



**Tenth Malaysia Plan Brain Gain Malaysia**  
**Programme Workshop:**  
The Challenge of Converting Brain Drain into Brain Gain  
for Developing Countries

Paper by

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## **Introduction**

Skilled migration has been subject to a great deal of analysis and debate since the 1950s and 1960s. Prominent economists, thinkers, politicians, private sector entrepreneurs, and academics have repeatedly expressed their views on the adverse consequences of the brain drain associated with skilled human migration and the erosion of national competitiveness in developing countries which results from this phenomenon.

What has most often emerged from this debate are either short term policy measures or ill conceived reactions to stem this tide. Proposals for a "brain drain tax", that is, a tax on skilled migrants and for the establishment of a World Migration Organisation to manage migration flows in the interests of developing nations have also been amongst the suggested remedies.

Skilled migration continues to take place regardless of the remedies that have been attempted since it is part and parcel of the globalization process. In fact, such migration has been on the rise in the past few decades.

Interestingly, since brain drain is almost impossible to stop, a new line of thinking has gained ground in the past decade which has significantly shifted the emphasis away from the concept of brain drain to concepts of brain gain, brain exchange, and brain circulation. This new line of thinking had led to an increasing number of developing countries beginning to look at their skilled overseas diaspora as an asset that can be tapped for the development of the home country.

Thus, instead of preventing emigration of skilled workers, many governments have now turned to examining ways in which they can leverage their diaspora networks and expatriate communities for their own benefit, in addition to exploring ways of better managing migration flows to serve their national interest.

## **New Mindset and Global Policy Shift**

The policies adopted by developing countries with regard to the migration of their highly qualified citizens is perhaps best summarized through two basic approaches, both of which are equally relevant and should not be viewed as in contradiction to each other.

The first one, the brain drain approach, looks at the negative effects of migration - that is a loss of skills for the country of origin and its response to this. The second one, the brain gain approach, focuses on the positive aspects of brain drain (i.e. the existence of highly skilled migrants abroad) and emphasizes opportunities to use this highly skilled diaspora for national interests.

Both approaches have produced a plethora of policy options. Countermeasures to brain drain have often focused on three options: taxation (compensatory financial measures); regulation of flows through international norms; and control of emigration.

Taxation received much attention during the second half of the 1970s and the early 1980s, but lost its appeal by the late 1980s.

Regulation through international norms was proposed by organizations within the United Nations system but this has not been enforced because developed countries generally still apply selective immigration policies with regard to highly qualified manpower.

Restrictive policies aimed at retention or recuperation of skilled people have been and are still being implemented in many developing countries. But the scope of this option as well as its success has been limited since it often seeks to reverse outflows without addressing the root causes of the problem.

In recent years, two alternative strategies have emerged, namely the 'return option' and the 'diaspora option'.

The first to emerge was the 'return option'. Though this option was first pursued at the beginning of the 1970s, it increasingly came to the fore in the 1980s and 1990s.

The return option makes a significant departure from restrictive policies in one critical way: it is by design a part of a larger and more comprehensive development policy which often integrates scientific, technological and economic dimensions.

It is not by chance or coincidence that the most successful cases of return policies are found in the newly industrialized or industrializing countries (NICs), countries which have vibrant Science and Technology and industrial sectors that are already quite advanced, where skilled people have many possibilities for innovative and productive pursuits (such as India, Singapore, the Republic of Korea and Taiwan, province of China).

The diaspora option is more recent. As a brain gain strategy it differs from the return option because it does not aim at the physical repatriation of nationals living and working abroad. Its purpose is the mobilization of the diaspora's resources and their utilization for the country of origin's national development.

In practice, scientists and engineers may physically remain wherever in the world they are located since what matters is that they work for the government, research institutions or corporations based in their mother nation. This is primarily undertaken through formal, institutionally organized mechanisms.

