

Migration from Zambia: Ensuring Temporariness through Cooperation

By: Mohammad Amin^{*} and Aaditya Mattoo^{**}

(World Bank, Washington, DC)

The paper analyzes migration from Zambia in order to understand how migration policy can support development in the least developed countries. Overall emigration from Zambia is not high by regional standards but the pattern of migration is skewed towards the skilled and away from the unskilled. A development-friendly approach to migration for Zambia would strive to ensure the temporariness of both types of movement. First, industrial countries may be willing to accept a higher level of unskilled immigration if they could be certain that it was temporary. Second, any adverse effects of brain drain would be greatly alleviated if skilled emigration was temporary. The problem is that host countries cannot unilaterally ensure temporariness of unskilled migration because repatriation cannot be accomplished without the help of source countries like Zambia, and source countries today have little incentive to facilitate the return of the unskilled. At the same time, source countries like Zambia cannot unilaterally ensure temporariness of the skilled because repatriation cannot be accomplished without the help of the host countries, and host countries currently have little incentive to send back the skilled. Hence, there is a strong case and considerable scope for cooperation between source countries like Zambia and destination countries in the design and implementation of migration policy so that unskilled migration becomes feasible and skilled migration takes a more desirable form.

Keywords: Migration, Brain drain, International Cooperation, Zambia

JEL: F22, F24, O15, O19, O24, O55

World Bank Policy Research Working Paper 4145, March 2007

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the view of the World Bank, its Executive Directors, or the countries they represent. Policy Research Working Papers are available online at <http://econ.worldbank.org>.

^{*}Corresponding author, Development Research Group, 1818 H Street NW, MC3-301, World Bank, Washington DC 20433. Email: mamin@worldbank.org, Phone: 202-473-7147.

^{**}Development Research Group, World Bank, Washington DC 20433. Email: amattoo@worldbank.org. The paper has benefited from the comments of Jos Veerbek and an anonymous referee. The research is supported in part by the U.K. Department for International Development.

Migration from Zambia: Ensuring Temporariness through Cooperation

Overview

Overall emigration from Zambia is not high by regional standards but the pattern of migration in Zambia is skewed towards the skilled. Even though international migration offers potentially large benefits to sending and receiving countries, industrial receiving countries have shown little interest in liberalizing the inward flow of the unskilled while being relatively open to the entry of the skilled. The total stock of Zambians living in the OECD countries is estimated at 27 per 10,000 of Zambia's population, an emigration rate far below that of many other African countries, such as Kenya (56) and Zimbabwe (47). Currently, about 10% of all tertiary educated Zambians live outside Zambia as compared to over 18% for Eastern Africa. The emigration rate amongst the tertiary educated is about 35 times that for the secondary educated in Zambia, while for most other African countries the ratio is below 10. The main reason for this is the low level of unskilled migration from Zambia.

A development friendly migration policy for Zambia would strive to ensure temporariness. On the one hand, industrial countries may be willing to accept a higher level of unskilled immigration if they could be certain that it was temporary. On the other hand, concerns about brain drain in a source country like Zambia would be greatly alleviated if emigration was temporary. The problem is that host countries cannot unilaterally ensure temporariness of unskilled migration because repatriation cannot be accomplished without the cooperation of the source. And source countries cannot unilaterally ensure temporariness of the skilled because repatriation cannot be accomplished without the cooperation of the host. Hence, there is a strong case for Zambia to cooperate with destination countries in the design and implementation of migration policy so that unskilled migration becomes feasible and skilled migration more desirable.

Zambia may be able to promote more migration of the unskilled if it takes measures, in cooperation with the receiving countries, to ensure that such migration is temporary. Bilateral agreements on these lines have been successfully implemented between the Caribbean and Canada, Ecuador and Spain and Poland and Germany. Zambia would agree to help with the selection and screening of migrants, provide necessary pre-departure training and cooperate to ensure timely return. Aversion to unskilled immigration in the receiving countries may be reduced through agreements that ensure temporariness.

Although the rate of skilled migration is not high in Zambia, the impact is significant given the country's limited capacity to generate human capital. The adverse effects of brain drain are typically larger when the country has limited human capital and limited capacity to train professionals. Both these concerns are valid for Zambia especially in the healthcare sector. For example, there are only 12 physicians per

100,000 of population in the country, which is lower than the least developed country average of 18 per 100,000. New health graduates in Zambia number only 7 per 100,000 population which is 8th lowest in Africa and the World. In terms of the stock of tertiary educated in all disciplines, Zambia's performance is average by regional standards. It ranks 17th among 29 African countries and 5th among 10 SADC countries.

The current skill shortage in Zambia is primarily due to inadequate educational infrastructure and cannot be solved merely by restricting skilled emigration.

Government expenditure on education is currently only 2% of GDP, the lowest in Africa and well below the 3.4% average level for least developed countries. The problem of low expenditure is compounded by the way it is allocated. Students in health and welfare constitute about 3% of all students at the tertiary level in Zambia - only 7 countries in the world have a lower percentage. Restricting the outflow of the skilled will help address the existing shortages in Zambia only to a limited extent. For example, it is estimated that about 300 Zambian doctors practice abroad while the estimated shortage to meet the basic WHO recommended standards stands at 1654 doctors.

Zambia has taken steps towards retention and voluntary return of those settled abroad but these schemes have had only limited success.

The recent National Employment and Labor Market Policy (NELMP) specifically addresses emigration and seeks to attract skilled Zambians home by facilitating their return and reintegration and providing better working conditions. The country also launched a "bonding" system which requires all Zambians who are awarded a publicly funded scholarship to sign an agreement to return after the completion of their studies. Complementary schemes include the IOM's Return of Qualified Africans (RQAN) and efforts by Migration for Development in Africa (MIDA). These schemes have had limited success because they require those already settled abroad to return and those who could go abroad to stay in return for certain economic and moral incentives. However, the strong economic motives which propel much of skilled emigration from Zambia tend to dominate the material and moral incentives to return. These problems apply also to exchange programs of the kind negotiated between the U.K. and South Africa. One alternative is to make receiving countries pay Zambia for the Zambian professionals they recruit.

Similarly, compensation by host countries like the UK for Zambian skilled immigrants has proved difficult to negotiate and assistance to build training capacity may be a more feasible solution.

Private firms in the receiving countries are often the main beneficiaries of skilled immigration, especially when public healthcare systems (like the NHS in the United Kingdom) exercise restraint in recruitment. A compensation scheme is then a de facto transfer from taxpayers in the receiving country to these firms, which may not be politically feasible. There are also problems with identifying the right level of compensation especially due to the large positive externalities arising from the presence of skilled professionals. A better strategy would be for host countries to provide aid to enhance training capacity in Zambia which need not be linked to the numbers emigrating. However, aid for training will need to be complemented by a for a more development friendly migration regime.

The adverse effects on Zambia of brain drain could be alleviated if skilled migration were temporary rather than permanent. Migration offers an opportunity to earn higher income and learn new skills in the host countries. Savings from higher income are a potential source of investment in Zambia while the skills acquired abroad are a substitute for costly training at home. But permanent migrants have less incentive to remit earnings while temporary migrants bring their savings home on return. Similarly, compared to permanent migration, temporary migration offers a larger number of individuals the opportunity to learn while abroad and transfer knowledge and skills to others in Zambia on their return. This circulation enhances the global stock of human capital and the benefits can be appropriately shared by the sending and receiving countries. These benefits of temporary over permanent migration are lost under other schemes which are based on permanent migration or no-migration.

But temporary migration of the skilled cannot be achieved unilaterally by Zambia and requires cooperation with destination countries in the framework of a bilateral agreement. Today most temporary migration schemes in the OECD countries are in fact stepping stones to permanent migration. The exceptions are certain managed migration schemes, such as the agreement between Poland and the Netherlands on the temporary movement of nurses and the Seasonal Agricultural Worker's Scheme implemented by the U.K. for temporary visits by university students in agriculture. A commitment to repatriate by the host, e.g. through granting non-extendable visas, can be based either on self-interest or generosity. In some cases, receiving countries find it difficult to implement temporariness of the skilled even when it is the socially preferred outcome. Firms and natives of the receiving countries often invest in the migrants through, for example, costly training or relationships. Once such investments are made they are in the nature of sunk costs and the continued presence of the migrant is required to reap the benefits of the investments. The government of the receiving country is then forced to grant such migrants permanent residence although ideally it prefers no-investment and temporary migration only. In these cases sending countries such as Zambia can help ensure temporariness through a bilateral treaty clearly ruling out permanent residence. In other cases, the receiving countries prefer permanent over temporary migration irrespective of the nature of relationship-specific investments. These cases relate to the highly skilled professions involving long and extensive training periods. Ensuring temporariness here is more difficult and Zambia must rely on the goodwill of the receiving countries to repatriate its brains.

Facilitating the temporary movement of both the skilled and unskilled is accomplished more easily in a bilateral than regional or multilateral context. Existing international agreements on labor mobility, such as the WTO's General Agreement on Trade in Services, have failed to do better because they seek primarily to induce host countries to make commitments to allow entry. Such an approach is currently ill-suited to unskilled migration because there is no provision for source countries like Zambia undertaking binding commitments on screening, selection and facilitating repatriation. The approach is also ill-suited for skilled migration because it does not enable host countries to undertake binding commitments to ensure temporariness of skilled personnel from countries like Zambia. In the absence of a

dramatic change in the multilateral framework, a development-friendly approach to manage migration is more easily developed in a bilateral context.

Migration in Zambia

Migration pressure in Zambia

International migration is fuelled by economic and socio-political factors typically classified as push and pull factors. The push factors include: poor socio-economic living conditions, unemployment, drops in real income, currency devaluation and rising cost of living, professional isolation, tribal/ethnic discrimination against the qualifications held and competition with expatriates. The pull factors include higher salaries, greater job mobility and professional career; fewer bureaucratic controls, higher standards of living; acquisition of higher skills, foreign scholarships and educational support, active presence of recruitment agents and network effects. These factors work in tandem with each other in generating migratory flows. In a formal empirical study, Hatton and Williamson (2001) analyze the push-pull factors for the sub-Saharan African countries and find that the real wage gaps between sending and receiving countries and the demographic booms in the low-wage sending regions are the two most important factors in driving migration. The study also notes that the situation in the region is similar to the one in Europe in the late 19th century which fuelled mass migration.

