

BRAIN DRAIN MIGRATION

by Robin Cohen

The expression 'brain-drain migration' was popularised in the 1960s with the loss of skilled labour-power from a number of poor countries, notably India. Of particular concern was the emigration of those with scarce professional skills, like doctors and engineers, who had been trained at considerable expense by means of taxpayers' subsidies to higher education.

It is impossible for political reasons to forbid emigration. This was a strategy closely associated with the repressive regimes in the Soviet Union and East Germany and would not be feasible or acceptable in virtually any country today. What, then, are the possible solutions to the brain drain?

1. Emigration can be *delayed*. Normally, delay strategies involve some element of public service. For example, doctors may be asked to stay on for two years after their training to 'pay back' what they 'owe' to society. A more sophisticated strategy is to incorporate delay within the training period, thus ensuring that certification follows rather than precedes a spell of public service. (This is the position advanced by South Africa's Minister of Health.)
2. Emigration can be *inhibited* either in the destination or source countries. The main constraints in the destination countries are the labour market and immigration policies, but at high skill levels another important consideration is the portability of qualifications. Increasingly, this inhibition is falling away as educational franchise operations and international certification expand. Emigration can be inhibited in the source countries by developing special privileges for scarce groups through pay incentives, enhanced research budgets and laboratory and hospital subsidies.
3. A relaxed, market-driven solution is to ignore the emigration of skilled workers and let a brain-drain from poorer countries replace lost skills.
4. A more interventionist variation of the market solution is to recruit in target countries while developing immigration incentives. (In Canada, for example, foreign doctors working in rural areas are given accelerated immigration status.)
5. It might be possible to reduce the negative effects of the brain-drain by promoting links with skilled nationals and former nationals abroad (see below).

None of these five solutions is without its attendant problems.

South Africa's special situation

Human resource development is backward in South Africa with skills highly skewed to the white minority. The majority is barely literate and often unskilled. In a 1993 survey South Africa was ranked last in human resource development in a list of 14 comparable economies (World Competitiveness Report, Geneva, 1993).

On political grounds emigration might be welcomed as opening up opportunities for representatives of the historically disadvantaged population groups (HDPGs), who have been permitted limited social mobility in the past. In economic terms, however, such a strategy is long-term and expensive and may result in short-term breakdowns in the delivery and quality of services. All patients would prefer to be wheeled out of an operating theatre alive, while all road users would expect that the bridge they drive over will remain upright whatever the ethnic origin of the surgeon or engineer.

While there are excellent reasons to enhance and diffuse high-level skills, policy must be predicated on the premise that current training capacities are not damaged and that a managed rate of retirement is preferable to high rates of emigration and the consequent disequilibria in the delivery of services. Replacement rates from the HDPGs are likely to be very slow in some key areas and these cannot fundamentally improve until Mathematics and Science examination results show better rates for African students. (In 1993, 93,4 per cent of the 366 501 African matriculants either did not sit or failed Mathematics -- South African Science and Technology Indicators, Foundation for Research Development, Pretoria, 1996.)

The authors of successive reports (for example, Discussion Document on a National Training Strategy: National Training Board 1994) have argued that the provision of education and training should meet the economic and social needs of the country as well as enhance the individual's choice. The National Commission on Higher Education (1996) said that 'there is a chronic mismatch between higher education's output and the needs of a modernising economy'. The Commission advocates an increase from 800 000 students in 1995 to 1 500 000 in 2005 (30 per cent of the 20-24 year-old cohort), most in the science, technology and engineering areas. With a poor skill and educational legacy, together with a sluggish economy, it is at least doubtful that this target can be reached. Thus, until 2005 and probably beyond, existing stocks of skilled personnel will remain highly valuable assets to the national economy.

Skilled emigrants from South Africa

The data produced by the Central Statistical Office (the latest, under the series PO351, is dated August 1996) are of some help if used carefully. The number of emigrants over the period January-August 1996 is 7,237 compared to 6,030 for the same period in 1995. Net losses were - 3,930 and - 2,744, again over the same periods. Though the recorded number of emigrants is small, the figures are certainly a gross underestimate of those with skills leaving without declaring that emigration is their primary intention. If one combines data from training centres (for example medical schools), from destination country immigration statistics and from data on 'tourism', it is evident that a large number of intending and potential emigrants are not tabulated. Two-year training schemes in Canada and (since the re-entry of South Africa to the Commonwealth) in Britain are also attractive to South African graduates and an unknown number of these trainees do not return.

Despite the absolute numbers being under-recorded the official data are suggestive in other ways:

The trend lines are probably accurate in showing peaks during periods of political instability Sharpeville, the Soweto disturbances and the 1994 election and a flattening effect with the restoration of public confidence in the constitutional political process (PO351 July 1996 p. 3).

The proportion of skilled emigrants shown in each occupation is likely to be right with the probable exception of doctors and dentists who remain in great demand internationally and are more likely to be accepted on training schemes. Medical personnel also seem more prone to under-declaring their emigration intentions.

Even the under-recorded data show that there is a large deficit in the number of *economically active* people arriving compared with the number leaving. Thus, although there seems only to be a small net loss of migrants, this statistic is more serious when we consider that nearly two-thirds of immigrants are declared not to be economically active.

