

BIBLIOGRAPHIC INFORMATION

Title	Attracting Scientific And Technical Talent From Abroad: Lessons For Malaysia
Source	http://phuakl.tripod.com/pssm/conference/day316.doc
Author 1	K. Thiruchelvam
Author 2	Kamarul Zaman Ahmad
Author 3	Koh, Aik Khoon
Publication/Conference	4th International Malaysian Studies Conference; 3-5 August 2004, Universiti Kebangsaan Malaysia, Bangi
Edition	NA
Document Type	Article
CPI Primary Subject	Economics
CPI Secondary Subject	Human Resource; ;
Geographic Terms	Malaysia;
Abstract	This paper describes the initiatives adopted by Malaysia to attract skilled personnel to serve the country. These measures, however, have not met with much success. An account of the findings of a recent study to review these initiatives is also given. It is suggested that adoption of future initiatives accord more emphasis to developing partnerships between local scientists and their counterparts abroad.

Centre for Policy Initiatives (CPI)

Pusat Iniatif Polisi

政策倡议中心

<http://www.cpiasia.org>

**THE 4TH INTERNATIONAL MALAYSIAN STUDIES
CONFERENCE (MSC4)**

UKM, BANGI

August 3-5, 2004

**ATTRACTING SCIENTIFIC AND
TECHNICAL TALENT
FROM ABROAD: LESSONS FOR MALAYSIA**

by

**K. Thiruchelvam, *University of Malaya*
Kamarul Zaman Ahmad, *University of Malaya*
Koh Aik Khoo, *National University of Malaysia***

ATTRACTING SCIENTIFIC AND TECHNICAL TALENT FROM ABROAD: LESSONS FOR MALAYSIA

K. Thiruchelvam, Kamarul Zaman Ahmad and Koh Aik Khoon

Abstract

Attracting skilled people in science, technology and engineering (S&T) has assumed urgency in today's increasingly knowledge-intensive economy. Countries, both rich and poor, have adopted various strategies to entice top talents in S&T to their shores. This paper describes the initiatives adopted by Malaysia to attract skilled personnel to serve the country. These measures, however, have not met with much success. An account of the findings of a recent study to review these initiatives is also given. It is suggested that adoption of future initiatives accord more emphasis to developing partnerships between local scientists and their counterparts abroad.

Attracting skilled personnel in science and technology including engineering (S&T) from abroad – both citizens as well as foreign talent – has, in recent years, emerged as an issue of increased importance not only for the advanced countries but also for the developing world. Much has been written on recent trends in the international mobility of skilled people¹. The developing world finds it increasingly difficult to stem the flow of many of its best brains to the rich countries. A number of these countries have introduced initiatives aimed at attracting back their talented citizens who are residing overseas as well as efforts at improving domestic S&T infrastructure in order to retain talent².

This article reviews the efforts undertaken by a rapidly industrializing country such as Malaysia in attracting talent from abroad in order to develop and strengthen her scientific and technological capabilities. It is in four parts. The first part provides a brief introduction to the subject on brain drain and the efforts by countries to counteract this problem. The second part details the importance of talent to the economy and the programmes adopted by the Malaysian government to attract talent from abroad. The results of a review exercise to examine the effectiveness of the programmes launched by the government to attract talent are presented next while the concluding part explores some of the managerial and policy implications.

About Brain Drain and what Governments Can Do

The term brain drain for the purposes of this article refers to the migration of skilled people to other countries often in response to better wages and career as well as employment opportunities. A brain drain does not just refer to a loss of skilled people from developing countries to developed countries, but can also refer to a loss of talent between developing countries or between developed nations. Governments invest in human capital through training and education and expect a return on their investments when the individual becomes economically active. Within this perspective, migration of highly skilled people represents a loss to the sending country because they lose out on the returns on the capital they invested in the individual. In the light of this, countries have implemented various strategies to counteract the brain drain. These strategies can be divided into two approaches.³ The first approach sees the brain drain as a loss and these strategies are designed to counter this loss. They include adoption of restrictive policies, incentive policies and compensatory policies. However, such policies have not proven to be effective in stemming the flow of talented people.