Emigration from Zambia is mostly driven by the economic motives mentioned above with little role of civil unrest, security concerns, etc., as the country has enjoyed peace and stability since its independence. Fears of mass emigration from Zambia (and continental Africa) to the rich developed countries seem unfounded at least for the present. In fact, African countries show lower levels of labor mobility than others. Table 1 illustrates the point.

Table 1: Migrants per 10,000 of source country population in 2000

	OECD	USA	Canada	UK	France	Switzerland	Netherlands
Angola	87.3	1.7	1.1	2.5	4.6	2.7	2.0
Botswana	15.8	5.9	0.2	6.0	0.7	0.1	0.4
Congo, DR	18.0	0.9	1.1	1.1	3.3	0.6	0.7
Lesotho	3.3	0.5	0.3	1.3	0.1	0.4	0.2
Malawi	11.0	1.1	0.3	8.9	0.0	0.0	0.1
Mozambique	33.7	0.8	0.5	1.5	0.4	0.4	0.2
Namibia	10.6	0.5	0.9	3.9	0.4	0.7	0.4
South Africa	61.1	11.1	6.2	20.5	0.3	0.9	1.2
Swaziland	18.0	9.4	0.7	4.9	0.0	0.4	0.3
Tanzania	18.1	2.7	5.2	8.5	0.1	0.2	0.2
Zambia	26.5	4.3	1.4	16.1	0.1	0.2	0.3
Zimbabwe	47.1	6.5	2.2	27.1	0.2	0.4	0.4
All SADC	35.2	4.1	2.9	9.7	1.3	0.7	0.7
Africa	55.9	8.0	2.8	7.7	17.8	0.8	2.9
World	94.0	40.0	7.7	5.8	6.2	2.3	2.1

Source: Docquier & Marfouk (2004).

The table shows that the emigration rate from Zambia is lower than the African average but comparable to the average in Southern Africa. A case study of Zambia may, therefore, help understand migration issues in Southern Africa and our findings may also be relevant to other parts of the world.¹

It is well known that overall migration rates do not convey the full picture of the possible impact of migration and the *structure* of migration is critical. The first element of the structure is the composition of migrants by their skill or the level of education. Table 2 provides a snapshot of this.

**Table2: Emigration rates by education in 2000 for SADC countries:
Migrants as % of all educated (natives plus migrants) in each category**

	Primary educated	Secondary educated	Tertiary educated
Angola	2.10	3.40	25.60
Botswana	0.10	0.80	2.10
Congo, Dem. Rep.	0.10	0.50	7.90
Lesotho	0.00	0.10	2.4
Malawi	0.00	0.80	9.40
Mozambique	0.50	5.80	42.00
Namibia	0.10	0.20	3.40
South Africa	0.40	0.50	5.40
Swaziland	0.20	0.20	5.80
Tanzania	0.10	1.00	15.80
Zambia	0.10	0.30	10.00
Zimbabwe	0.20	0.70	7.60

Source: Docquier & Marfouk (2004).

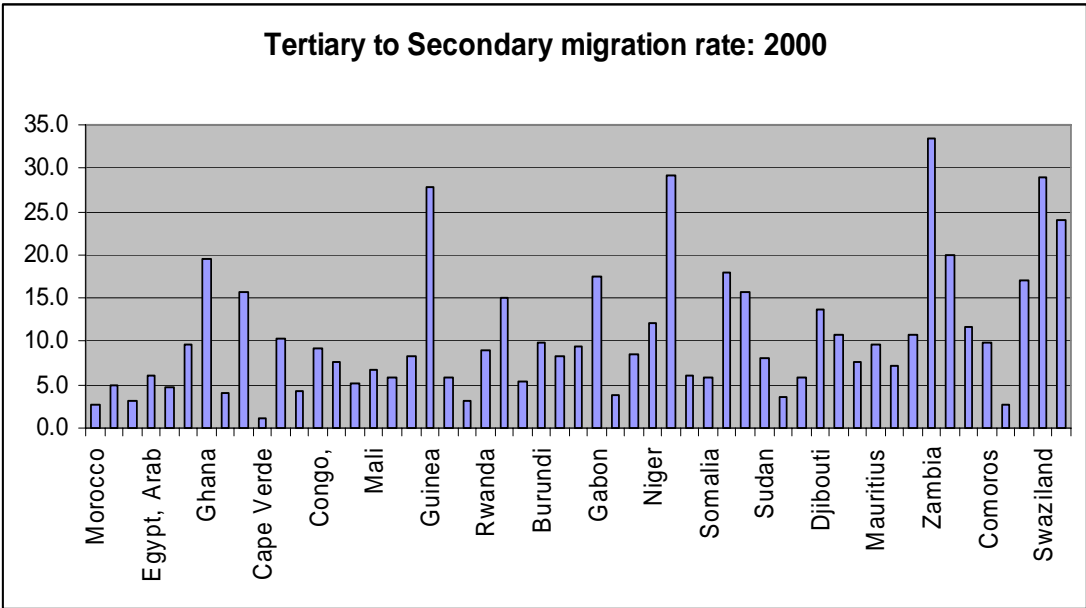
The table shows that tertiary educated Zambians living abroad equal 10% of all tertiary educated Zambians in the country and abroad. This rate is not too high when compared to other African countries although it is higher than many countries outside the African continent. For comparison, the corresponding rate stood at 6.2% (Northern Africa), 13.3% (Central Africa), 26.7% (Western Africa), 18.4% (Eastern Africa) and 5.3% (Southern Africa). For the South-Central Asia region, it equaled 5.1% and 4.3% for the Eastern Asia region.

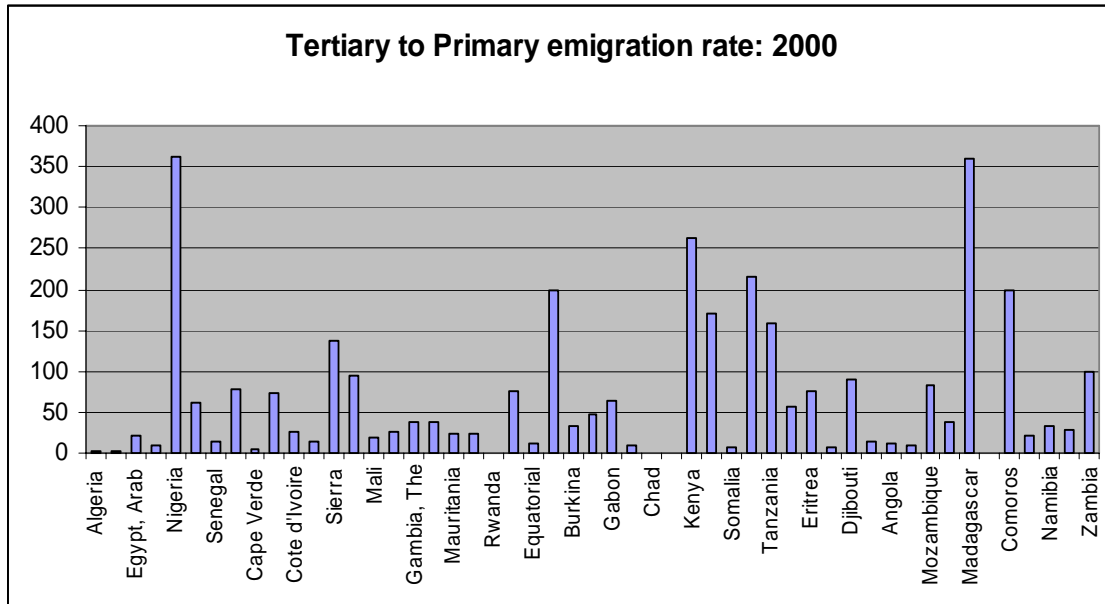
¹ The argument holds when we look at the unskilled and skilled emigration rates separately. For skilled workers, Zambia's emigration rate is comparable to those of Malawi, Zimbabwe, Swaziland, South Africa, Cote d'Ivoire, Congo (D.R). For unskilled workers, Namibia, Tanzania, Congo (D.R), Ethiopia, Kenya, Madagascar show roughly similar rates of emigration as Zambia.

Overall emigration rates to the developed rich countries are lower in Africa relative to rest of the world. For Zambia these rates are low even by African standards.

For Zambia the percentage of its tertiary educated citizens living abroad is moderate by African standards but much higher than many countries outside Africa.

With most of the attention focused on skilled migration, migration of the unskilled (and the semi-skilled) has been largely neglected. However, as Winters et.al (2002) point out, welfare gains at the global level are likely to be larger from liberalizing this form of migration relative to the high-skilled. However, migration of the unskilled is one area where Zambia has lacked behind most of the other countries. Table 2 shows that the migration rate of the primary educated (unskilled) is only 0.1%. The corresponding figures for other regions are: 2.3% (Northern Africa), 0.3% (Western Africa, Southern Africa), 0.2% (Eastern Africa), 2.8% (Western Asia) and 0.5% (South-Central Asia). Similarly, migration rate of the secondary educated (semi-skilled) is also low for Zambia at 0.3% relative to other African countries as shown in the table. Low emigration rates for the unskilled and semi-skilled coupled with moderate level for the skilled has skewed Zambia’s migration structure in favor of the highly educated. The following graphs illustrate the point.





Migration of the unskilled: an opportunity for Zambia

It is important to recognize that the main cause of Zambia's skewed composition is not that too many of the skilled but that too few of the unskilled migrating. Clearly, facilitating the emigration of the unskilled to areas where they have better economic opportunities is desirable. What can Zambia do to achieve this given the highly restrictive immigration policies in richer countries?