Sectoral discussion (% emigrants in key professional occupations Jan.-July 1996)

1. *Education and related* (34%). This is the biggest single category and reflects both the attractive possibilities for early retirement available in this sector as well as the buoyant demand for teachers in Australasia. The replacement rates in this sector from the HPDGs are high, particularly in nursery, primary and the younger classes of secondary schools. However, at the top of the secondary and throughout the tertiary sector notable gaps in recruitment are visible. Again, the category is too undifferentiated and includes valuable academics with distinctive skills and international reputations and economists trained to a high professional level (Cape Times 27 Nov. 1996).
2. *Engineers* (29%). A representative of the Chamber of Mines informed us that it was only possible to maintain a steady supply of skilled surveyors, metallurgists and engineers by heavily subsidising the salaries of senior academic staff teaching in these fields. It was difficult to fill the gaps that none the less arise by foreign recruitment as the Home Affairs Department was very slow in providing work permits. A representative of the South Association of Consulting Engineers (which predominantly represents small companies) says there is currently an oversupply of engineers, but this will stabilise as public projects at a provincial or municipal level come on stream. The statistical data also show that many of the officially recorded emigrant engineers are of retirement age. In short, there seems to be no reason to be particularly concerned about the brain-drain in this sector.
3. *Accountancy* (24%) Very large numbers of accountants are leaving the country. The professional association reports that some firms in Johannesburg are having difficulty recruiting articled clerks. Given that the entry to the profession requires a reasonable proficiency in mathematics, replacement rates from the HPDGs are poor. It is interesting to observe that post-matriculation vocational choices among historically *advantaged* groups include a strong awareness of the international portability of accountancy qualifications. A useful indicator of the number of South African accountants overseas could be obtained by contacting the Association of Auditors, who keep a register of foreign-based members. (I did not have an opportunity to check this.) Some of the slack can be taken up by 'skilled transients' (see paper on International Migration: a Global Perspective) who arrive bundled with foreign investment packages. None the less, some degree of targeted recruitment of immigrant accountants seems advisable.
4. *Medical and Dental* (13%) There is now a wide-spread agreement that the PHC (primary health care) approach is the right way forward in health provision. As the Higher Education Commission (1996) put it: health personnel should be equipped with the 'knowledge, competence and attitude to respond comprehensively to the health care needs of the population'. Despite this consensus, the prestige, financial rewards and portability of high-tech, research and laboratory-intensive medicine are powerful incentives to emigration. Although officially forming only 13 per cent of the brain drain, health personnel are certainly leaving in greater numbers than this percentage suggests. Information from medical schools suggest that about one-third to one-half of the graduating classes are emigrating, either temporarily or permanently. Perhaps surprisingly this is true too of medical graduates from the University of Stellenbosch. Some newly qualified personnel go abroad to enrich their experience, pay off their debts and start some savings in a hard currency. Such temporary emigration is acceptable and may even be positive, but the detailed inward and outward flows of medics and dentists are unknown and need further detailed study.

Brain gain

If a brain-drain begins seriously to affect the quality and delivery of public and private services there are, as previously suggested, two obvious solutions (a) make it worthwhile for highly-trained professionals to stay and (b) replace them with competent locals at a rate as fast or faster than their departure ('brain train'). Another solution is to devise strategies of 'brain gain'. These can take three forms:

5. *Recruiting abroad in key segments.* The use of Cuban doctors in rural settings is one important example. This experience also provides a useful learning experience. Imported personnel need to be carefully recruited and publicly certified to ensure that their skills meet local standards and induce local confidence in their abilities. (I am informed that the medical profession *has* exercised its certifying powers responsibly and that the level of malpractice complaints against Cuban doctors is not abnormally high.) On the other hand, it has to be carefully established whether chambers, guilds, professional associations and certifying bodies are acting in restraint of trade, thereby driving up the costs of their services to clients, patients and consumers. At the vocational level and also in higher education, Industry Training Boards and admissions officers, who are used only to dealing with internal qualifications, need to build up adequate expertise to assess foreign qualifications.
6. *Return of Talent.* During 1992/3 the Pretoria office of the International Organisation for Migration (IOM) ran a small programme called 'The Return of Talent Programme'. IOM managed to recruit 52 South Africans abroad, 75-80 per cent of whom have stayed. Because the numbers were very small programme was suspended. None the less the moral-building and demonstration effects of persuading prominent individuals to return to their homeland may make it worthwhile to reassess this programme.
7. *The construction of a brain gain network.* South Africa is unusual in not effectively encouraging the use of its diaspora in contributing to development at home. (For example 80 per cent of recent foreign investment in the People's Republic of China came from overseas Chinese.) The construction of a register of South Africans abroad, the promotion of joint research and teaching posts, the use of medical specialists in periodic return visits, short-term training assignments and even systematic professional and research collaboration on electronic networks all these could be effective ways of harnessing the skills of some of the distinguished scientists, medics, artists and educators with South African origins living abroad. (I strongly recommend that an initiative along these lines by the Science and Technology Policy Research Centre at the Hiddingh Campus, UCT, be supported.)

Summary and recommendations

There are a number of general solutions to a brain drain, all of which are worth considering in the South African case.

The significance of the brain drain varies by occupational sector and it is not necessarily the case that the higher the number, the more salient the loss.

Some projections for replacement brain-power from the HDPGs seem to me to be overoptimistic, especially because of the poor results at school level in respect of mathematics and science.

In some specialised areas selective foreign recruitment would seem to be justified as a bridging measure, provided recruits meet local standards and expectations.

There seems good reason to delay the training of medical personnel, or to provide incentives for them to stay, in order to ensure their contribution to society. However, I have heard highly negative remarks about the implementation of current policies. If these are seen as too punitive they may be self-defeating in propelling one-way permanent movement and ensuring a lack of co-operation with a brain gain network.

Imaginative ways need to be sought to harness South Africans world-wide to the development needs of their home country.