to meet the demands of an aging population, as well as in rural and inner city settings. Australia seeks to remedy this problem by granting temporary work visas to doctors trained overseas in an effort to fill “areas of need”—doctors to work in rural areas, urban hospitals and “locum services.” Australian doctors, whose numbers have declined due to deliberate effort of the Australian government to restrict domestic growth, choose more upscale clientele. Thus, the importation of foreign doctors backfills shortages created by policy missteps, but is a good example of how receiving countries can use immigration to fill specific knowledge gaps.

There is lively reporting in the press about the brain drain issue in South Africa. It reports, for instance, that a skilled worker shortage will affect South Africa’s ability to fulfil economic growth targets over the next three to five years. A report by Corporate Services shows that the shortage of managerial and technical staff is between 350,000 and 500,000 (Africa News 2000). There are reports that foreign investment is not attracted to South Africa because of a shortage of skilled professionals in engineering and medicine that is compounded by the difficulty of getting short-term work permits for skilled foreign workers. One solution is to loosen admission requirements or as one of President Thabo Mbeki ministers recently remarked, “South Africa would like to attract Indian teachers and Russian scientists to work in the country to make up for shortages of skilled labour” (Agence France Presse 2001).⁴

6. Reparation for Loss of Human Capital (Tax)

Reparation for the loss of emigrants is not a new idea. There have been attempts to directly recapture some of the value of emigration. A few countries have attempted to mandate that a certain percent of the earnings of their workers abroad be deposited into a national fund. Only Korea, which ran contracted temporary labour programs for low to skilled workers in the Middle East in the 1970s, succeeded. Mandatory earmarking of remittances has failed in the Philippines, Pakistan, Thailand, and Bangladesh (Puris and Rizema. 1999). Of course, this raises the question of whether or not source countries can successfully earmark funds out of market-regulated international mobility, be it low or high skilled.

Table 5. Reparation for loss of human capital (tax)

Policy	Description
Expatriate tax schemes	Tax schemes were developed in the 1970s, but never implemented, to recompense the source countries. Either the receiving country would directly pay the source country, or tax the immigrant and pool those taxes with the United Nations, or the source country is encouraged to tax its expatriates.

At the same time, brain drain taxes were a favourite economic prescription in the 1970s, i.e., a tax to deal with externalities to developing country created by transfers of human capital abroad. The brain drain issue was introduced into United Nations debate in the late 1960s and by the 1970s the tax was seen by international bodies as one possible course of action to be discussed. It also generated a small literature by economists who debated the proper way to implement such a tax.

The leading proponent and the acknowledged father of most of the academic brain drain literature is the well-known U.S. trade economist, Jagdish Bhagwati. He put forth two initial proposals (Bhagwati 1976). The “windfall profits” or increased income of emigrants themselves could be taxed at some rate greater than their normal income tax rate in the receiving country which, in turn, would be shared “en bloc” for the purpose of development spending in developing countries. It could also be presumed that the receiving country profits from highly skilled immigration and that, in turn, the immigrant should be taxed at a normal rate and the rich country would “share the revenue” with the source country. As a point of departure, such a tax might be levied on receiving countries for highly skilled migrants and collected for a period of years (say 10). Estimates in 1972, for example, were that US\$750 million in revenues could be raised and made available to the United Nations to be used for development purposes.

There are several pitfalls with the proposed brain drain tax (Straubhaar 2000). As an economic device its logic derives from the result that the direct impact of a brain drain is to reduce economic growth. But this is complicated by the fact that there is no easy way to determine how large such a tax should be. The models on which it is based fail to take into account the feedback loops that brain drain sets in play, e.g., the amount of gain to the receiving country; the possibility of return by permanent emigrants, or the more certain return by temporary migrants,

with associated improvements in skills and knowledge; or the impact of worker monetary remittances home.

What is more, there is no direct fiscal motivation other than to redress the cost to the source country. Problems in estimating the amount of tax are related to the unknown difference between the actual versus an optimal level of emigration, justification for emigrant taxes based upon the degree to which emigrants earn more than others for their skills in the receiving country, or knotty issues of redistribution of the tax to those affected by the brain drain in the first place. Its hard to see how this idea can gain much traction in the real world as it faces tough problems such as the imprecision inherent in estimating an appropriate fee, or the hard-headed realities of turning the funds into meaningful development.

However, in the next iteration of thinking on the tax it became clear that the emigration of the highly skilled in many respects is but one aspect of the total international flow of all migration. Under international law a country can tax the income of its expatriates abroad as long as they retain its citizenship. The U.S., for example, regularly taxes its citizens abroad. However, developing countries have largely inherited the tax systems of their excolonial powers that levied taxes on residence not citizenship per se. Bhagwati (1976) also advocated that developing countries, therefore, adopt citizenship as a bases for taxation and that they tax their citizens abroad regardless of skill levels. Such an approach is more direct and fully within the legal right of the developing country with no need to involve migrant receiving countries or interlocutors such as the United Nations to manage development funds.

7. Resourcing Expatriates: “Diaspora Options”

Resourcing highly skilled emigrants has to with a shift in strategy that seeks to benefit from expatriate populations, a nation’s diaspora (Kaplan 1997). Much of this happens on its own as there is a natural proclivity for emigrants to maintain ties to the home and this backward connection, these ties through human and financial networks, return emigrants’ non-physical knowledge and investments to their source country. Whether emigrants are permanent or a short-to-medium term temporary loss, their backward linkages to their source country may offer significant benefits. As a set of policies, diaspora options do not have to aver the idea of return, but they are not reliant on return.

Table 6. Resourcing expatriates: Selected “Diaspora options”

Policy	Description
UNDP expatriate networks	The United Nations Development Program pairs expatriates with particular skills with suitable projects that range from a few weeks to months. Governments provide assistance to expatriates during their stay; it is more cost effective than hiring outside consultants.
Thai Reverse Brain Drain Project	The Thai Reverse Brain Drain Project (RBD) facilitates technical linkages between institutions and Thais living overseas to collaborate in mission-oriented projects. Serves as a coordinating information centre, including an internet bulletin board exchange (see http://rbd.nstda.or.th/).
Indian remittance backed bonds	The Indian government solicits its professional expatriates to invest in remittance-backed Indian bonds. The bonds are offered by Indian banks that fund them based upon future receipt of remittances (Orozco 2000).
Foreign currency accounts	Many countries permit their expatriates to save their earnings at home in foreign currency accounts; i.e., most often the more stable currency of the developed country where they work or U.S. dollars (Orozco 2000).