One reason for the aversion on the part of the receiving countries is their inability to keep this form of migration truly temporary. Guest worker schemes implemented in the past were intended to fill temporary shortages in host country's labor markets. The attractiveness of these schemes to host countries lay primarily in their temporariness because unlike permanent migration, temporary migration is more flexible, imposes less burden on the public exchequer (like schooling for migrants' children, old-age pension, etc.) and does not threaten the socio-cultural-political structure of the host country. However, the system based on guest worker schemes failed to develop into an efficient and dynamic migration regime precisely because it had no in built mechanism to ensure timely return of the migrants and temporariness remained a distant dream. That the issue of timely return is important to host countries is reflected in the new generation of bilateral agreements. For example, the agreement between Spain and Ecuador signed in 2001 specifically requires that before seasonal workers are hired, they shall sign a commitment to return to Ecuador when their permit expires (Article 12).

There are also examples of some success stories such as the Canadian Seasonal Agricultural Worker Programme (SAWP). The program started in 1966 and has since evolved in size and geographic reach. For instance, over the last 20 years the intake increased from just under 6000 in 1980 to 18,700 in 2003. Another successful case is the "German contract worker scheme". The German scheme is implemented through a series of bilateral agreements with Eastern and Central European countries and is perhaps one of the biggest in the world. A key element in both these success stories is the involvement

of sending countries with specific obligations and rights over matters related to the selection and screening of migrants, migrant's rights in the host country, and above all, ensuring their return. For example, the German scheme delegates the responsibility of recruitment and timely return to the sending country. Anecdotal evidence suggests that the cost of ensuring temporariness is considerably reduced with the effective cooperation of source countries. In fact, the experience so far suggests that it is almost impossible to maintain temporariness without the involvement of the source countries. An important reason for this is that source countries have a natural advantage in the recruitment process and in facilitating timely return. Source countries have better information than host countries about migrants' backgrounds for security purposes, their qualifications and training for better job matching, and local labor market conditions, all of which can help with recruitment. Repatriation of those caught living abroad illegally would be extremely costly without the source country's cooperation as such migrants often destroy their passports and other legal documents making it difficult even to ascertain their nationality. Lastly, the source country's involvement will also help to ensure that due consideration is given to the rights of (illegal) migrants and that the system is not subject to abuse.

Unskilled migration offers large social benefits to the sending countries which may dwarf those from migration of the skilled. But Zambia lags far behind other countries in this form of migration.

Zambia should take initiatives unilaterally and bilaterally with destination countries to keep migration of the unskilled truly temporary. Such brand-Zambia unskilled migration may create its own demand.

Sending countries such as Zambia can play an important role in liberalizing the migration of the unskilled. However, it is important to realize that in order to do so they must shed their focus on somehow getting host countries to open their borders and instead provide a credible case of ensuring temporariness either on their own or in cooperation with the host countries. With low-cost temporary migration arrangements in place, demand may grow from labor-scarce richer countries.

Box 1. A model agreement for the migration of the unskilled

A: Host country obligations

- 1) Inform Zambia about the number of guest workers needed.
- 2) Prepare the work contract before the migrant departs which specifies the duration of stay, wage rate, working hours and working conditions, other benefits and basic rights to which the migrant may be entitled.
- 3) Facilitate the processing of contracts and obtaining visa.
- 4) Give preference to those workers who returned on time in the past.
- 5) Prohibit employers who violated contracts in the past from participating in the program.

B: Source country obligations

- 1) Set up an agency to which prospective migrants can submit their applications.
- 2) Provide necessary help with the screening, selection, recruitment and pre-departure orientation of the migrants.
- 3) Position a liaison officer in the receiving country to monitor the migrants and the fulfillment of the terms in the contract.
- 4) Ensure the timely return of migrants through monitoring and variety of mechanisms such as withholding of a part of the migrant's income till he returns, "bonding system" with punitive measures, reintegration programs such tax exemptions on return, provision of information on job vacancies, skill training, micro-credit schemes for housing and small business loans. Since some of these measures such as withholding income may be subject to abuse by the employers, the agreement should clearly specify which government agencies or third parties such as the IOM would implement them.

C: Potential benefits from the agreement

- 1) As the source country, Zambia has a natural advantage in the process of selection, recruitment and pre-departure orientation. Cost savings to employers and host countries through this channel have been an important factor in the success of previous efforts such as the German contract worker scheme.
- 2) Ensuring timely return is costly to the host but this cost can be considerably reduced through the involvement of source by way of monitoring, provision of information and a streamlined system of repatriating the overstayers.
- 3) Host offers safe, secure and stable employment opportunities which the source cannot achieve on its own. The host gets truly temporary migration which is safe, orderly and can be adjusted to the condition of its labor market.

Box 2. Past experience with managing temporary migration of the unskilled

A number of initiatives have been taken at the unilateral and bilateral levels which incorporate elements of the model agreement listed above. The main strength of these initiatives is the degree of organization and control they offer: they provide effective instruments for monitoring the movement of workers, ensuring their safety and protection, and facilitating return. Some examples are as follows.

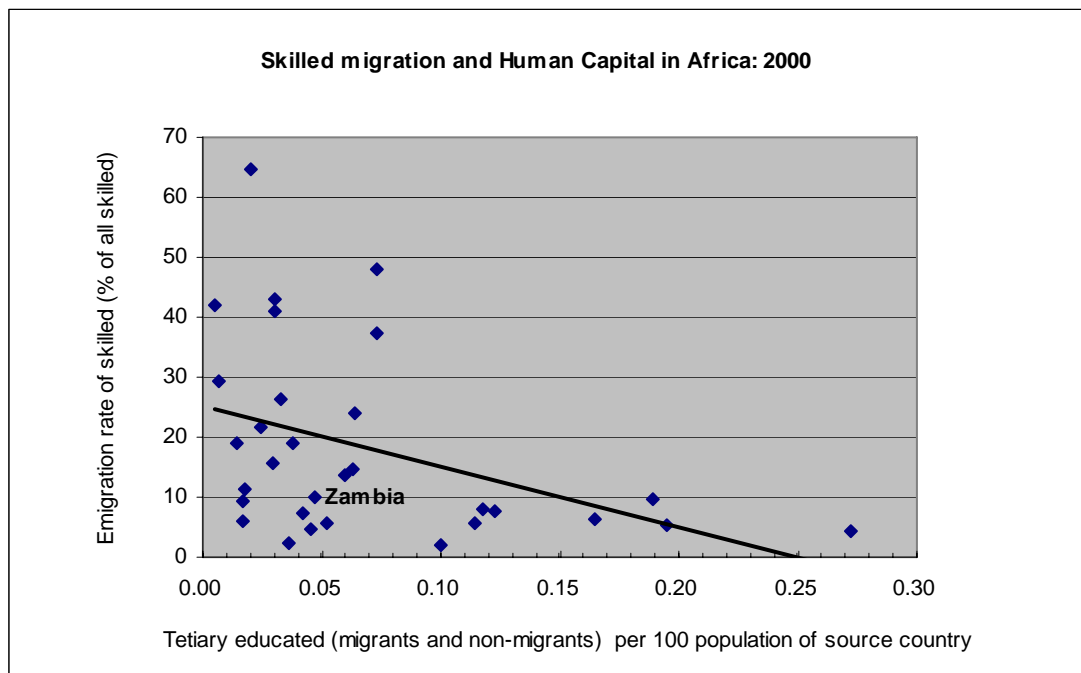
The Philippines Overseas Employment Administration (POEA) and the Overseas Workers Welfare Administration (OWWA) provide a number of services which facilitate orderly migration and enhance the gains from migration to all concerned. The agencies conduct intensified skills training and development training programs to improve the competitiveness of Filipino citizens. Foreign employers are able to recruit Filipino workers once their accreditation documents are verified by labor officers stationed abroad and authenticated by embassy officials. Employment contracts are scrutinized to ensure decent pay and working conditions. Return migration is facilitated through a number of reintegration schemes in place. These schemes cover both social and economic aspects, provide counseling to migrants and their families, skills training, educational assistance for children, micro-credit assistance and investment advice.

The Canadian Seasonal Agricultural Workers Program (SAWP) is a highly successful scheme and is often cited as model for similar agreements. The main reason behind this success is the fact that all parties concerned are assigned specific obligations and have a mutual interest in fulfilling these obligations. These parties include Human Resources and Skills Development Canada (the federal employment and labor ministry), Citizenship and Immigration Canada, Provincial governments, signatory foreign governments, employers and industry organizations (such as FARMS), the liaison officer stationed in Canada by the sending countries, IOM, etc. The local employment office is responsible for approving the offer of employment to foreign workers and transmitting the orders to other participating groups, obtaining the employer's signature on the employment contracts and sending them to the liaison office. The liaison officer facilitates the recruitment of workers, audits pay, attends to problems on site, coordinates movement of workers with travel agencies, etc. Cooperation by employers, liaison officer and embassy officials greatly helps in the timely return of the migrants.

Migration of the skilled and brain drain

The issue of brain drain has received extensive attention especially in the African context. From the source country's point of view, brain drain is a problem because it deprives the poor sending countries of valuable skills, there is increased burden on the public exchequer since in many poor countries higher education is publicly funded, and critical shortages are beginning to emerge in key sectors such as healthcare and education.