The second approach involves two strategies, namely, the return option and the diaspora option. The return option involves attempts by countries to encourage their highly skilled expatriates to return home. The relative success of Taiwan, Korea and Ireland in fostering return migration has been attributed to opening of their economies as well as policies that foster domestic investments in innovation and R&D.⁴ For the return option to succeed, home countries have to be in a position to offer the expatriates they want to attract back, salaries and infrastructure comparable to that in the countries in which they work. Many developing countries are not in a position to offer such remuneration or comparable research infrastructure. To circumvent this deficiency, a new approach to the brain drain problem has emerged in recent years, namely, the diaspora option.

The diaspora option represents a different approach to the brain drain. It views the brain drain not as a loss, but a potential gain to the sending country.⁵ It recognises that many of the expatriates are not likely to return. However, these expatriates may still be very

concerned with the development of their country of origin because of cultural, family or other ties. The objective, then, is to create the links through which they could effectively and productively be connected to the development of their country of origin. Thailand's Reverse Brain Drain Project accords emphasis to enticing Thai professionals residing overseas to participate in mission-oriented projects and promote development of core teams led by the respective Thai professionals.⁶ In fact, a key goal of the programme is to make the immigrant nationals become part of the nation-building process without uprooting them from their bases elsewhere.

The foregoing discussion has revealed that traditional brain drain co-exists also with cycles of emigration and return of national talent. For developing countries the emigration of talent need not always be viewed as a loss. The initiatives of countries such as Thailand, Taiwan, India and Korea have shown that with purposive and imaginative programmes, developing countries can entice back their expatriates or harness their talents in specific national projects. The next section examines the talent recruitment initiatives adopted in Malaysia.

Attracting S&T Talent to Malaysia

Talent in science and technology including engineering (S&T) is crucial to Malaysia's future because it is the fundamental platform for creating wealth for the nation. Skilled workforce is vital in order to ensure that Malaysia graduates to a higher level of product development and manufacturing sophistication thereby warding off the threat of low-cost producers. It remains a paradox that the country's substantial high-tech exports are supported by a weak base of scientific personnel in the workforce. Indeed, the number of researchers per 10,000 labour force is less than a quarter of that found in most advanced countries.⁷ Given the declining trends in foreign direct investments in recent months, and the challenge from countries such as China and Vietnam, it becomes crucial that Malaysia enhances her S&T capabilities to sustain and expand her exports. Availability of skilled manpower is vital if the nation hopes to succeed in an economy that is becoming increasingly knowledge-intensive.

The market for talent is globalising rapidly, flowing to where it finds most challenge and reward. A fairly substantial number of highly skilled Malaysians – broadly estimated at 250,000 - are working abroad especially in the developed economies.⁸ In the context of internationalisation of R&D and the increasing mobility of highly skilled people, attracting and retaining talent has emerged as a major policy issue not only in the industrialised countries but also for the developing world.

The Government recognizes that it needs to adopt more aggressive measures if it hopes to attract talented Malaysians and foreigners to the country. Towards this end, two programmes were introduced, namely, the Returning Scientists programme and the Returning Malaysian Experts programme. These programmes are briefly described in turn.

Scheme to Attract Back Malaysian Scientists Residing Overseas and Foreign Scientists

The Government approved the scheme to attract back Malaysian scientists residing abroad and also foreign scientists to work in Malaysia on August 24, 1994. The Public Services Department issued a service circular (No. 3 of 1995) setting out the guidelines to entice Malaysian scientists residing abroad and also foreign scientists to work in Malaysia.⁹ The key objective of the scheme was to attract human talent that are not available locally as well as to attract expertise to undertake research and development activities in areas that have been identified as priority under the Intensification of Research in Priority Areas Programme (or IRPA).

In 1998, this scheme was suspended following the economic downturn arising from the Asian financial crisis. At the time of suspension, some 93 scientists were hired under this scheme. Of this number, 23 were Malaysians and 70 were foreign scientists.¹⁰ On November 15, 2000, the Government decided to reactivate this scheme. Despite this reactivation, the scheme continued to be bogged down with implementation problems.

The Ministry of Science, Technology and the Environment (MOSTE) was directed by the Chief Secretary to the Government to address these implementation bottlenecks.