We review two general means of benefiting from a diaspora. Some of the backward linkage is counted in monetary remittances, some it in less easily measured exchange of knowledge or “the transfer of technology” (Bhagwati 1977). The latter has to do with the establishment of ongoing contact between source country academic and private sector institutions, fostered by drawing upon networks of intellectuals and scientists.

7.1. Expatriate organizations / technology transfer.

During the 1990s, there appears to have been a notable increase in the number of expatriate or “home organizations” that connect a country’s emigrants living abroad. One paper identifies 41 expatriate organizations that were founded in the past decade with membership in a variety of receiving nations. Apparently, most were founded during autonomously, they began spontaneously and independently of each other (Brown 2000). One suspects the true number is something greater.

The Internet has been core to an apparent growth and intensity of expatriate organizations: of the 41 known organizations “all have a website, . as well as an on-line registration form (Brown 2000, p. 5).” As of 1998, there were on average 1.6 Internet users for every 100 citizens in the world, compared with usage rates among citizens in just the developed portion of between 10 and 20 percent or better. Clearly, there is a digital divide and developing countries require infrastructure development and knowledge to develop the potential of the Internet revolution (Slowinski 1998).

Expatriate or home organizations of the highly skilled are on the leading edge in helping to extend internet and information literacy, as well knowledge and productivity in developing country economies. Almost all of the 41 organizations members have completed a Masters or Doctoral degree. There is a:

latency of skilled labour *circulation*—both in the traditional *physical* form, as well as the *virtual* mode—and the mechanism to tap its fluidity and power is enhanced by unprecedented and profound developments in information and communication technologies (ICT) (Teferra 2000, p.3).

Fifteen of the 41 home organizations were established with the goal of mobilizing highly skilled expatriates to return some of their knowledge through an open exchange. Pride of home is often a compelling reason to join. Not all members of these networks are necessarily from the country of origin, indeed, still non-national often join. For example, 7 percent of the Colombian “Caldas” network is not Colombian. All consider themselves independent with no affiliation. A few have links to government agencies in Education, or science and Technology.

The exchange can play a significant part in recapturing some of expatriates’ new expertise, transferring knowledge and technology to the developing source country. There are at least five types of home organization: (1) student/scholarly networks, (2) local associations of skilled expatriates, (3) expert pool assistance through the Transfer of Knowledge Through Expatriate Nationals (TOKTEN) program of the UNDP, (4) developing intellectual/scientific diaspora networks, and (5) intellectual/scientific diaspora networks (Brown 2000).

These types of organizations carry on communication within the expatriate community and back to the source country. A recent IOM Conference on Migrants’ Development of Country of Origin issued a statement that countries can benefit and develop by using the knowledge of expatriates or emigrants without actually creating an expatriation program. The Scientific Coordinator of Conference suggested migration and immigration policies should be open and that spontaneous feedback/transfers boost economic development and, ultimately, inhibits migration. At the level of multinational business, many firms are globalising their operations by using communication links to supplement U.S./Euro-based operations. These carry on technology exchange internal to their conduct of business and to their production in developing countries, but the degree of spill-over to the domestic economy may be limited by proprietary protections.

Indeed, few, perhaps too few, home organizations take advantage of connections back to home government institutions, and apparently none find any support in the host country (Brown 2000). Those with institutional affiliations and support from international organizations or the home government may be best able to meet their goals. Technological innovation in developing countries is difficult, only partly because of lack of e-infrastructure. To benefit from technology transfer it is important that the nature of the exchange comprise appropriate technology that uses local material and human resources. Technology transfer should be economically, socially and technically competitive if it is to have a significant effect. It can be argued that it needs patience, persuasive skill and the continuous support of those with financial and administrative power (Adotevi 1998).

However it is fostered, the mantra of “technology transfer” is an integral part of diaspora policy. It boosts source country productivity, provides resources for economic development, stimulates higher education and business, helps develop two-way trade, and makes the countries involved in the exchange more stable and valuable long-term partners. The way in which the internet and

expatriate organizations function parallels technology transfer in other settings: consider formal programs for University R&D transfer to private industry, or technology transfer to rural settings, or space technology to the private sector in the United States (Rochester University Office of Technology Transfer 2001; USDOA 2001; NASA 2001).

These transfer programs are operated in non-profit and for profit modes alike for the ultimate purpose of enriching its market or research environment and increasing the size of its market. They depend upon a variety of agreements with transferees and work in multiple configurations, but they have concrete plans and methods. Likewise, the stated goal of the government backed Thai Reverse Brain Drain Project (RBD) is not simply to facilitate discussion, but to concretely serve as a clearinghouse for the dissemination of technical, often engineering, and other scientific knowledge. It seeks to create collaboration between expatriates with domestic individual and institutional partners.

7.2. Remittances and monetary flows.

Another diaspora option that can generate downstream growth is the remittances of expatriates. An estimated 75 billion in remittances were sent back to migrant-sending countries in the mid-1990s, although what proportion was sent by highly skilled emigrants is unknown. Suggestive research indicates that education tends to reduce the likelihood that a worker abroad remits (Lowell and de la Garza 2001). At the same time, the story may not be quite that simple. Recent economic thinking is that each dollar remitted has a multiplier effect on increases in GDP. And there may be unique attributes of the remitting behaviour of highly skilled emigrants. Highly skilled emigrants earn more and when they do remit they may well remit larger amounts. Larger sums of money permit a wider range of expenditures at home and a greater level of expenditure on the goods that generate multiplier effects throughout the economy.

Yet, there are market mechanisms that may offer alternatives to capture and enhance the value of high skilled remittances. Compared with oftentimes “unbanked” low-skilled emigrants, the highly educated are likely to use banks and to have savings accounts. Thus, the remittances of the highly skilled may flow through the formal banking sector and be associated with higher rates of savings and interest income. Credit ratings and access to loans become possible. Some countries offer migrants Foreign Currency Accounts: permitting migrant workers to hold foreign-currency accounts in domestic banks not subject to foreign exchange regulations (Puris and Rizema 1999). In India and Pakistan interest rates are maintained on these accounts at levels that are higher than on domestic or Euro-currency deposits. Premium exchange rates may be offered.

Further, highly skilled workers may be more likely to invest in their home country. While not technically remittances per se, one special example should be noted here; an investment that expresses some of the same motivations that drive remittances. For example, the Indian government spends time in the United States and elsewhere urging its professional emigrants to invest in Indian remittance-backed bonds (Orozco 2000). Banks that receive large amounts of wire transfers from workers and companies abroad issue the bonds. The remittance monies may also be part of banks’ check cashing or money order business. Indian banks market the remittance bonds and they are capitalized on the future flow of remittance monies back to India. Such investment vehicles tend to be the preserve of highly skilled emigrants.