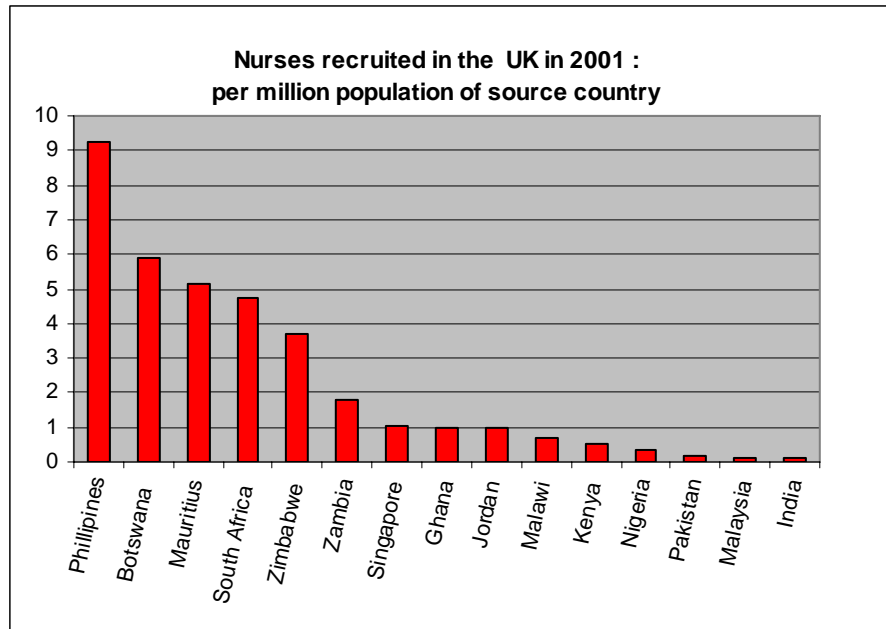
The seriousness of these concerns cannot be dismissed even for a country with a moderate level of brain drain such as Zambia. The reason for this is that even a moderate rate of brain drain can have a significant impact on the economy if the country is initially scarce in human resources, has limited capacity (educational infrastructure) to produce highly skilled professionals or if emigration is concentrated in key sectors such as healthcare and education. In fact, the rate of brain drain tends to be higher in African countries with a lower initial stock of professionals. The picture is similar when we include other countries (Appendix B).



Zambia has limited capacity to produce professionals and has a low initial stock of professionals even by African standards. We provide some evidence on this after briefly describing the nature of health skills drain from the country.

Hard data on migrants by their profession is not easily available for many receiving countries. Existing work on Zambia is largely based on guestimates and anecdotal evidence which relate mainly to the health professionals. These data estimate the total number of Zambian doctors abroad at 300 or about 46% of those currently working in the country's public sector (MoH, 2005). According to the Nursing and Midwifery Council of the United Kingdom, a total of 461 Zambian nurses were recruited between 1998-2003 which constitutes about 7.6% of those currently employed in

Zambia's public sector and about 14% of Zambia's annual flow of nursing graduates. The following graph shows Zambia's position relative to other countries in the supply of nurses to the UK..



Zambia is clearly amongst the main suppliers of nurses to the U.K. and there is a clear upward trend since the late 1990s. The total number of nurses in the UK from Zambia increased from 15 in 1998/99 to 135 by 2002/03 implying that Zambia's share in total foreign nurses in the U.K. increased from 0.3% to 1.13%. Clearly, some corrective steps should be taken to ensure that the trend does not translate into a health crisis in Zambia. Anecdotal evidence on shortages of health professionals is also worrying. For example, a recent study by IOM (2005) noted that international migration of the health workers, mainly to Britain and the United States, has exacerbated staff shortages at major hospitals such as the Ndola Central Hospital. The hospital requires 567 nurses but there are only 133 staff left to provide nursing services. The Ndola School of Nursing, which should be staffed with 27 tutors, is left with only three causing a decline in nursing graduation rates. (Later in the section we take a closer look at the graduation rates of healthcare professionals in Zambia relative to other countries.)

We next provide evidence on Zambia's performance in producing skilled professionals. We believe that this is important not just in itself but also for a better understanding of the likely impact of skilled migration. Table 3 shows Zambia's endowment of human capital.

Table 3: Human Capital in 2000: SADC countries

	% of population with no primary education	Average years of schooling per capita	Average years of primary schooling per capita	Average years of secondary schooling per capita	Average years of tertiary schooling per capita
Botswana	24.0	6.279	4.762	1.416	0.100
Congo, DR	47.7	3.03	2.374	0.619	0.038
Lesotho	28.8	4.232	3.628	0.568	0.036
Malawi	40.7	3.204	3.017	0.170	0.017
Mozambique	63.8	1.105	0.983	0.117	0.005
South Africa	22.1	6.138	4.590	1.353	0.195
Swaziland	21.7	6.010	5.016	0.880	0.114
Tanzania	42.8	2.705	2.515	0.161	0.029
Zambia	17.3	5.457	4.296	1.113	0.047
Zimbabwe	12.7	5.354	3.456	1.775	0.123

Source: Barro and Lee.

Zambia's performance in generating human capital is mixed. In 1980 Zambia ranked 2nd in the set of 28 African countries for which data is available and first in the set of countries included in Table 3 in terms of the average years of schooling per capita with the absolute value being 3.9. However, in terms of tertiary schooling per capita, in 1980 it ranked second from bottom within the SADC countries in the table and 4th from bottom in the set of 28 African countries with the absolute value being .006. From Table 3 we can see that both these absolute values have increased significantly in 2000 but Zambia's performance relative to other countries is mixed. It's rank in the set of all African countries for overall schooling has slipped to 6th in 2000 and 4th within SADC countries. For tertiary education, the country's rank has improved to 17th within Africa (29 countries) and to 5th within SADC. The improvement in tertiary education notwithstanding, Zambia continues to be an average performer in the continent and within SADC.

A similar picture emerges when we look at the number of physicians in the country (Table 4), another indicator of skill availability. Currently there are .116 physicians per 1000 population in Zambia which is 6th lowest among the SADC countries in the table. Comparable figures stood at 1.6 (World in 1998), and 0.179 (least developed countries as per UN classification in 2004).

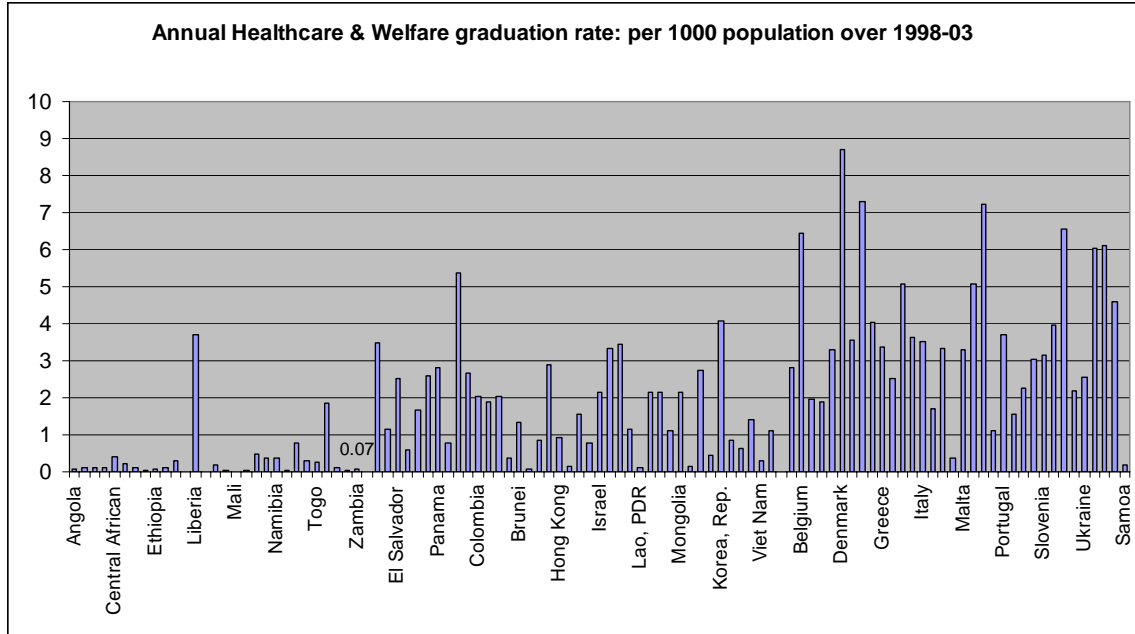
Table 4: Physicians in Africa: 2004

	Physicians per 1000 population
Botswana	0.398
Congo, DR	0.107
Lesotho	0.049
Malawi	0.022
Mozambique	0.027
South Africa	0.770
Swaziland	0.158
Tanzania	0.123
Zambia	0.116
Zimbabwe	0.161

Source: WDI, World Bank. Figure for Lesotho is for 2003 and 2002 for Tanzania.

In terms of the educational infrastructure for healthcare, Zambia currently has only one medical school, three nursing schools, and three technical colleges graduating doctors, nurses, and laboratory technicians, and pharmacists respectively. In 2004, these schools produced only 49 doctors, 540 nurses, 20 pharmacists and 38 laboratory technicians which sum to 693 healthcare professionals. Data provided by the United Nations on the number of students graduating in healthcare & welfare per capita show that Zambia ranks 8th from bottom in a sample of 101 countries in the world and same in the set of 27 African countries (see the next graph). These graduation rates are not only low by international standards but also inadequate to sustain acceptable standards of healthcare. For example, to meet the basic WHO recommendations on staff-population ratios (1:5000 for doctors and 1:700 for nurses) Zambia would require an additional 1,654 doctors and 10,636 nurses which equal about 34 and 20 times the respective annual graduation rates (MoH, 2005).

Zambia's performance in generating skilled professionals has improved significantly over the last two decades. However, the country still remains an average performer by African standards and is not equipped to meet its own needs.



What is the solution?

The solution to the skill shortage and brain drain related problems in Zambia must go to the root of the problem. The main reason for the shortages in Zambia is the country’s low capacity to produce skilled professionals although migration of the skilled tends to aggravate the problem. We suggest two broad principles for the design of an optimal solution to the skill situation in the country.

- **Increased investment in human capital**

The primary solution to the shortage lies in producing more skilled workers. Even in healthcare, emigration restrictions are unlikely to solve the problem though they may have some impact. For example, the estimated shortage of doctors to meet the WHO recommendations is about 1654 which is approximately 5.5 times the estimated number of Zambian doctors practicing abroad. As in most developing countries, higher education in Zambia depends critically on financial support from the government. Low incomes and credit constraints deter most students from seeking costly private education. For example, a recent survey conducted by the Government to assess the state of primary education in the country revealed that the majority of children who did not attend primary school cited financial difficulty as the main reason.² Investment in education must not be undermined by the cap imposed on public expenditure. Current public spending on education by the Zambian government is low even by African standards.