Each of these new brain gain options have their advantages as well as their limitations. Both are insufficient in themselves: their success and effectiveness will depend very much on the internal dynamics of the home country and whether at least some of the root causes resulting in the initial skilled emigration have been adequately dealt with.

The following case studies from India and Columbia, as well as several examples of UNDP's experience in this area will illustrate some of the policies that governments have been trying to implement.

### **India: Experiences in Skilled Migration**

It is commonly known that India is a particularly important source country for skilled migration in sectors such as information technology (IT), engineering, and health care. Indian health care workers and software professionals provide services that are in short supply particularly in the US and UK. Shortage of nurses and doctors in the Middle East and in several developed countries like the UK have also led to contractual arrangements between the Indian and host country governments to facilitate the temporary entry of Indian medical and nursing personnel. In recent years, India has also experienced an increased incidence of return migration and a growing role of overseas Indians in its economy, especially in sectors such as IT and business process outsourcing (BPO). These trends have mainly been spurred by the phenomenal growth of these sectors in India in the past five to ten years to which such overseas Indians have also contributed.

Studies have shown that while there has been loss of human capital and public investment as a result of brain drain, the Indian economy has also reaped many benefits. These include upgrading of skills, increased productivity, technology transfer, alleviation of underemployment and unemployment, externalities such as the formation of social and economic networks, cross border investment flows, the establishment of new firms and subsidiaries of multinational companies (MNCs), and inducement of incentives for higher and technical education.

In the past few years, the Indian government has begun to appreciate these benefits and has introduced various initiatives to facilitate the participation of the overseas Indian diaspora in the Indian economy through trade, investment, and technology transfer and, to a more limited extent, by seeking to attract skilled migrants back through various financial and tax-based incentives.

Although much of the skilled migration from India to developed countries has tended to be permanent in nature, increasingly, there is a reversal of such flows. The recent recession and the rise in unemployment in North America is an additional important reason for increased return migration.

A more fundamental reason, however, are the improving economic conditions in India. Many overseas Indians want to return in order to contribute to and participate in India's growing and dynamic economy. Overseas Indians are increasingly viewing employment opportunities in India as being comparable to those in the US, especially since leading companies like Intel and IBM are now doing cutting edge work in India and India is becoming a global R&D hub in some important areas.

In other important sectors such as healthcare, the incidence of return migration is more limited. However, some surveys conducted among overseas Indian doctors suggest that there is high interest in return, especially among medical graduates from some of India's best institutions. While it is difficult to provide overall estimates of the number of returning doctors to India, there are numerous examples of reputed health care establishments having been set up by physicians formerly practicing in developed countries. Such establishments have in turn helped induce further return by Indian healthcare professionals based in other countries and have created opportunities for overseas doctors of Indian origin to contribute to India through visitations, research, and a myriad of collaborative arrangements.

Several key lessons can be deduced from an analysis of the trends that are taking place in India. However, the key point is that skilled migration has contributed positively to the Indian economy in several ways.

The most important contribution has been through remittances, transfers and financial savings. Skilled Indian migrants have also contributed to the Indian economy through investment and through their overseas networks. For instance, returnee Indian doctor entrepreneurs from the UK, US, and the Middle East and Indian diaspora associations in the medical profession have helped set up world class corporate hospitals and specialty health care establishments in India while also helping to raise the standard of health care through new initiatives such as patient counseling, computerized medical records, collaboration with overseas doctors and institutions, and the introduction of the latest technologies.

Professionals in other areas such as in software and engineering services have helped in providing venture capital for startup companies in India. They have helped the development of their sectors by selling India as a safe destination for investments to foreign investors, by bringing in projects, facilitating the outsourcing of services to Indian companies, providing contacts to overseas clients, and facilitating both the inward and outward movement of service providers.