Another set of practices aims to influence the remittances or the skills that return migrants bring. Incentives are created for migrants abroad to spend remittances on job creating investments. Tariffs may be reduced for migrants abroad (or return migrants) on the importation of machinery and equipment to establish microenterprises. Other programs encourage the entrepreneurial proclivities of return migrants (Lowell and de la Garza 2000). These approaches are uniquely suited to benefiting from highly educated expatriates, using their financial and knowledge resources.

8. Retention through Educational Sector Policies

Retention policies are followed in many developed and developing settings. Referred to here are “non-immigration” policies, e.g., increased investment in education or improvements in academic or public sector salaries, institution strengthening, etc. Many of the expatriate organizations just reviewed are tightly associated with academic settings and many are part of an overall retention plan, e.g., by improving the overall research environment academic institutions in migrant-source countries create opportunities that help retain would-be-emigrants from going abroad.

Table 7. Retention through educational sector policies: Selected policy examples

Policy	Description
Indian university budget increases	The National Association of Software and Services Companies (Nasscom) proposes setting up information technology-focused universities or courses throughout the country to meet the forecast demand for information technology workers in India. (Asia Pulse 2001)
UK loan forgiveness	Britain attempts to retain teachers educated in country by writing off student loans of graduates who enter the teaching profession. (Smithers and McGreal 2001)
German foreign academic scholarships	Germany provides scholarships to foreign scientists who establish research groups in Germany, for the purpose of preventing the loss of German postdoctoral scientists. The Kosmos Award, a prize of DM 750,000 is given to establish a group of young researchers in Germany (Metzke 2001)

The topic of tertiary education is in and of itself too large to adequately cover here, but the support and development of higher institutions of education is certainly one of the best ways to offset brain drain. It is an obvious means of accumulating human capital and boosting economic growth in developing countries. Limited economic research comes to conflicting conclusions about the value of emphasizing primary/secondary or tertiary education to be effective in offsetting brain drain. Source countries that improve their secondary or tertiary educational institutions may unwittingly increase the rate of loss as their nationals are better prepared to compete in better paying industrial and information economies (Haque and Kahn 1997; Haque and Kim 1995).

Still, human resource development is one of the keys to economic development and policies that strengthen educational institutions will have a beneficial long-term impact. Cooperative ventures are, perhaps, some of the more policy-relevant tools available (Smallwood and Maliyamkono 1996). Many international institutions are involved in the management and improvement of tertiary educational institutions: UNESCO has an Education office that works at all levels of education (UNESCO 2001). The World Bank, likewise, has a program on “Tertiary Education” (World Bank 2001). Numerous institutions are involved in research in this area as well (see CIHE 2001).

Table 7 shows that there may be a number of policy options. Just mentioned is the general task of improving educational capacity, but this may be done in specific ways. Targeted research grants and cross-national project teams can facilitate specific flows of knowledge and they may or may not target particular expatriate groups. Tying return requirements to government-funded student stipends is another well-known means of recapturing some of the experience and training of the college educated.

9. Retention through Economic Development

Retention of would-be or return emigrants over the longer term is most likely when the differences in economic opportunities and employment conditions between developing and developed countries lessen. Of course, the very concern of “brain drain” is that it will slow economic development, although as we have seen thus far there are many ways in which a loss of highly educated workers can actually rebound in a source country’s favour. In the very short run rapid development may create a class of would-be emigrants seeking higher education who, for the first time, are prepared for and able to afford that choice. Brain drain can be accelerated by rapid development in the short term. Over the longer run, economic development is the best means of reducing outflows of people and maximizing inflows of knowledge.

Some developing nations are looking for targeted projects for economic development, ways in which they can capitalize on information technologies and globalisation that take advantage of highly educated workers.

Singapore’s Prime Minister Goh Chok tong has recommended an Asian ICT Belt at a recent ASEAN summit (Association of Southeast Asian Nations). ASEAN heads of state signed the e-ASEAN Framework Agreement that sets out a plan to speed up economic integration through the Internet. There is discussion of the creation of a regional ICT environment to reverse the region’s brain drain, to hold on to available workers in the face of a regional shortage for ICT workers. The recommendation is to create an Asian ICT belt to link Asian IT hubs and attract global companies while retaining Asia’s professionals (Xinhua General News Service 2001).

Table 8. Retention through economic development: Selected policy examples

Policy	Description
Indian non-profit website information	The National Association of Software and Services Companies (Nasscom), a not-for-profit organization, though a website provides information about companies and the industry. A chief goal is growth in education, employment, entrepreneurship and the economy in India (www.nasscom.org)
Malaysian ICT initiative	Malaysia's Budget 2001 is structured to lead to globalisation and the liberalization of the e-economy through tax and other incentives for the information communication technology industry (Hamid 2000).
Philippine centre for technology	Philippine's "Investment Priorities Plan" seeks to attract foreign investment and domestic employment at its Virtual Centre for Technology Innovation, a project of the Department of Sciences and Technology and the Information Technology Foundation of the Philippines (Businessworld 2000)
Indian expatriate investment outreach	Indian universities are soliciting former graduates and entrepreneurs to establish more programs at the university to prevent graduates from leaving. Entrepreneurs are also being asked to invest in Indian-based "dot.coms" (Dugger 2000 and Ghosh 2000)

Malaysia's Budget 2001 is structured to lead to globalisation, liberalization and an e-economy through incentives for the information communication technology industry (Hamid 2000).⁵ The budget aims to use tax relief, loans for civil servants, incentives for additional study and the purchase of computers to increase the quality of life and overall retention of educated professionals. The government also hopes to give special incentives to government employees, such as applying for loans for personal computers or using their "Employee Provident Fund" to purchase computers, as well as giving tax-exemptions to companies that give computers to their employees. Budget 2001 has policy objectives that aim to enhance, improve and uplift the country's competitiveness employing research, training, and individual computer ownership (Kaur 2000).

The appendixes present summary information on regional discussions and agreements to advance development using educational, technological, and migration policy tools: the Malaysian Multimedia Super Corridor (MSC); the Pacific Economic Cooperation Council (PECC) of 1999; the e-ASEAN Framework Agreement: Fourth ASEAN Informal Summit; and the West African Migration and Development Plans: Dakar Declaration. By targeting Internet and communications technologies, both in terms of infrastructure development and as an industrial growth sector, these projects target entry into the information age. By advocating more open migration policies, they explicitly accept the proposition that market-driven high skilled mobility is in the region's favour.