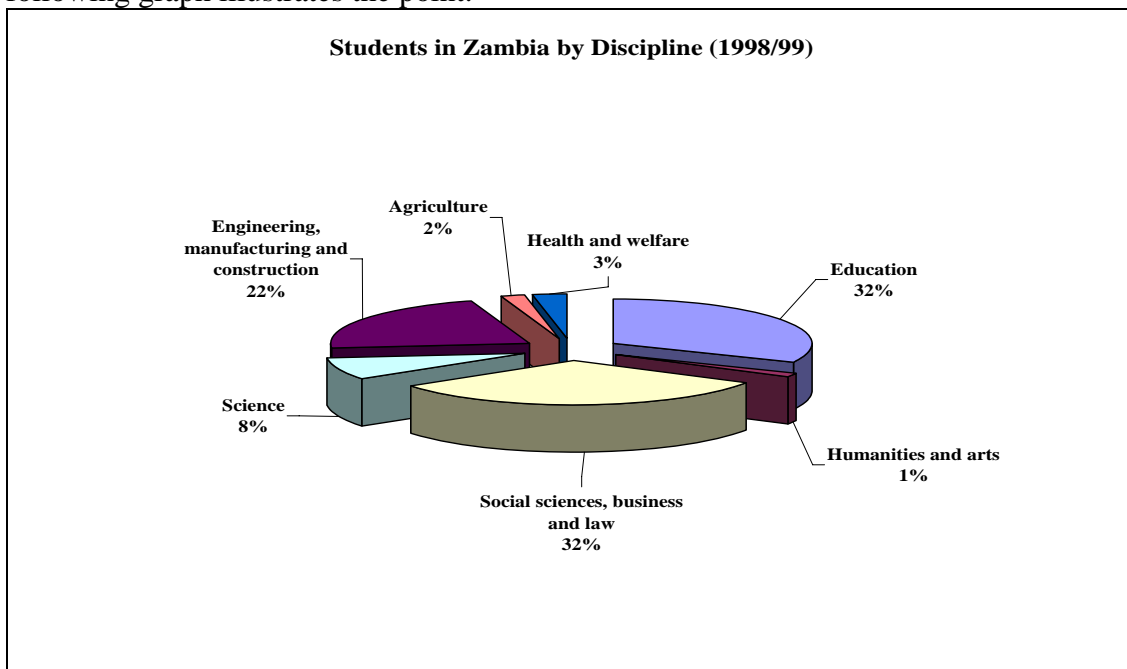
² Zambia DHS EdData Survey 2002, Education Data for Decision Making.

Table 5: Government Expenditure on Education in 2000 for SADC countries

	As % of GDP
Angola	2.61
Botswana	2.15
Lesotho	10.11
Malawi	4.14
Mozambique	2.36
South Africa	5.58
Swaziland	6.2
Tanzania	2.17
Zambia	1.99
Zimbabwe	4.70

Source: WDI, World Bank., Figure for Botswana is for 2001 and for Mozambique and Tanzania for 1999.

Zambia's expenditure on education as a % of GDP is the lowest amongst the countries shown. For Sub-Saharan Africa, the corresponding figure stood at 3.4 while for the least developed countries at 2.9. In addition to the low spending on education, there are some concerns that resources may not be suitably distributed across various disciplines. The following graph illustrates the point.



The graph shows that Zambia is not doing enough to generate more health care workers. As compared to only 3% of the students in health and welfare, the corresponding figure for most of the other countries is much higher. For example, the figure stood at 22% (Angola), 8% (Benin), 11% (Ethiopia), 9% (Kenya, Swaziland), 11% (Mongolia). For all the countries for which data is available, Zambia outperforms only 7 countries: Tanzania, Poland, Uganda, Bangladesh, Samoa, Sierra Leone and Bangladesh (data available for 73 countries).

Building capacity for greater human capital generation is a long-term and costly process. Given the current cap on public expenditure in Zambia, donor countries can help through aid and loans which could be tied to investment in higher education for healthcare and other critical professional training.

Emigration restrictions are not a substitute for building capacity for human capital generation in Zambia. For example, the estimated shortage of doctors to meet the basic WHO recommendation is 5.5 times the number of Zambian doctors practicing abroad.

Zambia's public expenditure on education is amongst the lowest in Africa. There are some concerns that even this meager expenditure is not properly distributed across various disciplines.

Migration of the skilled must also be managed properly based on the current shortages of professionals in Zambia and potential benefits offered by such migration. The question which arises is precisely what does proper management of migration of the skilled entail for Zambia?

- **Emigration restrictions, retention, voluntary return**

A number of countries including Zambia have attempted a range of policies to stem excessive outward flows of the skilled and bring back those who have moved abroad. Direct restrictions on emigration have been rare in Zambia and elsewhere. The government of Zambia recently issued a National Employment and Labor Market Policy (NELMP) which specifically factors in migration. The stated objective of the policy is to attract skilled Zambians back home by facilitating their return (integration) and improving the conditions of employment. Zambia has also implemented a “bonding” system which requires that all Zambians who are awarded a publicly funded scholarship have to sign an agreement before leaving the country to return after the completion of their studies. International organizations such as the IOM have implemented programs to encourage return migration. Initially IOM launched the Return of Qualified African Nationals (RQAN) program which was a voluntary scheme that African nationals in Europe and the USA could benefit from if they wanted to return to the continent. Zambia was singled out as one of the target countries. The scheme has now been replaced by Migration for Development in Africa (MIDA), a partnership of the African Union, the African Development Bank and several sub-regional bodies such as ECOWAS, SADC

and EAC. MIDA aims to bring the skills of African migrants in Europe and North America to bear in development projects in Africa.³

These schemes are commendable and they should be pursued in the future. However, there is some concern about their effectiveness. While there is no systematic evaluation of the efficacy of these policies, anecdotal evidence suggests that their success has been modest. We believe that the limited success could be due to the following two reasons. Firstly, where punitive measures have been used (eg., bonding scheme), they have been too modest to make any significant impact on permanent outflows of the brains. A recent study by the IOM noted that “the bonding system has never worked effectively in practice. A major problem is the lack of monitoring and the difficulty of enforcing the bonding agreement” (IOM, 2005, page 65). Secondly, permanent settlement abroad requires substantial sunk cost by the migrant which once made makes return migration more costly. Most of the schemes discussed above do little to prevent this from happening. They target those who are already settled abroad and seek to achieve a temporary rather than permanent return.

- **Compensation**

One idea which has gained some ground in the recent past is that the receiving countries should compensate the sending countries for the cost incurred by the latter in training those who leave. The compensation could be monetary or take the form of training schools established by the host in the sending countries for the would-be migrants.

So far such ideas have not found much application and negotiations between the UK and Zambia have floundered on the issue of compensation. Host countries are typically averse to compensations in any form. This is not too different from what we observe in other areas such as trade negotiations where cooperation typically takes the form of reciprocal reductions in trade barriers and monetary compensations are rarely observed. There are other problems too. Firstly, agreement on the right level of compensation can be complicated. For example, source countries incur costs not only in providing technical education but also primary and secondary education. Should the host compensate for these costs also? Secondly, in most developing countries there are strong externalities from education. The direct cost of training does not adequately reflect the opportunity cost of skilled emigration to the source. Simply, if there were no externalities then there would be no need to manage migration as selfish individual motives would be consistent with social welfare maximization. The problem is that these opportunity costs are hard to evaluate. Thirdly, a notable feature of skilled migration is that it is not only that the highly skilled leave but it is the best among them who leave. A fair compensation scheme would require transfer amounts linked to the innate abilities of those who migrate which is perhaps too complicated. Fourthly, much of the benefit from skilled immigration is appropriated by the employing firms in the host country. Compensation by the government (of the host country) implies a transfer of resources from the government

³ There are other ways in which migration can be made more development-friendly. Examples include facilitating remittance transfers, dealing with double-taxation, and increasing the portability of pension and health insurance schemes across countries. We do not address these issues here because it is not clear if there is a direct link between such measures and the composition of migration (skilled vs. unskilled and temporary vs. permanent) which is the main focus of the paper.

(taxpayers) to the firms. This has obvious distributional implications which may not be politically feasible. One solution could be to tax the employers for hiring immigrant workers. However, this is equivalent to a discriminatory tax on immigrant income which has little history of success.

Establishing training schools which are funded by the host country government is another option. In principle, such measures can reduce some of the adverse effects of brain drain on the source country but they too have limitations. In fact, the problems mentioned in the previous paragraph with compensation schemes apply as much to training would-be migrants in the source country. For example, we may ask if the host should establish primary schools also since those who migrate embody primary education as well. Additionally, a drawback of relying on compensation and training schemes alone is that they promote permanent migration at least indirectly since they do not impose any requirement of temporariness. As we argue below, temporary migration can deliver additional benefits to source without significant cost to the host when compared to permanent migration. Thus, compensation cum training schemes are best seen as complimentary to a temporary migration regime.

Migration as a Supplement

One possibility is that the opportunity to work abroad could be used to induce professionals to serve a minimum number of years in priority areas such as the public sector and underserved rural regions. The scheme can be easily implemented in collaboration with the host countries where emigration clearance would require evidence of service in certain priority sectors and regions so marked by the source country. The scheme is not too different from a tax on emigration since working in the priority sectors entails lower wages and/or poorer working conditions. Of course, this will not solve the problem of brain drain completely but ensure that the sending country gets at least something in return for losing the skilled and it also helps to channel resources (professionals) to priority areas without any additional burden on the government expenditure.

Emigration restrictions, retention & voluntary return schemes, compensation through monetary transfers or establishment of training schools can help in reducing the adverse effects of brain drain on the source country.

But these are at best complimentary measures since they do not exploit the benefits to source from a truly temporary migration regime.