Skilled migration and return has also contributed to skill and technology transfer. Surveys reveal that overseas experience in on-site projects in the IT industry helps employees to develop domain expertise in fields such as insurance, telecom, or energy, and domain knowledge in technology and applications. Such returnees are able to bring specialization and depth, and are also better placed to lead and educate teams working on projects in specific areas. The exposure of returning professionals to overseas clients and to new technologies and applications helps Indian IT companies undertake more diverse and up-to-date projects which require such expertise.

In the health sector, returning doctors bring back specialized skills and expertise in rare and niche areas for which training opportunities and expertise are not available in India. Also, since the majority has received further training abroad, there is upgrading of skills and knowledge by the returnees. There are other intangible benefits, including knowledge of quality processes, familiarity with the latest technology, often but not always a stronger practice of ethics and attitudes towards work, enhanced professionalism and transparency, better management practices.

## **The Role of the Indian Government**

The Indian government has not had any comprehensive policy to regulate skilled migration or to benefit in any directed manner from such labour flows. Its policies have varied across sectors and reflect both brain gain and brain drain considerations. This sector-specific approach is evident from the cases of the IT and health sectors.

In recognition of the important role played by the IT sector in terms of employment and export earnings, and the significance of cross border movement of professionals for India's IT sector, the Indian government has, however, tried to facilitate the temporary migration of Indian IT workers to other markets. Its liberal position towards migration of knowledge workers is also evident from the various incentives it has given software exporters through tax breaks, and the establishment of export processing zones and software technology parks with single window clearance for investment approvals.

The government has also been proactive in supporting the industry lobby on greater market access for Indian software professionals in bilateral trade negotiations with important destination countries like the US and in multilateral negotiations such as the mode 4 discussions at the WTO under the General Agreement on Trade in Services.

The government has also made limited attempts in recent years to retain IT talent in the country, mainly through the educational system and through collaboration with industry associations. Graduates are encouraged to stay back and develop their skills in India and to not leave for foreign destinations. This plan is targeted at IT graduates with entrepreneurial proclivity who are urged to commence their ventures in India. Thus, the education sector is being encouraged and galvanized as part of an overall strategy to retain talent.

The government's approach towards skilled migration in India's health sector has been largely guided by its concern over brain drain. The Indian government has in the past taken some steps to discourage overseas movement of Indian health care personnel, chiefly doctors, including through banning the US-ECFMG examination in the country. The government also stipulated that doctors going to the UK and the US for further training would have to obtain a no-objection certificate declaring that the training was essential for developing the country's health care system.

In addition, the government did not take any steps to sign mutual recognition agreements with key governments like the US and the UK. Existing mutual recognition agreements are with countries in Africa, the Middle East, Central Asia, and in regions to which migration occurs mostly on a contractual, short-term basis. Thus, the overall approach has been to discourage a permanent outflow of health service providers.

However, there has also not been any concerted effort to attract health care providers back to the country or to help reintegrate returning health care providers into the sector. Such steps have, nevertheless, been taken by individual private sector hospitals and institutions, which are the main employers of returning health care providers.

There has, however, been some effort by the government, since the opening up of the economy in the 1990s, to attract investment by the Indian diaspora in the health sector. Since 1996, hospitals and diagnostic centres have been accorded automatic approval for foreign equity participation of up to 51 percent. Investments by non resident Indian or migrant Indian investors have been given further special concessions, including automatic approval for investments of up to 100 percent foreign equity participation and exemption from import duties if at least 25 percent of the patients are offered free treatment.

There has also been a gradual shift in the Indian government's approach to skilled migration and the potential of its non-resident population since the opening up of the Indian economy. The underlying perception of skilled migration as constituting "brain drain" is changing to one of "brain circulation". This shift in perception is largely due to the various positive contributions made by non-resident Indians and returning Indians to sectors like IT, BPO, and healthcare, some of which have already been discussed by me in this talk.