Key Elements and Deficiencies of the Circular on Guidelines to Recruit Malaysian Scientists Residing Overseas and Foreign Scientists

The mechanism to implement the Government's policy decision to attract Malaysian scientists abroad as well as foreign scientists is through the circular on Guidelines to Recruit Back Malaysian Scientists Residing Overseas and Foreign Scientists. The circular details the objectives of the recruitment programme, general guidelines, procedures for recruitment, contract conditions, work permit procedures, financial allocations and feedback to relevant authorities. Despite its avowed objective of facilitating in this recruitment programme, this circular has a number of deficiencies as described below:¹¹

lack of focus - present programme focused on securing experts that meet institutional needs rather than technologies the country hope to excel in the near future. Additionally, focus of programme should be on developing connections with talented scientists (regardless whether they are Malaysians or foreigners) with the ultimate objective of harnessing talent for wealth creation;

restrictions in the recruitment of scientists - scientists should be selected based on expertise regardless of their nationality. The circular has indicated that priority should be accorded to scientists from China, India, Pakistan, Russia and countries of the then Commonwealth of Independent States (CIS);

lengthy administrative processes in securing the services of these scientists – long delays in obtaining the necessary approvals have led to several scientists reversing their earlier decisions to serve in Malaysia;

poor remuneration package especially when recruiting top talent from the more advanced countries. Also, employment of spouse not provided.

In addition to the above deficiencies, the scheme was poorly received at the institutional level as it was perceived to create administrative tensions between staff and returning scientists especially when the latter are being paid almost 30 % more for almost the same job. Additionally, public research organizations and universities were reluctant to enforce the circular since it would involve additional costs. Most of these organizations have instead opted to employ foreigners on existing contract mechanisms which are sufficiently adequate to attract personnel from countries such as Myanmar, the South Asian and Middle-Eastern countries.

Given the above limitations, it is not surprising that response to this programme has been dismal. Indeed, presently only one organization from the list of IRPA recipient organizations have engaged scientists under this programme. The Government acknowledges some of the deficiencies as described above and is currently reviewing the Returning Scientists Programme so that Malaysia would be able to compete effectively in harnessing talent from abroad to achieve our scientific and technological goals.

Programme to Encourage Malaysian Citizens with Expertise residing Overseas to return to Malaysia

In the 2001 Budget, the Minister of Finance announced various measures designed to enable the creation of a Malaysian world class workforce. One of the measures proposed was to encourage Malaysian citizens with expertise in selected fields important to the nation, who are residing overseas, to return and work in Malaysia. The following incentives are offered under this programme:¹²

- Income remitted within two years from the date of arrival will be exempted from income tax;
- All personal effects brought into Malaysia will be exempted from tax, including two motorcars registered in the country of residence of the applicant for at least six

months in the name of the husband/wife/child will be exempted from import duty and sales tax; and

- Spouse and children of the applicant who are not themselves Malaysian Citizens will be given permanent resident status within six months from the date of their arrival in Malaysia.

Since the launch of this programme in January 2001, 179 applications have been approved from a total of 494 that were received by the Ministry of Human Resources (MOHR).¹³ Of this total, 106 Malaysians have returned. Although no detailed evaluation on this programme has been undertaken, official sources attribute the poor response to this scheme to the weak job market. This programme, however, does not guarantee employment for the returning Malaysians.

Overview of MOSTE's and MOHR's Programmes

The overarching objectives of both MOSTE's and MOHR's programmes are to attract as many talented Malaysians and foreigners to this country in order to overcome the shortage of skilled personnel in various categories of expertise. Although the scheme under MOSTE is aimed at scientists and researchers, the programme administered by MOHR embraces experts from a range of fields. **Table 1** provides a summary on the key differences between the programmes administered by MOSTE and MOHR.