- **Exchange programs**

Motivated by concerns on the part of source countries about brain drain, some host countries are actively promoting short term visits by professionals of developing

countries to gain valuable expertise and experience. One example of this is the recently concluded bilateral agreement between South Africa and the U.K. which provides healthcare professionals a chance to go on time-limited placements to the other country. The proposed benefits are expected to arise from better information sharing and expertise in areas such as public health, professional regulation, workforce planning, public-private partnerships and hospital twinning initiatives. The agreement is a two-way arrangement with specific obligations undertaken by both the countries. It was motivated in part by concerns of brain drain raised by South Africa resulting from Britain's policy of active recruitment of health professionals in South Africa.

The problem with exchange programs is that they are limited in scope and do not address the strong push-pull factors driving current migration. For example, the bilateral agreement between South Africa and the UK has no provision of ensuring return of those health care professionals who are not part of the exchange program. Further, it is unlikely that the push-pull factors which fuel migration will to any significant extent be diluted by the proposed exchange program. In other words, an effective strategy to combat brain drain must adequately factor in the demand-supply mechanics operating through the global labor market. This brings us to our proposed solution which seeks to address the major concerns and problems discussed above.

- **Temporary migration**

We noted that many of the concerns raised by skilled migration in source countries could be reduced if the duration of migration were appropriate. In understanding the difference between temporary and permanent migration it is important to note that a mere rotation of migrants under a temporary scheme does not in itself create any extra benefits to either country as compared to permanent migration. If anything, the turnover costs are likely to be higher with constant rotation of workers. To fix ideas consider the case of Zambian doctors abroad. As opposed to the current situation where these doctors are permanently settled abroad, a temporary migration regime would involve all the doctors returning to Zambia and an equal number of new doctors (measured in efficiency units) leaving the country. If the efficiency units of doctors in Zambia and Zambian doctors abroad are unchanged the switch to temporary migration does not have a positive effect on the welfare of either county.

The key condition for temporary migration to dominate permanent migration is that the benefit of turnover to the source country dominates the cost of turnover to the host country. The former is likely to be high when remittances, as well as learning and learning spillovers, are larger under temporary migration compared to permanent migration even though the latter offers scope for cumulative learning and earnings. The cost of turnover to the host is likely to be low where immigrants acquire host-specific skills quickly and at little cost to the host.

Source country: Impact of temporariness

The first benefit to source from temporariness is a larger inflow of remittances.⁴ There is strong reason to believe, and some hard evidence, that the propensity to remit is higher

⁴ Table A2, Appendix A provides estimates of inward remittances to Zambia and some of the other countries.

when migrants are better connected through, for example, family members living in the source country. Permanent migrants are typically accompanied by their families and have much less incentive to maintain networks in the source country and hence they are likely to remit less. Grieco (2004) provides a useful overview of the relevant literature and concludes that temporary or circular as opposed to permanent and family reunification based migration is likely to enhance the propensity to remit.

Empirical evidence on the issue comes from two related sources including the remittance-decay literature and other studies which use a migrants' intention to return home as a proxy for temporariness. Early work on remittance decay produced somewhat mixed results. Brown (1997) looked at the remittance behavior of Tongans and Samoan migrants in Sydney and found no evidence of remittance decay. Funkhouser (1995) also found very weak evidence of remittance decay. However, more recent work finds strong evidence of remittance decay. For instance, Brown and Connell (2004) use the same data as in Brown (1997) mentioned above but they split the migrants into two groups: nurses vs. the rest. They find strong evidence of remittance decay for the latter but not for the former. Amuedo-Dorantes et al (2005), Fairchild and Simpson (2006), among others, find strong evidence of remittance decay.

In the present context, the remittance decay literature suffers from an important shortcoming because it implicitly treats those who have been in the host country for a short period as temporary migrants, even if these migrants have no intention of returning. Our interest is in the difference in behavior of those who know that they are obliged to return from those whose move is more open-ended. Two migrants with the same duration of stay may behave very differently depending on their intention to stay permanently or not in the host country. Galor and Stark (1990) developed an early theoretical model showing that the propensity to remit is higher when migrants face a positive probability (intention) of return. Merkel and Zimmerman (1995) used a vast dataset from West Germany to test this hypothesis. Controlling for 15 variables including the number of years spent in the host country, they find that the intended duration of stay had a negative and statistically significant effect on the level of remittances. Brown (1997) and Ahlburg and Brown (1998) reach a similar conclusion in their studies of Tongan and Samoan migrants in Australia. More recently, a supplementary questionnaire on international transfers was added to the Indian Readership Survey by Devesh Kapur and Mark Rozensweig specifically targeted at understanding the link between temporariness (intention to return) and remittances. Rozensweig (2005) summarizes the findings from this survey and notes that after controlling for a number of factors, the remittance level of intended to returnees was about 3 times the remittance level of those who had no intention to return. Glytsos (1997) contrasts the remitting behavior of Greek migrants to Germany (temporary) and Australia (permanent) and also between early Greek-German (temporary) to later one (permanent). He finds strong evidence that temporary migrants have a much higher propensity to remit than permanent ones. Further, since temporary migrants are likely to leave their spouse and dependents in the source country, their propensity to remit is likely to be higher than permanent ones on this count too. A number of studies confirm this possibility. For example, Amuedo-Dorantes et al. look at the remitting behavior of Mexican immigrants in the U.S using data from Mexican Migration Project (MMP93) and find that having a spouse or

dependents in Mexico has a statistically significant and positive effect on the decision to remit or not.

The second benefit of a temporary migration scheme is that it provides greater scope for learning related benefits. That is, migration serves to enhance the skills, know-how, etc. of the migrant and temporary migration ensures that these enhancements are transferred to the source country.⁵ The fact that migrants acquire crucial knowledge and expertise while abroad is confirmed in a number of studies dealing with immigrant assimilation. However this literature implicitly assumes that such expertise is “host country specific” and there is no evidence on its portability (or lack of it) to the source country. Papers which focus directly on return migrants do help to shed light on this point. For example, Barrett and O’Connell (2000) study the performance of return migrants in Ireland and conclude that the returning Irish males earn about 10-15 % more than those who never migrated. They control for a number of observables and (ability based) selection biases so that the observed earnings differential is primarily due to greater accumulation of human capital abroad. Taylor (1976) and Thomas-Hope (1999) report that Jamaican migrants return home with enhanced skills, experience and perhaps most importantly leadership qualities. There is a small but growing literature which shows that employment choices of return migrants are significantly different from that of the non-migrants in the source country. In particular, returnees have a higher probability of being self-employed and that this phenomenon partly reflects superior skills and know-how acquired abroad. For example, McCormick and Wahba (2001) study the employment experience of returnees to Egypt. Controlling for a host of factors including education level, they find that the return migrants had a much higher probability of being self-employed and they attribute this phenomenon to savings and skills acquired by the migrants while abroad. A recent survey by the IOM of return migrants to Ghana and Ivory Coast also reports that many return migrants were keen to start their own business ventures as opposed to working for others so as to implement new ideas, managerial and technical know-how they had acquired abroad.

There are also a number of studies which show that on their return migrants bring back valuable “social capital”. In one of the earlier studies, Saloutos (1956) argued that return migrants to Greece brought back new ideas on democracy, social behavior, liberal business practices, etc. Subsequent studies confirmed significant differences between natives and return migrants in Greece with respect to such ideas (Bernard and Comitas, 1978). The importance of leadership and social capital should not be under emphasized as it is crucial in the transfer of financial and human capital from the rich to poor countries through return migration (Faist, 1997). Existing evidence tends to support this view. For example, the IOM survey in Ghana and Ivory Coast referred to above documents a number of returnees claiming to benefit from social capital, etc., acquired abroad. A 40 year old Ghanaian who after returning from the U.S. launched a now-well established consulting firm stated that: “People have come back with different experiences and in

⁵ Temporariness of the skilled is not always a costless process and may even be undesirable (for global welfare) in some cases where (re)training cost is high, learning periods are long or the cumulative learning from continued stay in the host country may be very large. However, for many lower skilled, semi-skilled and some highly skilled professions, transfer of knowledge through temporary migration is likely to be an important benefit.

fact most of the returnees that I'm aware of have come back to set up their own business, and I think they have been relatively more successful setting up their businesses because ... I think you have an advantage when you're traveled and you've come back, you are willing to take more risk, you are willing to push what you are doing."⁶

These benefits of enhanced skills and knowledge need not be restricted to those who migrate only. That is, return migrants can pass on at least some of this knowledge to other Zambian doctors which is an additional gain to the source country. Of course, such transfers can occur under permanent migration also but it requires elaborate schemes such as RQAN and goodwill of the migrants.

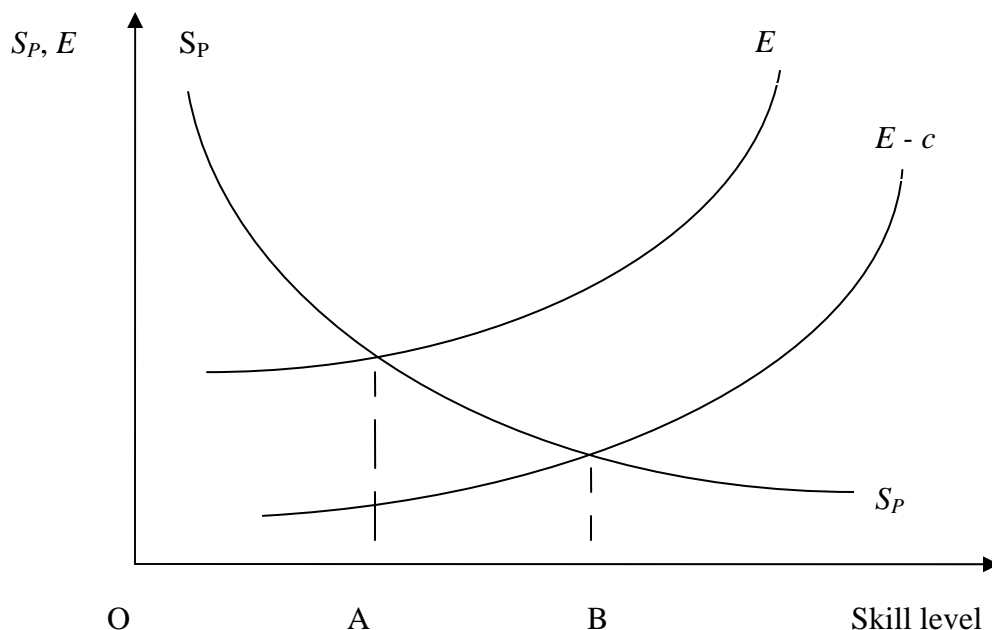
The third reason why temporariness could be attractive for Zambia relates to its egalitarian nature. Permanent migration involves only 300 doctors earning higher wages abroad and permanently so. In contrast, under temporary migration, such benefits would be distributed over a much larger section of the population. From an individual migrants' point of view, permanent migration is high-risk and high-return as very few get a chance to work abroad but those who do earn higher wages for the rest of their life. On the hand, temporary migration is low-risk and low-return since more people get a chance to work abroad but over shorter periods. If agents are risk averse, and could choose which type of migration should be allowed in general, then temporary migration may well be the preferred choice in a political equilibrium.