In September 2000, the Ministry of External Affairs constituted a High Level Committee on the Indian Diaspora. The role of this committee was to examine the role of Persons of Indian Origin (PIOs) and Non-Resident Indians (NRIs) in India, including the rights and facilities to be extended to them in India, in order to recommend a broad and flexible policy framework to encourage their participation in the Indian economy.

Furthermore, special initiatives are being taken in the area of science and technology in view of the large pool of Indian science and technology professionals overseas. The objective is to strengthen networking with Scientists and Technologists of Indian Origin (STIOs) based abroad, including persons in industries, research laboratories, universities and scientific departments located in various countries as well as those successfully working as entrepreneurs in technology intensive businesses and as venture capitalists.

It is apparent that the Indian government is now increasingly trying to realize the benefits of its huge overseas diaspora population through investments, technology and skill transfer, networking and collaboration. It is, however, still too early to assess the impact of such initiatives. There is, however, no concerted and direct effort to attract back talent. Whatever attempts in that direction has been made are indirect and long term in nature. The main focus is on attracting diaspora investment rather than on return and retention.

### **The Colombian Experience: The Diaspora Option**

In the case of Colombia, the Government chose to focus on the diaspora option by mobilising their intellectuals abroad and their connection to scientific, technological and cultural programmes at home.

At the beginning of the 1990s, Colombia began to systematically and consistently explore this option, through the creation of 'the Colombian Caldas Network of Scientists and Engineers Abroad,' an initiative by Colombian researchers and university students residing abroad. It was one of the first projects in the world to reunite the scientific diaspora of a country, the aim being to link these highly skilled expatriates to scientific and technological activities in

Colombia. The creation of the network was based on the firm belief that the skills of the diaspora could significantly contribute to the advancement of Colombia's development objectives.

Studies of the Caldas Network have shown the viability of this new formation of expatriate élites, and in some cases, cooperation between its members which has endured and shown significant results. One of the first studies of the Caldas Network identified five types of contribution to Colombia's development objectives made by skilled in science and technology migrants abroad: among them, the design and implementation of public policies and participation in human resources development in science and technology.

One of the most important researchers in the Caldas Network argues that diaspora networks are engaged not only in scientific research but also in issues related to economic and cultural development. Moreover, their mere existence can provoke a new geopolitical context in which centres of knowledge production are created in the South, new efforts to attract scientific and professional élites emerge in industrialized countries of the North, and new circulation and migration routes are created.

The Caldas network is a hybrid entity. Apart from the decisive initiative by the Colombian Office of Science and Technology (Colciencias), various interdependent actions, within and outside Colombia, have played a crucial role.

There was a clear political will and a central decision from a public organization in Colombia which combined with local, often individual, expectations and attempts from outside the country to make this a reality. These changes were not only occurring at a discursive level; they were embedded in concrete moves sustaining their credibility.

In 1989-1990, the academic community in Colombia undertook an extensive and far reaching examination of the country's scientific directions. This so called "Mission of Science and Technology" brought all the public research programmes under review and their orientation toward the rest of society was reconsidered. This effort put the S&T sector at the heart of national development and it has achieved significant results.

A law on Science and Technology was issued and a National System of Science and Technology was created. A new institutional framework was designed. Colciencias, which formerly was mainly a body financing research projects, became a central agency whose mandate was to organize activities within the National System of Science and Technology and to ensure that such activities were developed in accordance with the National Plan in all other areas.

Last but not least, public funding for R&D activities increased by 400% in the following years. These elements are fundamental in the understanding of the diaspora option: its emergency is not an isolated phenomenon; it is intrinsically tied to the internal dynamics of a national community. A network of expatriate skills is an extension of it, not a substitute for it.

Since the 1990s, many countries and organizations have been putting into practice the diaspora option under various modalities: for example, UNESCO with a data base of Latin American expatriate scientists and engineers, Chile and Croatia through email lists, Venezuela with a scheme comparable to the Colombian one, Arab countries with a US based association, Tunisia through local associations and China in biological sciences.