Table 1: Differences between schemes operated by Ministry of Science, Technology and the Environment (MOSTE) and Ministry of Human Resources (MOHR)

Aspect	Scheme under MOSTE	Scheme under MOHR
Target group	Skilled Malaysians residing abroad and foreign scientists	Skilled Malaysians residing abroad
Fields of expertise	Selected R&D fields	Wider range of fields of expertise including science and technology
Incentives given	Attractive remuneration package including education for children;	Income repatriated within two years is exempted from income tax; All personal belongings, including two cars are given import duty exemption; and Spouse of Malaysians and children who are not Malaysians will be given Permanent Resident Status within six months
Employment	Employment for those identified by receiving organisation	Government not responsible for finding employment for applicants under this scheme

Despite the attractive incentives offered, the performance to-date of these two schemes has not been that encouraging. A brief summary of the reasons for this dismal situation is given as follows:

- Poor compensation policy to attract talent;
- Weak job market;
- No dedicated organisational unit to spearhead the search for talent on a proactive basis;
- Weak infrastructure to absorb returning scientists;

Salaries offered to returning scientists are based on civil service salary structure which are poor when compared to what these scientists are accustomed to in their current

overseas jobs. Additionally, the present weak job market does not augur well for the nation in attracting experts from abroad. The lack of a dedicated organization charged with proactively spearheading the agenda for seeking talent from abroad as well as developing linkages with overseas Malaysians also contributes to this dismal situation.

The Government acknowledges some of the deficiencies as described above and is currently reviewing the Returning Scientists Programme so as to make it more attractive in order to entice the best brains from abroad to serve in Malaysia. A review of this scheme was recently undertaken and its key findings are described next.

Key Findings of Review Study

MOSTE engaged a local consulting group to undertake a brief study to review the Returning Scientists Programme and to submit recommendations to enhance its implementation.¹⁴ The key managerial and policy issues raised in this review study can be summarised as follows:

Recruitment of top talent in S&T: Policy and Implementation Issues

The present policy to attract talent from abroad to enhance the S&T capabilities of the country is well founded since Malaysia is lacking in expertise in a number of areas and institutional efforts at capability building will take some time to bear fruits. However, the effectiveness of the implementation mechanism, namely, the Returning Malaysian Scientists and Foreign Scientists Programme, to achieve the policy goals of attracting talent to the country is being questioned. The review study is of the view that despite refinements, the Returning Scientists programme may still suffer from being acceptable at the institutional level due to concerns over possible tensions among staff arising from disparities in salary levels for similar job functions.

Given the similarities of this programme with that administered by MOHR and the need to avoid duplications, the review study proposed that the Returning Scientists programme

be discontinued. Instead, a new programme that would enable Malaysia to compete effectively in the search for talent is being recommended. This new programme, to be based on an existing programme administered by MOSTE, would focus on developing and intensifying connections and partnerships through projects with top talents in identified technologies so that Malaysia remains at the forefront in the new and emerging technologies. This expanded programme will enable MOSTE to attract established and renowned scientists to lead research groups in identified research projects. Industry will be actively involved in this new programme through funding of Visiting Chairs in Public Higher Education Institutions and Public Research Institutions as well as through participation in joint research projects. Crucially, the review study emphasised that MOSTE must be endowed with the necessary resources to ensure the effective implementation of this new programme.

In short, the proposed new programme aims to address the deficiencies of the Returning Malaysian Scientists programme by being:

- **focussed** in terms of promoting the development of S&T capabilities in selected niche areas that Malaysia aspires to excel;
- **flexible** in operations in terms of fostering partnerships and provision of personalized incentives with the ultimate objective of harnessing talent for wealth creation;
- **fast** in terms of administrative procedures to enter the country and other services;
- **free** from administrative tensions that plagued the poor implementation of the Returning Scientists programme as appointments of experts will come under the purview of this new programme and not made at the institutional level.

Attracting talent through focused development of S&T capabilities

The review study emphasised the need for Malaysia to be selective in its support for R&D given the nation's limited resource endowments – both financial and manpower. A more strategic approach needs to be adopted in order to identify niche areas within the identified strategic technologies that would deliver the most promising results for

Malaysia. A number of countries notably Japan and several European countries have formalized this process through Delphi techniques or what is commonly referred to in the literature as Technology Foresight exercises. Malaysia is about to launch its own Technology Foresight exercise. Before waiting for the results of such a formal exercise, the inputs from the research community and industry will need to be actively sought in order to ensure that the proposed new programme is underpinned both by a demand perspective as well as attention to strengthening the basic sciences.

Development of world-class capabilities in these identified niche areas through focused efforts will strengthen the nation's S&T system as a whole and its centres of excellence in particular. Acquisition of such capabilities will not only help to retain our best research talents but attract new talents both locally as well as from abroad. Additionally, such international reputation would help promote Malaysia as a preferred location for regional R&D activities for the burgeoning Asia-Pacific market.