Two related questions which remain to be answered relate to the host country's incentive structure and the feasibility of implementing a temporary migration regime. We discuss these two issues below.

Host country incentive structure: Generosity vs. self-interest

Evidence on host's preference between temporary and permanent skilled migration seems to be mixed. On the one hand, there are concerns about permanent immigration and most international negotiations focus only on temporary migration. On the other hand many developed countries have created channels through the broader migration policy which allow temporary migrants to become permanent residents. The main concern of the host about permanent rather than temporary migration is that the former involves additional socio-cultural and economic costs of the type discussed for the unskilled permanent migrants above. Let S_p denote this cost. That is, replacing one would-be permanent migrant by a temporary one increases host country's social welfare by S_p units. The main advantage of permanent migration is that it allows host country to extract some surplus from investing in the migrants' skills. For example, in a two period game, a firm may like to invest in providing firm-specific training to a migrant in period 1 which increases his efficiency in the next period. Consequently, the firm can extract part of the surplus in the second stage. Suppose the surplus so extracted equals E while the cost of training to the firm equals c . Of course, values of E , c , S_p will vary across migrants depending on various characteristics with perhaps the skill content of the migrant (profession) being most important. The following graph illustrates the point.

⁶ Reported in Ammassari (2003), page 10.



The graph shows that S_P decreases with the skill content of the migrant. One reason for this could be that the more skilled and educated are able to integrate more easily with the natives of the host country and impose less of a long-term fiscal burden. Similarly, training opportunities tend to rise with the skill level of the migrant suggesting that the surplus ex post (E) and ex ante ($E-c$) are higher the more skilled a migrant is. This gives us the two upward sloping curves. Clearly, viewed at the beginning of period 1, the host prefers permanent over temporary if and only if $E-c > S_P$ which is the region to the right of B. The opposite holds for migrants with skill level less than B and hence the host prefers them for a temporary period only. However, at the beginning of period 2, the cost of training is already sunk and therefore the benefit from retaining a trained migrant is E rather than $E-c$ while the cost remains S_P . Applying the same logic again, the host would like to retain all migrants with skill level to the right of A where the ex post benefit is higher than the cost of permanent migration and repatriate the remaining ones with skill level less than A.

The analysis above has the following implications about the feasibility of a temporary migration regime. For skill levels less than A, the host prefers temporary migration only and this is also the equilibrium outcome. Thus, temporariness is guaranteed here. For migrants with skill level higher than B we get that the host would ideally like to keep them permanently and this is also the equilibrium outcome. Thus, repatriation of these migrants would require an element of generosity on the part of the host country. For migrants with skill levels between AB the host would ideally like temporary migration since the overall benefit from keeping them permanently ($E-c$) is less than the associated cost (S_P). However, such a policy is clearly time inconsistent: since ex post the benefit (E) is higher than the social cost, the host will be tempted to do retain them permanently. Private firms can foresee this temptation and indulge in privately beneficial but socially detrimental (to host) training of the migrants. Clearly, for these migrants there is a clear case of mutual benefit to both the countries in ensuring

their temporariness. One way to do so is through a bilateral agreement between host and source involving an ex ante commitment by host to repatriate all such migrants.

For certain skill levels host countries prefer temporary over permanent migration. However, they cannot implement such a policy on their own. The net outcome is too much permanent and too little temporary and overall migration. Source countries like Zambia can help build a credible regime ensuring temporariness in such cases. Source, host and the migrant community in the aggregate are all better off as a consequence.

For skill levels above a critical threshold level, temporariness can be achieved only through the generosity of the host countries.

Successful implementation of migration policies has always been a problem perhaps because of the sensitive nature of migration. However, the problem of ensuring timely return is probably less of an issue with the migration of the skilled. Most of skilled migration occurs through legal channels and skilled migrants are typically employed in the formal sector. Consequently, the cost of monitoring their timely return to host is less and the benefit from overstaying to migrants is also less due to reduced work opportunities in the formal sector. Of course, host countries' involvement in ensuring temporariness is vital because there is very little that source countries can do on their own in this respect. An ex-ante commitment by host, perhaps through a bilateral agreement with the source country, to keep migration truly temporary is crucial. Such a commitment based migration regime provides a greater degree of certainty and clarity, it avoids the tendency for host to act opportunistically, ex post, to keep the immigrants permanently and it also promotes the self-selection of immigrants who are more disposed towards a temporary stay only. The resulting migratory flows would suffice to meet the labor shortages in the host countries, allow source countries and migrants to reap the benefits of migration and avoid the adverse effects of brain drain. While it does go against the individual migrants' incentive to settle abroad permanently but the migrant community in the aggregate stands to gain since a much larger number of (rotating) workers get an opportunity to work abroad. A model bilateral agreement aimed to achieve these objectives follows.

Box 3. A model agreement for the migration of the skilled

Host country obligations:

- 1) Submit a list of vacancies to the source with details on required qualifications, duration of employment, working conditions, the rights of the migrants and a copy of the contract between the employer and the prospective migrant.
- 2) Employers found in violation of the terms of the contract would be banned from taking part in the program in the future.
- 3) Allow migrants while in the host country to enroll in training programs to enhance their skills.
- 4) Extension of the initial duration of employment must involve the migrant spending at least 3 years in the source country from the termination date of the initial duration of the contract.
- 5) Facilitate the temporary movement of Zambian professionals in those areas where on-the-job learning opportunities are high subject to available vacancies and labor market tests that may be in place.
- 6) Visa overstayers would be barred from taking part in the program in the future.

Source country obligations

- 1) Establish an agency where prospective migrants could submit their applications. Maintain a database with all relevant information accessible to the employers in the host country.
- 2) Disseminate information on qualifications required to work in the host country and other information to facilitate migratory flows in the future.
- 3) Facilitate the process of screening applicants, recruitment, security clearance, pre-departure orientation, obtaining visa and other travel documents.
- 4) For migrants currently working in the public sector: an ex-ante commitment to re-hire them on their return.

Gains from cooperation

- 1) Source country has a natural advantage in the screening and recruitment of migrants which lowers the cost of hiring to employers.
- 2) A stable and secure source of skilled workers to the host. With heightened security concerns after 9/11, Zambia can play an important role in ensuring that the prospective migrants do not pose a security threat to the host.
- 3) Difficult for migrants to overstay knowing that the host is committed not to renew their visa for upto 3 years. Human capital accumulated by the migrants during their stay is now transferred to the source country.
- 4) Migrants are deprived of the opportunity to stay permanently but this is more than compensated by a much greater number of rotating migrants who get to spend time abroad. In the aggregate, the migrant community is likely to benefit.

Box 4.**Past experience**

Zambia can draw some lessons from the past experience of countries with the migration of the skilled. Usually, cooperative agreements between source and host countries do specify temporariness of the initial employment opportunities but they do not guarantee against long-term or permanent migration, as for example through extensions of the initial employment contract or an alternative employment offer. This is a key difference from our proposal.

Poland and Netherlands launched a joint pilot project titled “Polish Nurses in the Netherlands; Development of Competencies” for the recruitment of Polish nurses to work in Netherlands. The stated objective of the project is twofold: to make a contribution to the personnel shortages of the Dutch health institutions and to enhance the competence of Polish nurses. The project involves temporary migration of Polish nurses for a period of upto 2 years. Furthermore, proper preparation before departure (including language training) was required and the governments committed themselves to facilitate also the process of return and reintegration in the Polish labor market. A recent evaluation of the project by the IOM shows mixed results both in terms of return migration of the nurses to Poland and knowledge acquired while working in the Netherlands.

The Seasonal Agricultural Workers Scheme (SAWS) in the U.K. is another example of beneficial skilled migration. SAWS permits non-EEA nationals enrolled in full-time university studies and aged between 18 and 25 to work in agriculture and horticulture in the United Kingdom. The annual quota for the scheme has been increasingly rapidly over the years with the figure at 25000 for 2003. The main sending countries under the program are Poland, Ukraine, Bulgaria, Lithuania with India and Ghana making some inroads of late. Currently there is no limit to the number of times young people can participate in the program as long as they return to their home country for a minimum of three months. Participants are allowed to work on farms and can earn on average a net income of GBP200 per week. The main attraction of such schemes to source countries like Zambia is that they provides an opportunity for Zambian students in agriculture to learn new technologies and methodologies in the U.K. and apply them to Zambia on their return (OECD, 2004).

South Africa and the U.K. signed a bilateral agreement in 2003 to facilitate exchange of information, advice and expertise in the area of healthcare. Currently, the agreement does not address the issue of the broader economic migration of healthcare workers from South Africa to the U.K. but it does promise an ex ante commitment by the two countries to keep the exchange of professionals truly temporary. It is noteworthy that the agreement was in part inspired by South Africa’s concern over the drain of health care skills to the U.K. Zambia could cooperate with other sending countries like South Africa to negotiate temporary migration agreements for the international movement of key professionals.