10. Conclusions

The international mobility of highly skilled workers presents developing countries with a serious challenge. Economic theory and available research suggest that the direct impact of a brain drain, that is a sizable loss of highly educated natives abroad, represents a reduction in the accumulation of human capital or knowledge (Lowell 2001). Such losses are greater than the simple loss of investment in educating the emigrants in the first place and the immediate result is a reduction in economic growth of developing countries. On the other hand, industrialized, developed nations stand to gain from the immigration of highly skilled workers, it adds to their accumulation of human capital and knowledge (Straubhaar 2000).

Understandably, it is rare that policymakers in developed economies express much concern. Many policymakers in developing countries also frequently observe, correctly, that the brain drain can generate feedback effects that will, on balance, yield positive economic gains for the migrant source countries. Indeed, the bulk of the policy literature is uncomfortable with the term brain drain and prefers terms such as “brain gain” or “brain circulation.” These terms belie an assumption that developing country expatriates return back home, carrying their enhanced experience and productivity with them. Clearly, to the extent that flows are circular in nature, consisting of either permanent or temporary movements, high skilled mobility generates constant upgrading of the knowledge available.

Whether a brain drain reduces sending country growth depends upon the degree to which its direct negative effects are offset by favourable economic and migratory feedback effects. In the first place, there is the notion that there may be an optimal level of emigration or a “beneficial brain drain.” In some economic models there is a right level of highly skilled emigration that triggers favourable outcomes. These models assume that if individuals in developing countries have the possibility of emigrating abroad, they may pursue higher education in the hopes of realizing such an opportunity. Empirical analysis offers some support for these theoretical expectations (Beine et al. 1999; Mountford 1997). This is a promising line of thought because if there is an optimal level of emigration that stimulates the pursuit of higher education in source countries, and spurs economic growth, then governments should choose to take advantage of high skilled emigration.

It should be clear from the review undertaken here, furthermore, that an indirect consequence of high skilled emigration is the generation of multiple feedback effects: these tend to have positive impacts and may readily offset the direct negative impact of brain drain. The various feedback effects include the return of out migrants with enhanced experience and knowledge, the knowledge/technology transfer of expatriates who remain abroad, monetary remittances of expatriates, and increased trade opportunities between developing and developed economies. These are potentially powerful ways of capitalizing on the more-or-less natural consequences of the international mobility of highly educated workers.

This review has shown a number of ways in which policymakers can facilitate feedback effects and, thereby, take advantage of high skilled emigration. The direct adverse effects of a brain drain through its various feedback possibilities can, potentially, be turned into a net positive for

migrant source countries. Policymakers can bolster backward linkages or expatriate networks, create financial opportunities such as remittance backed bonds, and create immigration policies that facilitate back and forth movement between developing and developed nations: the net effect of which can be positive economic growth for all parties.

Policy responses to a brain drain were presented as “Six Rs.” A darling of the 1970s, *reparation* for the direct loss through a brain drain tax has long since been disregarded as a viable way of offsetting the adverse effects of high skilled emigration. Indeed, it presents nearly insolvable problems in terms of estimating the appropriate amount of such a tax, involving both sending and receiving countries, identifying a reliable interlocutor for pooled development funds, and implementing meaningful development. Perhaps, developing or migrant source countries may wish to consider the option of taxing their citizens abroad as one way or benefiting from all of their migrants abroad regardless of skill levels.

Three of the “Rs” are variants of migration policy, e.g. *return, restriction, or recruitment*. Restrictive admission (or exit) policies touch on the rights of the individual international migrant and quickly fall prey to ethical and political quandaries, as well as run the serious risk of actually impeding the positive feedback effects of high skilled emigration. Facilitating movement should be the name of the game. Harmonized policy regimes, think expanded GATS, etc., are a step in the right direction insofar as they establish rules of the game that over the long run create consistency and transparency.

Policies that stimulate return may have the greatest immediate impact on offsetting brain drain. The developing source country recoups its initial investment in the migrant, as well as benefits through an accumulation of its human capital, the improvement of available knowledge, and continued feeder effects from the establishment of network ties to developed economies. In the last few years, developing countries have increased their competition, through more open admission policies, for highly educated workers from developing nations. Policies that encourage return migration may be in the best long-term interest of the migrant source countries, but almost no policymakers in receiving countries as yet justify temporary admission standards on such a basis.

For those who remain abroad, there are *resourcing* policies. These “diaspora options” rely mainly on the creation of expatriate networks that return knowledge to the home country, e.g., that facilitate the transfer of technology. Academic and private sector initiatives can stimulate cooperative ventures between expatriate individuals, and the institutions they represent. Further, remittances are a significant source of income for developing countries. There are several ways of benefiting from the unique attributes of highly educated emigrants in this regard. Outreach to skilled expatriates can take advantage of the greater likelihood that they will save in foreign currency accounts in the home country, invest in remittance backed bonds, or invest in entrepreneurial activities when incentives such as reduced tariffs or income tax breaks are offered.

Finally, grand policies of *retention* are likely to be the best long run response to a brain drain. The most active policies have and continue to be academic ventures based on regional and international cooperation. The international movement of scholars and researchers is facilitated,

and collaborative ventures are encouraged. These create a more viable research environment and opportunities that encourage would-be emigrants to stay. They also bolster the accumulation of human capital with resulting positive impacts on economic development. In recent years many developing countries have individually, or in the context of regional accords, targeted ICT development as means of getting on the information-age bandwagon. Such projects promise to be a fruitful way of stimulating economic growth and reducing permanent out migration of highly educated natives.