Towards a Supportive and Disciplined Research Environment

The review study has stressed the importance of adopting sound research management practices to ensure, among others, that Malaysia's investments in research are properly utilised and maintained. Adoption of such practices, including ensuring well maintained research infrastructure, would help to contribute towards fostering the right research climate thereby attracting and retaining talent. Besides research management courses for middle and senior researchers, a research management benchmarking exercise can be instituted to foster the adoption of sound research management practices among the PHEIs and PRIs.

Success in R&D, more than in any other aspect of industrial management, is largely dependent on people. Thus, it is vital that appropriate incentives be instituted to attract and retain the best 'brains' for the research effort. A dual ladder career structure has been adopted by many foreign organisations in order to ensure that researchers do not lose out

to their peers in administration while at the same time retaining their talents for scientific and technical activities.¹⁵

Reorientation of Immigration Policies and Procedures

Several developed countries have in recent years liberalised their immigration policies to attract highly skilled people from around the globe. Such measures have contributed immensely to the growth of the domestic economies of the receiving countries. Forward-looking immigration policies and procedures are crucial in order to support Malaysia's efforts in enticing talent from abroad as well as to capitalise on foreign talent that are within the country. Procedures that are slow and cumbersome would make a researcher decide on other options. Accordingly, a review of immigration policies and procedures is necessary to facilitate the flow of talented people from abroad as well as the utilisation of potential sources of human talent available in the country.

Forging Linkages with Overseas Malaysians

Although there is presently no national database on Malaysians residing abroad, it is acknowledged that there is a large community of highly skilled Malaysians abroad. The review study argued that the Government needs to actively engage the hearts and minds of Malaysians abroad so that they feel closely connected with Malaysia and are encouraged to contribute to the country in a variety of ways including exchanging ideas as well as investing in Malaysia. The study proposed the development of a national website that encourages overseas Malaysians to maintain contact with one another as well as provision of relevant information about opportunities of work and investments in Malaysia.

In summary, Malaysia's current Returning Scientists programme, as it is presently structured, is inadequate to attract talent in the development of competencies in the strategic technologies. Besides its limitation in offering attractive remuneration to the highly skilled, this programme is not structured to promote research partnerships between researchers in this country and those from abroad. The review study has also emphasized

on the need to ensure a hospitable research environment including availability of adequate research infrastructure as well as attractive career prospects. A constant theme that emerged from the study is the need for a more dynamic and liberal immigration policy that, not only, facilitates the flow of talent but also to harness whatever talent that is available in the country. The findings of this study have recently been submitted to MOSTE for consideration. We are encouraged from recent pronouncements that the Government is seriously reviewing this programme with the objective of enticing our talent from abroad to return home.¹⁶

Conclusion

Efforts at enticing talent from abroad are not the panacea for all of Malaysia's S&T manpower inadequacies. Instead, such initiatives must be seen as integral to the overall efforts at nurturing and developing talent. New approaches, as argued in this article, are necessary in order to forge more productive linkages between foreign and local talent. However, adoption of such approaches is not without problems. Indeed, the literature on public administration is replete with case studies on organizations defending their *modus operandi* despite changed circumstances. If Malaysia is to benefit from harnessing scientific and technical talent – both foreigners and Malaysians abroad – then it must be prepared to forego existing policies, programmes and practices that inhibit the adoption of more innovative approaches. Such departures will not be easy to implement without strong political commitment. The temptation for most organizations in this situation would be to adopt an approach of least administrative resistance. But, adoption of such an approach, although prudent from the standpoint of implementation, would severely compromise the effectiveness of the change programme. We hope that the recommendations from the review study would provide a useful framework for Malaysia to adopt in engaging talent to develop its scientific and technological proficiency. Given commitment and conviction, we are confident that this revised programme can succeed.