Appendix

Table A1: Net Immigration Figures*

Country/Region	Net immigration in 1990 (per 1000 population)	Net immigration in 2000 (in thousands)	Net immigration in 2000 (per 1000 population)
Burundi	-8.5	-80	-12.9
Comoros			
Djibouti	-11.4	4	6.8
Eritrea	-22.5	2	0.6
Ethiopia	3.5	-7	-0.1
Kenya	1.7	-3	-0.1
Madagascar	-0.1	-1	..
Rwanda	-58.4	395	62.8
Seychelles	-1.7	121	1.5
Sudan	-0.8	-77	-2.6
Uganda	1.4	-14	-0.6
DR of Congo	4.9	-340	-7.1
Malawi	-17.1	-9	-0.8
Mauritius	-3.1	-2	-2
Zambia	-0.1	14	1.4
Zimbabwe	-3.3	-3	-0.2
Eastern Africa	-1.5	278	1.2
Southern Africa	0.4	-13	-0.3
North Africa	-1.3	-261	-1.6
Africa	-0.6	-447	-0.6
Less Developed Regions	-0.6	-2321	-0.5

Source: International Migration Report 2002, UN.

* Figures for 1990, 2000 represent averages for 1990-95, 1995-2000, respectively. Figures for migration in Seychelles are compiled from Migration and Tourism Statistics, 2002 and the population data is taken from WDI.

Table A2: Average annual net remittance inflows: 1994-01

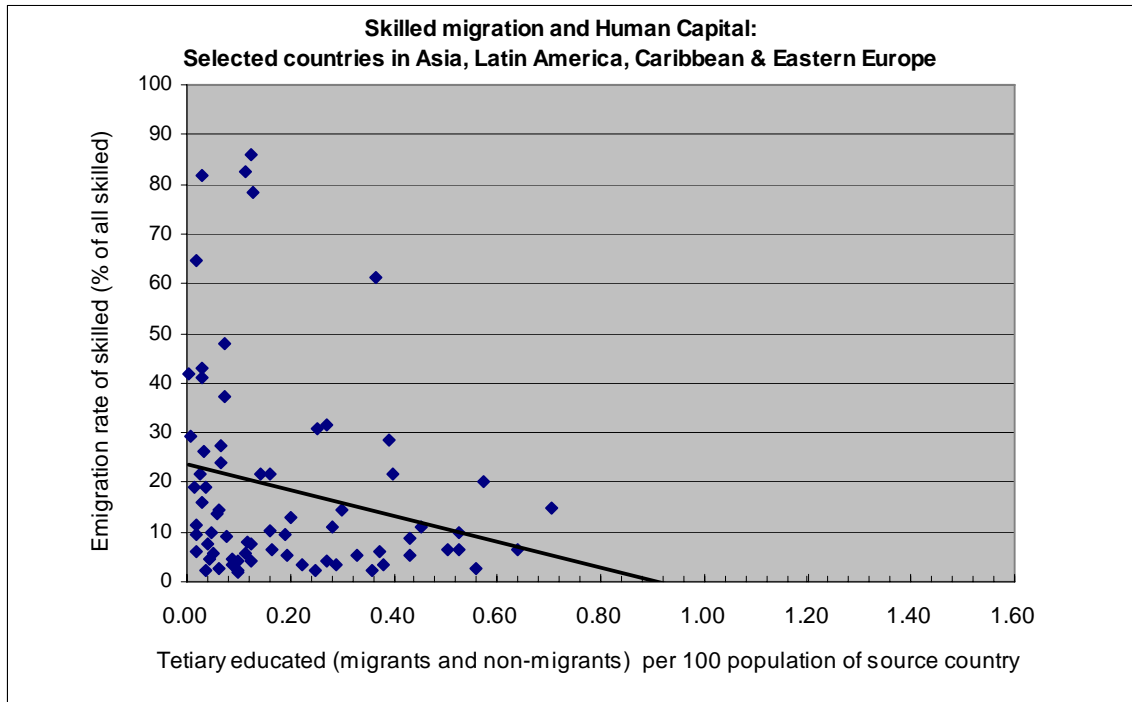
Country	Total: US\$, millions	Per capita	% of GDP
Zambia	20.7	2.13	0.66
Ethiopia	53.0	0.84	0.82
Madagascar	19.1	1.27	0.51
Rwanda	13.6	1.82	0.7
Seychelles	0.3	3.70	0.05
Sudan	479.1	15.54	4.5
Uganda	317.8	14.08	5.33
Total (All countries above)	882.8	6.36	3.01
Sub-Saharan Africa	2957.1	4.6	0.92

Source: IMF, UN Wall Chart, GDF, 2003 and WDI. Per capita and % of GDP Figures are obtained by dividing the total remittance figures with population and GDP figures for countries for the year 1999.

The corresponding per capita remittance figures for some other countries stood at 9.3 (India), 67 (Mexico), 80 (Philippines), 79 (Morocco), 32 (LAC region) and 10.3 (World⁷). As % of GDP, the corresponding figures in some other parts of the world are 0.9% (LAC region), 2.1% (India), 7.9% (Philippines), 1.4% (Mexico), 6.3% (Morocco), 4.1% (Mozambique) and 0.2% (World). Thus official inward remittances in Zambia are at best modest.

⁷ Based on the figures for World remittances and population provided by the UN Wall Chart for 2000.

Appendix B



References

- [1] Ahlburg, Dennis and Richard P.C. Brown (1998), "Migrants' Intentions to Return Home and Capital Transfers: A Study of Tongans and Samoans in Australia," *Journal of Development Studies*, 35(2), pp. 125-151.
- [2] Ammassari, Savina (2003), "From Nation-building to Entrepreneurship: The Impact of Elite Return migrants in Cote d'Ivoire and Ghana," *mimeograph*, International Workshop on Migration and Poverty in West Africa, University of Sussex.
- [3] Amuedo-Dorantes, Catalina, Cynthia Banska and Susan Pozo (2005), "On the Remitting Patterns of Immigrants: Evidence from Mexican Survey Data," *Economic Review*, First Quarter, Federal Reserve Bank of Atlanta.
- [4] Barrett, Alan and Phillip J. O'Connell (2000), "Is There a Wage Premium for Returning Irish Migrants," *IZA Discussion Paper* No. 135.
- [5] Bernard, H.R. and L. Comitas (1978), "Greek Return Migration," *Current Anthropology*, 19(3), pp. 658-59.
- [6] Brown, Rochard P.C. (1997), "Estimating Remittance Functions for Pacific Island Migrants," *World Development*, 25(4), pp. 613-626.
- [7] Brown, Richard P. and John Connell (2004), "The Remittances of Tongan and Samoan Nurses from Australia," *Human Resources for Health*, 2(2).
- [8] Docquier, Frederic and Abdeslam Marfouk (2004), "Measuring the International Mobility of Skilled Workers (1990-2000)," *Policy Research Working Paper* 3381, The World Bank, Washington, D.C.
- [9] Fairchild, Stephen T. and Nicole B. Simpson (2006), "Variation in the Remittances of Mexican Migrants Across U.S. Regions," *mimeograph*, Department of Economics, Colgate University.
- [10] Faist, T (1997), "The Crucial Meso-level," in T. Hammar, G. Bochmann, K. Tamas and T. Faist edited **International Migration, Immobility and Development**, Oxford.
- [11] Funkhouser, Edward (1995), "Remittances from International Migration: A Comparison of El Salvador and Nicaragua," *The Review of Economics and Statistics*, 77(1), pp. 137-146.
- [12] Galor, O. and O. Stark (1990), "Migrants' Savings, the Probability to Return Migration and Migrants' Performance," *International Economic Review*, 31, pp. 463-467.
- [13] Glytsos, Nicholas P. (1997), "Remitting Behavior of "Temporary" and "Permanent" Migrants: The Case of Greeks in Germany and Australia," *Labour*, 11(3), pp. 409-435.
- [14] Grieco, Elizabeth (2004), "Will Migrant Remittances Continue Through Time? A New Answer to an Old Question," *International Journal of Multicultural Societies*, 6(2), pp. 243-252.
- [15] Hatton, T.J and Williamson, G. Jeffrey (2001), "Demographic and Economic Pressure on Emigration Out of Africa," *IZA Discussion Paper* No. 250.
- [16] IOM (2005), "Migration and Development: New Strategic Outlooks and Practical Ways Forward – The Case of Angola and Zambia," *IOM Migration Research Series* No. 21, International Organization for Migration.
- [17] McCormick, Barry and Jackline Wahba (2001), "Overseas Work Experience, Savings and Entrepreneurship Amongst Return Migrants to LDCs," *Scottish Journal of Political Economy*, 48(2), pp. 164-178.
- [18] Merkle, Lucie and Klaus F. Zimmermann (1992), "Savings, Remittances and Return Migration," *Economics Letters*, 38, pp. 77-81.
- [19] MoH (2005), "Human Resources for Health Strategic Plan (2006-2010)," Ministry of Health, Republic of Zambia, December.
- [20] OECD (2004), "Migration for Employment: Bilateral Agreements at a Crossroads," OECD.
- [21] Rosenzweig, Mark (2005), "Consequences of Migration for Developing Countries," *Working Paper*, UN/POP/MIG/2005/08, United Nations Expert Group Meeting On International Migration and Development, Population Division, United Nations.
- [22] Saloutos, T (1956), **They Remember America: The Story of Repatriated Greek American**, University of California Press, Berkeley.
- [23] Taylor E. (1976), "The Social Adjustment of Return ed Migrants to Jamaica," in F. Henry edited **Ethnicity in the Americas**, Mouton, The Hague, pp. 213-230.

[24] Thomas-Hope E (1999), "Return Migration to Jamaica and its Development Potential," *International Migration*, 37(1), 183-207.

[25] Winters, L. Alan, Terrie L. Walmsley, Zhen Kun Wang and Roman Grynberg (2002), "Negotiating the Liberalization of the Temporary Movement of Natural Persons," *Discussion Paper 87*, University of Sussex, Brighton.