References

- Adotevi, F.J.K., 1998. 'Science Communication for the Next Millennium: Report of the Ninth International Conference of Science Editors,' *Bellagio Publishing Newsletter*, October, Number 23. http://www.bc.edu/bc_org/avp/soe/cihe/bell/newsletters/News23/article6.htm
- Africa News, 2000. 'Africa-at-Large; Can Africa's Brain Drain Be Stemmed?: UN Economic Commission for Africa,' *Africa News*; February 17, News, Documents & Commentary Section.
- Africa News, 2000. 'South Africa Faces Skilled Labour Shortages,' *Africa News*; April 13, News, Documents & Commentary Section.
- AFX European Focus, 2001. 'EU's Needs Immigration to Fill 1.7 Million Skill Shortage,' *AFX European Focus*, February 7, Economic News, Company News, Section.
- Agence France Presse, 2001. 'S. Africa Keen on Indian Teachers and Russian Scientists' *Agence France Presse*, February 12, International News Section.
- Aleinikoff, T. Alexander and Douglas Klusmeyer, 2001. *Citizenship Today: Global Perspectives And Practices*, Washington, D.C.: Carnegie Endowment for International Peace.
- Asia Pulse, 2001, 'Nasscom Projects 370,000 IT Workforce Required in India by 2008,' *Asia Pulse*, February 9; Nationwide Financial News Section.
- Batcho, Stefanie, 'Canada Hopes to Further Boost Immigrant Numbers in Coming Years' *Agence France Presse*, February 9, 2001; Financial
- Beine, Michel, Frederic Docquier, and Hillel Rapoport, 1999. *Brain Drain and Economic Growth: Theory and Evidence*, Seminar par l' Axe Ethique et development durable du Centre d'Economie et d'Ethique pour l'Environnement et le Developpement, Universite de Versailles St Quentin en Yvelines (http://www.cybercable.tm.fr/~jarmah/public_html/Hrapoport11.htm).
- Belfast Telegraph, 1999. 'New Moves to End Brain Drain,' *Belfast Telegraph*, December 17.
- Bhagwati, Jagdish, 1976. 'The Brain Drain,' *International Social Science Journal*, 28, 691-729.
- Bhagwati, Jagdish, 1977. *The Reverse Transfer of Technology (Brain Drain): International Resource Flow Accounting, Compensation, Taxation and Related Policy Proposals*, United Nations Conference on Trade and Development.
- Boey, Stephen, 2000. 'Use Net Job Postings to Reverse Brain Drain,' *Business Times* (Malaysia), April 5; *Nation Section*, p. 2
- Brown, Mercy, 2000. *Using the Intellectual Diaspora to Reverse the Brain Drain: Some Useful Examples*, University of Cape Town, South Africa.

Businessworld, 2000. 'Better Education, Higher Pay Sought for IT Professionals,' *Businessworld* (Philippines), August 3.

Carrington, William J. and Enrica Detragiache, 1999. 'How Extensive is the Brain Drain?' *Finance and Development*, 36(2), <http://www.imf.org/external/pubs/ft/fandd/06/carringt.htm>.

Chenault, Kathy, 1998. 'Cuban Doctors Helping Fill Void Left by South African Emigrants,' *The Dallas Morning News*; December 16, p. 17A.

CIHE (Center for International Higher Education), 2001. School of Education, Boston College, Massachusetts, http://www.bc.edu/bc_org/avp/soe/cihe/.

Hamid, Hamisah, 2000. 'Budget 2001 A Boon to Workers,' *Business Times* (Malaysia), November 2, Human Resource Section, p. 4.

Haque, Nadeem Ul and Se-Jik Kim, 1995. 'Human Capital Flight: Impact of Migration on Income and Growth,' *IMF Staff Papers*, 42(3), 577-607.

Haque, Nadeem Ul and M. Ali Kahn. 1997. 'Institutional Development: Skill Transference Through a Reversal of 'Human Capital Flight' or Technical Assistance,' *Working Paper of the International Monetary Fund*, July.

Hong, Carolyn, 2000. 'Wooing Them Home,' *New Straits Times* (Malaysia) August 29, p. 1

Islam, Shada, 'e-Europe Seeks out Skilled Workers,' *Business Times* (Singapore), March 24, 2000; World News, p. 21

Japan Economic Newswire, 1999. 'Brain Drain No Long a Problem for Asian Countries,' *Japan Economic Newswire*, October 22, 1999

Johnson, Jean M. and Mark C. Regets, 1998. 'International Mobility of Scientists and Engineers to the U.S.: Brain Drain or Brain Circulation?' *National Science Foundation Issue Brief*, 98(316).

Kaplan, D., 1997. 'Reversing the Brain Drain: The Case for Utilizing South Africa's Unique Intellectual Diaspora,' *Science, Technology, and Society*, 2(2).

Kaur, Hardev, 2000. 'Toward a New, Knowledgeable, Competitive Malaysia,' *Business Times* (Malaysia), October 30, Trend Notes, p. 6.

Lowell, B. Lindsay, 1999. 'Skilled Temporary and Permanent Immigration to the United States,' in *Research on Immigration and Integration in the Metropolis*, <http://riim.metropolis.globalx.net/Virtual%20Library/1999/wp99S2.pdf>, January.

Lowell, B. Lindsay and Rodolfo de la Garza, 2000. *The Developmental Role of Remittances In U.S. Latino Communities And In Latin American Countries*, the Tomás Rivera Policy Institute, Los Angeles and the Inter-American Dialogue, Washington D.C.

Lowell, B. Lindsay, 2001. *Some Developmental Effects of the International Migration of the Highly Skilled*, Paper for the International Labour Organization, Geneva.

Meyer, et al. 1997. 'Turning Brain Gain into Brain Gain: The Colombian Experience of the Diaspora Option,' *Science, Technology, and Society*, 2(2).

Mountford, A. 1997. 'Can a Brain Drain be Good for Growth in the Source Economy?' *Journal of Development Economics*, 53(2), 287-303.

NASA (NASA Johnson Space Center), 2001. Office of Technology Transfer and Commercialisation, <http://technology.jsc.nasa.gov/index.htm>.

Orozco, Manuel, 2000. *A report of the Tomas Rivera Policy Institute (TRPI) and the Inter-American Dialogue (IAD)*, Los Angeles and Washington, D.C.

Puris, Shivani and Tineke Rizema. 1999. *Migrant Worker Remittances, Micro-Finance and the Informal Economy: Prospects and Issues*. International Labour Organization, Working Paper 21.

Rochester University Office of Technology Transfer, 2001. <http://www.cc.rochester.edu/ott/>

Slowinski, Joseph, 1998. 'Potential of the Internet—Developments in Connectivity,' *Bellagio Publishing Newsletter*, December, Number 2, pages 1-2.
http://www.bc.edu/bc_org/soe/cihe/bell/newsletters/new24/article10.htm.

Smallwood, Anthony and T.L. Malyiamkono, 1996. "Regional Cooperation and Mobility in Higher Education: The Implications for Human Resource Development in Sub-Saharan Africa and the Relevance of Recent Initiatives in Europe." In Peggy Blumenthal, Crauford Goodwin, Alan Smith, and Ulrich Teichler (eds.) *Academic Mobility in a Changing World*, Bristol: Jessica Kingsley Publishers.

Smithers, Rebecca and Chris McGeal, 2001. 'Raid on South African Teachers,' *The Guardian*, February 16.

Straubhaar, Thomas and Martin Wolburg. 1998. *Brain Drain and Brain Gain in Europe: An Evaluation of East-European Migration to Germany*, CIIP and Institute for Global Conflict and Cooperation.

Straubhaar, Thomas. 2000. 'International Mobility of the Highly Skilled: Brain Gain, Brain Drain or Brain Exchange,' *HWWA Discussion Paper* No. 88, Hamburg, ISSN 1432-4458.