NOTES

- ¹ An excellent account is provided by Solimano, A (2002)
- ² The reader may wish to refer to Meyer and Brown (1999) for an account of initiatives adopted by several developing countries in forging collaborations with their scientists and technologists residing in developed countries.
- ³ For a detailed account of these approaches see Meyer et al (1997)
- ⁴ OECD Observer (2002)
- ⁵ A detailed description on diaspora is given by Meyer and Brown (1999)
- ⁶ See 'About Reverse Brain Drain' in http://rbd.nstda.or.th/html/body.about_rbd.html
- ⁷ According to the findings of the Ministry of Science, Technology and the Environment National Research and Development Survey Year 2000, there were about 15.6 researchers per 10,000 labour force. Most developed countries have more than 60 researchers
- ⁸ This figure is attributed to Hon. Dr Fong Chan On, Minister of Human Resources. See Straits Times, January 10, 2003 'Skilled Malaysians won't return home'
- ⁹ Public Services Department, Malaysia Service Circular No. 3 of 1995: 'Guidelines in the Recruitment of Malaysian scientists residing overseas and Foreign scientists'
- ¹⁰ These statistics are based on internal Ministry of Science, Technology and the Environment documents.
- ¹¹ Feedback on the deficiencies of this programme was obtained from interviews with personnel from selected public service research organizations and universities.
- ¹² Further details on this programme can be obtained from the website of the Ministry of Human Resources, Malaysia at: <http://www.mohr.gov.my/mygoveg/bi/gpexpert.htm>
- ¹³ Personal communication with official from Ministry of Human Resources
- ¹⁴ The study was undertaken by the three authors of this article on behalf of the University of Malaya Consulting Unit. The final report of this study entitled 'A review of the scheme to attract back Malaysian scientists residing overseas and Foreign scientists: Building scientific and technological capabilities through harnessing talent' was submitted recently for the Government's consideration.
- ¹⁵ See Burns (1988) and Grady and Fincham (1991)
- 16 The Sunday Times, 'KL hones plan to bring scientists home' August 1, 2004

REFERENCES

- Burns, D.P. (1988) "Management Responsibilities of Directors of Government research Laboratories and Institutes" in Abdul Aziz, S.A.K. and Schweitzer, G.E (eds) **Research Management** Kuala Lumpur. Rubber Research Institute of Malaysia
- Grady, D and Fincham, T (1991), "Making R&D Pay" **Research-Technology Management** March – April pp. 22-29
- Meyer J-B, Bernal D, Charum J., Gaillard J., Granes J, Leon J, Montenegro A, Morales A, Murcia C, Narvaez Berthelemot N, Parrado L. S, Schlemmer B, (1997) "Turning Brain Drain into Brain Gain: the Colombian Experience of the Diaspora Option" **Science-Technology and Society**. Vol. 2 No. 2
- Meyer, J.B. and Brown M (1999), "Scientific Diasporas: A New Approach to the Brain Drain" MOST Discussion Paper No. 41. Paper prepared for World Conference on Science UNESCO-ICSU, Budapest
- Ministry of Science, Technology and the Environment, Malaysia (2002), **2000 National Science and Technology Databook**
- Public Services Department, Malaysia (1995) Service Circular No. 3 of 1995: 'Guidelines in the Recruitment of Malaysian scientists residing overseas and Foreign scientists' Government Printers

OECD Observer (2002) “The Brain Drain: Old Myths, New Realities” www.oecdobserver.org

Solimano, A (2002), “Globalizing Talent and Human Capital: Implications for Developing Countries”. Paper prepared for the 4th Annual World Bank Conference on Development Economics for Europe, Oslo, June 24-26

Straits Times, January 10, 2003 ‘Skilled Malaysians won’t return home’

University of Malaya Consulting Unit Consultancy Report (2003) “A review of the scheme to attract back Malaysian scientists residing overseas and Foreign scientists: Building scientific and technological capabilities through harnessing talent” University of Malaya Press

About the Authors

K.Thiruchelvam is an Associate Professor at the Department of Science and Technology Studies, Faculty of Science, University of Malaya 50603 Kuala Lumpur MALAYSIA. Tel : 60379674441; E-mail: kthiru@um.edu.my

Kamarul Zaman Ahmad is a Lecturer at the Faculty of Business and Accounting, University of Malaya 50603 Kuala Lumpur MALAYSIA. Tel : 60379673837 E-mail: kzahmad@hotmail.com

Koh Aik Khoo is an Associate Professor at the Faculty of Science and Technology, National University of Malaysia, Bangi, 43600 Selangor MALAYSIA. Tel No: 6038921555 E-mail: hayati@pkrisc.cc.ukm.my