There are indeed many ways to implement the diaspora option. However, two basic, related, questions remain: does it actually turn negative effects of migration into positive ones? And what are the possibilities to ensure its optimal utilization? The Colombian experience offers a clear positive answer on the first question and provides concrete perspectives on the second one.

### **Transferring of Knowledge through Expatriate Nationals**

The United Nations too has looked into the different means which developing countries can use to retain their skilled workers. The United Nations Development Programme (UNDP) introduced its Transfer of Knowledge Through Expatriate Nationals (TOKTEN) Programme in 1977. The Programme seeks to bring the knowledge, expertise and experience of expatriates back to their country of origin. The brain drain experienced by so many countries in the developing world can thus be converted to a repatriation of knowledge and know-how.

This mobilization effort, referred to as “reverse transfer of technology” or “Brain Gain”, was first introduced by Turkey when the program was under the auspices of the TOKTEN Global Unit of the UNDP. In 1994, the UNDP Executive Board decision 94/12 transferred the management of TOKTEN to the United Nations Volunteers (UNV) programme.

TOKTEN provides cost-effective technical services to enhance national capacities through the expertise of a country’s own expatriates living abroad. By circumventing some of the linguistic, logistical and cultural challenges faced by non-national service providers often deployed in development contexts, the TOKTEN system was a clear example of South-South cooperation at its best, one which transformed “capacity-building” from a noble development principle to meaningful development practice.

After a slow period, TOKTEN appears to be back in vogue, as UNDP Country Offices in post-conflict countries increasingly turn to this model including in Afghanistan and Vietnam.

The major developmental goal of Afghanistan’s TOKTEN programme has been to support national capacity-building efforts of the Afghan Interim Administration and the successor government. The TOKTEN UN Volunteers handle an ambitious mandate spanning governance, urban development, education, health, agriculture, natural resource management and gender issues.

They train trainers, provide technical assistance for financial management and aid coordination, create mechanisms of transparency, participation, inclusion, and flow of information, and implement ICT plans. Civil engineers and site planners work to improve Afghanistan’s urban transportation and communication systems.

On the education front, UN Volunteers serving under TOKTEN train teachers, develop education materials and curricula, strengthen required skills for employment, and ensure access to education resources and services. Health service professionals train medical personnel and community health workers on the latest scientific techniques and preventative care, address malnutrition problems, and help to establish effective policies to broaden access to health services. UN Volunteers serving under TOKTEN also work to reverse environmental degradation and improve agricultural practices to increase productivity and strengthen marketing capabilities.

While not every country has a sufficient expatriate population for a successful TOKTEN programme, Viet Nam, like Afghanistan, was well placed to benefit from its many nationals living overseas, primarily in Australia, Canada, France and the USA. The country took advantage of this wealth of expatriate nationals and placed 20 TOKTEN consultants in Viet Nam between 1990 and 1992. For the subsequent decade, Viet Nam utilized its wide pool of expatriates to build capacity and made much developmental headway. In 2001, Viet Nam refurbished its TOKTEN programme, creating a website and database to promote the programme overseas.

Over the next few years, the programme proved so successful that the Vietnamese government decided to continue the initiative under its own aegis. Collaboration between the government and UNV/UNDP officially ended in 2003 based on the conclusion that the TOKTEN objectives had been met with flying colours and sustainable mechanisms had been created for future development.

## **Conclusion**

Whatever the programmes or policies used to prevent brain drain or promote brain gain or circulation, there is clear potential for individuals in the diaspora to act as agents of development. The knowledge and resources of highly skilled emigrants can, in effect, contribute to the fight against poverty and help improve the quality of life for those individuals who remain in their countries of origin. There remains, however, considerable scope for improvement in how this is done in a more systematic and coherent manner in order to serve the greater national interest of developing countries. The national policy framework and dealing with root causes of skilled emigration in countries of origin remain key to success in this area.

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