Taylor, Edward J. and I. Adleman. 1995. *Village Economies: The Design, Estimation and Use of Village-Wide Economic Models*, New York: Cambridge Press.

Teferra, Damtew. 2000. *Revisiting the Brain Mobility Doctrine in the Information Ages*, Center for International Higher Education, Boston College, <http://www2.bc.edu/~teferra>.

UNESCO (United Nations Educational, Scientific and Cultural Organization), 2001. *Education News*, <http://www.unesco.org/education/>

USDOA (U.S. Department of Agriculture), 2001. Agricultural Research Service: Office of Technology Transfer, <http://ott.arsuda.gov>.

Van Slambrouck, Paul, 1999. 'Give Me Your Huddled Masses, Er, Geniuses,' *Christian Science Monitor*, August 27, p. 3

Verhaal, Cameron, 2001. *The Effects of High Skilled Mexican Migration to the United States: Is Mexico Experiencing a Brain Drain?* Class paper Political Economy of Latin America, Latin American Studies, Georgetown University.

Wocke, Alber and Saul Klein, 2000. 'SA needs to attract, not deter, skilled foreign labour,' *Business Day* (South Africa); October 18, Opinions and Analysis Section, p. 14

Wong, Douglas, 2000. 'Mahathir Plans Brain Gain of 5,000 Skilled Workers a Year,' *The Straits Times* (Singapore), March 9, p. 30

World Bank, 2001. Tertiary Education, The World Bank Group, <http://www1.worldbank.org/education/tertiary>.

Xinhua General News Service, 2001. 'Asia Needs to Cooperate to Reverse IT Brain Drain,' *Xinhua General News Service*, January 14, World News—Los Angeles.

Appendix 1.

The Malaysian Multimedia Super Corridor (MSC)

The Multimedia Super Corridor (MSC) is part of Malaysia's series of five-year plans leading to "Vision 2020." Vision 2020 is Prime Minister Dato' Seri Dr Mahathir Mohamad's challenge to Malaysia to achieve a dynamic country that is technically advanced with citizens who have productive jobs for the economy and companies that further the country's goals. Malaysia expects that the change in our global economy into one in which knowledge and information are paramount will allow those persons, businesses, and countries, to prosper if they actively participate in the information age.

The MSC encompasses two important elements, the physical and the practical. Physically, the MSC is a "corridor," 15 kilometres wide and 50 kilometres long that starts from world's tallest buildings and runs south to the area's largest international airport, the Kuala Lumpur International Airport (KLIA). In addition, two of the world's first "Smart Cities" are being developed in the Corridor: Putrajaya, the new government and administrative capital of Malaysia (where the "electronic government" will be introduced); and Cyberjaya, an "intelligent city" with multimedia industries, R&D centres, a Multimedia University, and space for multinational corporations to build operational headquarters to use in direct worldwide manufacturing and trading activities that involve multimedia technology.

Practically, the MSC will encompass various investment, business, R&D, and lifestyle options. It will attract world-class technology-led companies to Malaysia, as well as develop local industries. It will include multimedia-specific capabilities, technologies, infrastructure, legislation, policies, and systems to provide Malaysia with a competitive advantage. It will be a test bed for invention, research, and other groundbreaking multimedia developments spearheaded by multimedia applications. It will be a world of Smart Homes, Smart Cities, Smart Schools, Smart Cards and Smart Partnerships.

There are three key phases of the MSC that Malaysia believes is necessary to achieve Vision 2020. The first phase involves attracting companies, create a framework of "cyberlaws", establishing Cyberjaya and Putrajaya, and beginning seven Flagship Applications. The second phase will find the MSC linking to other Malaysian cities and cities around the world. Malaysia will attempt to globally link cities and push cyberlaws. Malaysia intends to be the location of an "International Cybercourt of Justice." The third and final phase will find Malaysia a "knowledge-based" society that has many multimedia companies.

The backbone of the MSC and Vision 2020 are to be companies that have made a commitment to Malaysia and therefore established MSC status. These companies are providers or heavy users of multimedia products and services, they employ a substantial number of knowledge workers, and they are able to outline how they will transfer technology and/or knowledge to Malaysia, or otherwise contribute to the development of the MSC and the Malaysian economy.

The most important aspect of these companies is that they prioritise expanding and developing their Asian markets. To that end, the MSC offers incentives to the companies who qualify for

MSC status. These incentives include zero income tax for up to ten years or a one hundred per cent investment tax allowance, no duty on multimedia equipment, and the right to tender for implementation contracts for Flagship Applications. In addition, the Multimedia Development Corporation (MDC) will facilitate visas, licenses and permits need by companies, as well as provide access to the MSC International Advisory Panel.

The MSC's goals are to create and complete seven Flagship Applications. These Flagship applications are divided into two categories: Environmental and Developmental. The developmental Flagship Applications focus on changing and building the education, public administration, and technology infrastructure of Malaysia. The environmental Flagship Applications focus on assisting the needs of businesses and "value-added" service companies. These environmental Flagship Applications will build up research and development, academic institutions, and make Malaysia a region where multinational corporations can develop their businesses efficiently because of the technological environment. The applications falling into the developmental category are an Electronic government, Multi-Purpose card, Smart Schools, and Telemedia. The applications falling into the environmental category are R&D clusters, Worldwide manufacturing webs and Borderless marketing. Companies who receive MSC status are committed to assisting the government in its goals of completing these seven Flagship Applications.

Appendix 2.

Pacific Economic Cooperation Council (PECC) 1999

The Pacific Economic Cooperation Council (PECC) is an independent policy and advocacy group for economic cooperation and market-driven integration in the Asia Pacific. In an effort to create “open, regional cooperation” members of the PECC want to ensure economic development in the 21st century of their countries. Member countries hope to create a healthy and stable global financial system.

The PECC has a three-part program combining knowledge of government policy-making with business priorities, and research and analysis. PECC believes each country must develop firm financial institutions and stresses the importance of well-functioning markets and effective regulatory institutions to ensure economic development—which is the PECC central theme. PECC intends to facilitate this growth through macroeconomic risk management, restructuring banks and corporations in crisis economies, creating a transparent and stable regime among financial institutions, and developing social safety nets to cushion adjustments.

PECC hopes to ensure a “meaningful WTO [World Trade Organization] launch” that will include progress on its agenda; strengthening existing rules and commitments; and ensuring implementation is based on sensitivity to institutional and capacity constraints. PECC hopes to work in conjunction with APEC to develop principles in competition, deregulation and electronic commerce. PECC believes the organization for Asian Pacific Economic Cooperation (APEC) is able to induce individual and collective action plans for trade and investment liberalization. APEC is an anchor for regional cooperation and plays a role where WTO is unable to make commitments.

There are five concerns outlined in the statement that affect those in the PECC community that PECC believes are relevant for all. First, there is concern for infrastructure and clean urban environments. APEC is one vehicle for ensuring public-private partnerships and market solutions will answer problems. However the bigger problem is choosing and implementing a policy regime that will contribute to capacity building. Second, there is a concern about income disparity between rural and urban areas. PECC hopes to make rural areas into more efficient market economies. Third, there is a concern about natural gas and PECC has played a large role in ensuring energy markets becomes open and competitive through on-going dialogue between energy government leaders. Fourth, PECC hopes to overcome the “digital divide” because it will soon affect region if information networks are not available to all. Finally, PECC wants governments to work with the business and academic community to ensure technology benefits all and is accessible to all.

PECC believes the success in the future of the region lies in new relationships between developing and developed countries and hopes to facilitate this by driving the regional and global economy with inclusiveness and representation.

Appendix 3.

e-ASEAN Framework Agreement: Fourth ASEAN Informal Summit

This agreement represents an effort to gain access to new technologies, facilitate cross border trade and electronic transactions, and to benefit from opportunities from the development of information, communications, and technology (ICT).⁶ The e-ASEAN goal is that countries realize their potential through the development of human resources. It is expected that the framework of this agreement will increase ASEAN competitiveness in global markets. The goal is for public and private sector cooperation in the implementation and creation of “e-ASEAN.” The objectives are to:

1. promote cooperation to develop, strengthen and enhance competitiveness of the ICT sector in ASEAN member states;
2. promote cooperation to reduce the digital divide within ASEAN and among ASEAN member states;
3. promote cooperation both in the private and public sectors to realize e-ASEAN; and to
4. promote liberalization of trade in ICT products, and ICT services and investments to support e-ASEAN.

Member States are required to do four things in an effort to establish the ASEAN information infrastructure. They are required to (1) enhance their national information infrastructure to make connecting to member states and ensure technical inter-operability of member states information infrastructure; (2) try to establish high-speed direct connection both in national information infrastructures to aid interconnection of ASEAN information infrastructure; (3) develop digital libraries and tourism portals to enhance and complement ASEAN information infrastructure; and (4) work toward facilitating creation of national and regional internet exchanges and internet gateways.

The agreement also covers six actions the member states must take in an effort to promote growth of electronic commerce. Member states are also required to facilitate trade in ICT products and ICT services as well as investments. Member states are to engage in capacity building and create an e-Society through developing a knowledgeable workforce, narrowing the digital divide, and increasing the competitiveness of the workforce. Finally, through a concept of “e-Government” member states are required to provide government services and transactions on-line through ICT applications to aid links between public and private sectors.

Appendix 4.

West African Migration and Development Plans: Dakar Declaration

Inter-Regional Conference on the Participation of Migrants in the Development of their Country of Origin: Preparatory Meeting to Dakar Declaration

The purpose of the preparatory meeting by delegates of the West African states was to lay out an agenda for a later conference that would be accepted by the delegates in the “Declaration.”⁷ The themes of the conference focus around emigration in countries of origin and both what can be done to stem this migration, as well as what can be done to make migration less difficult. To this end, discussions focused on host countries’ immigration policy—changes that can be made to adapt migration to their labour needs and home countries need to focus on dynamic and sustainable development to reduce migration pressure. There were three major areas of discussion and four main proposals.

(1) Migration Management: Development, Remittances, Technology Transfer and Reintegration programs. A background document discussed the role of remittances and technology transfer. It argued that remittances should be encouraged by a country of origin to flow through official banking channels, so that there is a formal and reliable way of determining the amount of remittances sent. In addition, since remittances are used for a variety of purposes, they emphasized tracking the manner in which remittances are used, e.g., sustaining family, financing purchases of land and housing or developing localities. Discussions concluded that (1) it is important to encourage remittances through official channels and improve their use in the home countries; (2) the value of utilizing remittances must be measured in terms of its impact on family welfare and (3) the multiplier aspect of the use of emigrants’ remittances should be considered when evaluating the economic impact of the remittances.

It was also noted that migrant associations raise quite a bit of the remittances used for development projects in the localities of origin. Conference participants hope to encourage migrant associations to become partners and mediators to encourage development activities they sponsor. Migrant associations were also found to be essential to the successful reintegration of returning migrants. Research on the integration of emigrants in host countries and phases of reintegration with an emphasis on the functions and roles of different actors was encouraged.

(2) Intra-regional and Inter-regional Cooperation in Migration Management. Background documents focused on regulating migration of West African people; the idea of an integration policy and “horizontal cooperation” between States belonging to the same region; and “vertical cooperation” in terms of relations, and agreements, between countries in the North and South. The participants believed intra-regional and inter-regional cooperation should give importance to the recognition and protection of rights of migrants as human beings and workers. The participants were also concerned about the implementation of policies of free movement within the ECOWAS territory to prevent large-scale expulsion of foreign nationals. Participants also hoped for a balance between demands for labour and the management of migrants. Finally, participants hoped to have a clear information policy on job opportunities that emphasized which type of migrants were solicited with job offers.

(3) Role and Position of the Family and the Impact of Migrant Women's Experience in the Development Process. The expert discussion noted the rising phenomena of female migration and attributed it to four factors: an increase in family reunion associated with a shift from male labour migration into settling-oriented migration; an increase in migrant female labour; a need for family survival strategies and increase in economic motivations; and the cultural emancipation of women.

There are marked differences between male and female migration. First, if there is family reunion, this generally means a break from the country of origin—and the least amount of remittances. Second, emancipation or the search for family survival strategies probably will affect remittances because there is either a break in connection or little to send. There was concern on the part of the participants for tailoring return policies to the needs of women.

Main Proposals of the Preparatory Meeting.

1. Strengthen relations between migrants and home country by encouraging mobilization of emigrants' savings and orienting investment to economic sectors.
2. Ensure migrants are able to open foreign currency accounts to promote and guarantee security of savings.
3. Promote specific development projects in areas where most migration occurring.
4. Institutionalise migrant associations and increase their participation in decision-making processes.
5. Encourage systematic dialogue between migrants and authorities of host and home countries.
6. Implement research programs on West African international female migration.
7. Strengthen inter-regional and intra-regional cooperation in migration and development
8. Prevent large-scale expulsion of foreign nationals in West Africa by enforcing African Charter.
9. Enforce rights of emigrants and offer them protection as human beings and workers.
10. Facilitate harmonization and coordination and incorporation of migration policies at regional level by enforcing Convention on Free Movement of People Within ECOWAS and UEMOA frameworks.

Inter-regional Conference on the Participation of Migrants in the Development of their Country of Origin: Dakar Declaration

The Dakar Declaration of Western Africa States begins with the statement that legal migration would benefit from global and concerted policies based on partnership between host, transit, and home countries.⁸ The Declaration recognizes that reintegration of migrants into economic sectors will contribute to peace and development in West Africa. The Declaration also recognizes that intra-regional and inter-regional cooperation strengthen, and harmonize, migration and development policies.

Statements of issues and activities the West African States are committed to achieving include:

1. promoting peace and stability to foster sustainable development in West African region;

2. protecting rights of migrants as vulnerable persons, especially in areas of conflict;
3. strengthening migrants' relationships with their countries of origin by creating favourable conditions for remittances of migrants and savings to ensure a more productive use of those resources;
4. supporting and encouraging investment initiatives taken by migrants in areas of origin;
5. undertaking reintegration of migrants through awareness of culture and traditions;
6. assisting migrants' integration when they return to home country;
7. incorporating problems of women and children in plans for return programs;
8. encouraging local communities to make decisions about development strategies;
9. developing poverty alleviation programs in connection with migrants to reduce the inclination to emigrate;
10. encouraging vocational training for migrants and promoting intra-regional and inter-regional cooperation mechanisms for technology transfer suited to different countries;
11. assisting with collection, processing and dissemination of information on internal migration and international migration;
12. accelerating the West African regional integration process, emphasizing free movement and promoting dialogue and cooperation with respect to migration and development between countries of the West African region and between other regions.

Recommendations of the Dakar Declaration encourage action by the West African States and the International Organization for Migration (IOM). The West African States are exhorted to establish follow-up mechanisms in collaboration with IOM, ECOWAS and UEMOA.

The IOM is recommended to provide technical and institutional support for implementing recommendations of the Declaration in connection with international, regional and sub-regional organizations and other partners at the national and local levels through, supporting projects initiated by migrants, assisting in training staff of regional and governmental organizations and institutions; especially w.r.t. creation and implementation of policies.

IOM it is hoped will support a research program on international migration and assist in coordinating, and integrating, regional migration policies. It is hoped IOM will contribute to technical and institutional capacity building efforts of West African States to enable them to settle conflicts that cause large-scale movement of people, while ensuring an effective use of humanitarian assistance and development aid for migration management. Finally, it is hoped IOM will provide for migrants' concerns in their development programs.

Endnotes

¹ The industry claimed shortages of between 300,000 and as much as 800,000 ICT workers. At the same time, most analysts of the situation found no evidence of widespread shortages in ICT looking at relative wages or other indicators (Lowell 2000). This, of course, raises the specter of developed countries foregoing the tough job of domestic education and training while boosting their advantage by hiring abroad.

² One recruitment company claims that there are more teachers than positions for them to fill in South Africa and those teachers who do leave develop more skills they can use when they return. (Smithers and McGreal 2001).

³ One recruitment company claims that there are more teachers than positions for them to fill in South Africa and those teachers who do leave develop more skills they can use when they return. (Smithers and McGreal 2001).

⁴ At the same time, there were critical reactions to a proposed Immigration Bill in the Parliament that would tax skilled workers and require their employers to place monies in a training fund. The same news report noted that an IMF study has concluded that highly educated South African migration exceeds 8 percent, and that an IOM study concluded that shortage of skilled labor negatively affected economic growth and stunted development of labour-intensive sectors while reducing the ability of the labour market to adapt to globalisation (Wocke and Klein 2000).

⁵ Pushing globalisation within a country—through increased foreign direct investment, expanding ICT and communication technologies (especially the Internet) add to a country's development. Smaller countries are increasingly global, but the leaders in globalisation and internet development are the United States, Canada, Sweden, Switzerland and Netherlands. Though globalisation is an important goal for country to increase development, it may lead to the neglect of infrastructure and may increase income disparity. In short, developing nations may have more problems with globalisation because they must spend more money and have less human capital. Globalisation is very important, but there should be caution in going about the process.

⁶ Signatories to the e-ASEAN agreements are: State of Brunei Darussalam, Kingdom of Cambodia, Republic of Indonesia, Lao People's Democratic Republic, Malaysia, Union of Myanmar, Republic of Philippines, Republic of Singapore, Kingdom of Thailand and Socialist Republic of Viet Nam.

⁷ Unofficial report (final version) of the preparatory meeting held in September 12-13, 2000.

⁸ Signatories to the Dakar declaration are the Ministers and Representatives of Governments of the West African States, October 13, 2000 in Dakar.

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ESTUDIOS SOBRE MIGRACIONES INTERNACIONALES

1. Adjustments to labour shortages and foreign workers in the Republic of Korea
M.I. Abella; Y.B. Park; W.R. Böhning, 1995
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- 7 E. Labour market discrimination against foreign workers in Germany
A. Goldberg; D. Mourinho; U. Kulke, 1996
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Colectivo IOE: M.A. de Prada; W. Actis; C. Pereda, y R. Pérez Molina, 1995
- 9 E. Labour market discrimination against migrant workers in Spain
Colectivo IOE: M.A. de Prada; W. Actis; C. Pereda, y R. Pérez Molina, 1996
10. The jobs and effects of migrant workers in Northern America - Three essays
J. Samuel; P.L. Martin; J.E. Taylor, 1995
11. The jobs and effects of migrant workers in Italy - Three essays

- L. Frey; R. Livraghi; A. Venturini; A. Righi; L. Tronti, 1996
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 20. Emigration pressures and structural change. Case study of Indonesia
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Jeroen Doomernik, 1998
 28. Approche juridique de la discrimination à l'accès à l'emploi en Belgique en raison de l'origine étrangère
B. Smeesters, sous la direction de A. Nayer, 1999
 29. The documentation and evaluation of anti-discrimination training in the United States
M. Bendick, Jr., M.L. Egan, S. Lofhjelm, 1999
 30. Illegal labour migration and employment in Hungary
J. Juhász with contributions from M. Cosmeanu; I. Ramond; J. Gmitra, A. Bácskai, 1999
 31. Foreign labour in Lithuania: Immigration, employment and illegal work
A. Sipaviciene, in cooperation with V. Kanapiene, 1999
 32. Legal and illegal labour migration in the Czech Republic: Background and current trends Milada Horáková, 2000
 33. Migrant labour - An annotated bibliography
R. Chen; M. Madamba, 2000
 34. Settlement and integration policies towards immigrants and their descendants in Sweden
Charles Westin, 2000
 35. United States policies on admission of professional and technical workers: Objectives and outcomes
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