

*Special Article*

## **Thailand and brain drain**

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**Abstract:** Brain drain has been the subject of research since the 1960s. This research has been hampered by a lack of accurate data from both source and receiving countries on migration and on the losses and gains to developing economies of skilled migration. However, despite these handicaps, research has been able to clearly show that trends are changing and the effect this is having is usually quite different for individual source countries.

Thailand, as a developing economy, could be regarded as a source country. Fortunately, Thailand has never ranked highly in terms of brain drain when compared to other states in Asia and while it may not be a significant problem it nonetheless needs to be monitored. Thailand is also somewhat unique in that the migration that has occurred has been almost equally split between secondary and tertiary educated Thais. Thailand also ranks low in terms of tertiary educated population who have migrated when compared to other countries in the region.

Globalisation is having a profound effect on the migration of skilled workers. As trade becomes increasingly free, barriers to the movement of services or people are also freed. As the better educated are encouraged to think globally, so too will they be inclined to move globally into the world community.

This paper examines Thailand's position with respect to brain drain, some of the lessons we have learned and some of the steps that are being taken to minimise the impact of the loss of skilled workers, with a particular focus on science and technology. The conclusion is that brain drain should not be viewed as an entirely negative development and that the positive outcomes should be recognised, encouraged and incorporated into policy.

**Keywords:** brain drain, brain gain, migration, manpower planning, science policy

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## Background

Thailand is potentially vulnerable to the detrimental effects of brain drain as it cannot produce enough tertiary-educated researchers to fill the country's needs. Thailand fares poorly in this respect when compared to other economies in the region such as Korea, Taiwan and Singapore. Thailand has only 286 researchers engaged in research and development per million people (1990-2003), compared to 4,745 per million for Singapore and expenditure on R&D was only 0.2% of GDP in 2003 (compared to 2.2 for Singapore for the same year) [1]. In contrast to Taiwan and Korea [2,3], Thailand has invested considerable resources in tertiary education, thus making the 'cost' of brain drain proportionately higher.

However, balanced against this are other factors such as strong cultural and family roots, which tend to make migration a choice to be carefully considered. While there are often political and economic upheavals, few have been severe enough to warrant a mass outflow of skilled human capital.

Developed countries are often the providers of tertiary education, with developing countries making up one of their major markets. The recent trend has been for these developed countries to simplify, and in isolated cases encourage, migration from developing country students completing their education in the receiving country. Some 10% of America's S&T community is foreign [4]. In Australia it is as much as 25% [5]. In cases where education has been funded by the Thai government, a policy of bonding students has been in place since the 1950s. The standard is to require service amounting to twice the time spent overseas, or financial compensation amounting to two or three times the cost of the education. This is less unfair than it may at first appear when it is considered that recipients of government scholarships usually continue to receive their regular salaries whilst studying overseas. Unfortunately, there is no firm data to support the possibility that bonding restricts brain drain or the possibility that it could in fact have a negative effect, given the ever-changing scene with respect to worker mobility, both inside and outside of the country. Certainly it may be said that the bonding system causes some resentment amongst the bonded.

Many of the source countries where brain drain has been a major issue (e.g. Fiji, the Philippines, China, India and Korea) are often hardest hit in the health sector. This restricts their ability to provide basic services. Thailand is perhaps fortunate in this regard in that this sector has remained strong, from services to research. Health services are rapidly becoming a growth industry with the promotion of health tourism providing opportunities to help retain skilled resources in this area [6].

## Trends

Recent research has helped to better define the trends in migration of skilled workers and three major categories have emerged. These are the basic brain drain, where there is almost a one-way outflow; reverse brain drain, where there is a trend for migrants to return to the source country; and circulating, where skilled human resources flow readily between the source and receiving countries, spending periods of time and employment in both [4,7].

The latter two categories could both be considered gains for the source country. As globalisation increases, the trend is likely to favour the circulating worker.

Thailand also differs from other countries in the region in that the migration that has occurred has been almost equally split between secondary and tertiary educated Thais [8]. With a 2000 figure of 1.6% of the total population who migrated and had a tertiary education, Thailand ranks quite low when compared with, say, 29.4% for Malaysia [9].

Total migration from Thailand to the United States (as an example) has not increased over the last decade and, if anything, has decreased slightly. Nor was there any noticeable upsurge due to the financial crisis of 1997 [9]. While there is no disturbing trend in Thailand at the moment, this could change quite rapidly if the factors contributing to skilled migration are not recognised and monitored. For example, there has been a noted upsurge in skilled migration from Fiji on each occasion a coup occurs [10]. Another factor is the quality of tertiary education at home. Thailand has been fortunate in this regard and the situation continues to improve. However, in the Philippines, by way of example, the tertiary education sector has been largely privatised and prospective students are thus faced with a choice of pay at home or pay overseas, often choosing the latter. Having paid for their education in the receiving country and because of the special status afforded to Filipinos by countries like the US, they are disinclined to return. Both China and Vietnam were heavily affected in the past due to political upheaval and the effects of war. While no reliable figures are available for Burma, it can be assumed that brain drain is a major problem for the economy and future development of that country.

Does brain drain have a negative impact on the development of science and technology in the source country? The evidence suggests that the impact is different for each country. For countries such as Fiji, where 89% of migrants have been ethnic Indian and 15% of total migrants were skilled, this is equivalent to 4.7% of total government revenue – a result that is clearly negative [6]. Britain has more skilled professionals departing than any other country in the world. Yet Britain retains one of the most productive research sectors and is regarded as a leader in science [7]. This may be due to Britain producing a surplus, making competition for academic or research positions quite strong, thereby continually raising the quality standards.

Stark [4] argues that the potential for migration is in itself an incentive for workers to improve their skills and thus the marketability of their human capital. In effect, attaining a higher degree can open the door to joining the global community, should the domestic situation make this desirable.

Thailand also needs to be conscious of the fact that it is gradually becoming a receiving country and has the potential to enhance and take advantage of this. The Asian Institute of Technology is a good case in point. AIT has shown that it can attract skilled researchers from other countries, without necessarily using OECD-level salaries to achieve this. As opportunities for tertiary education in many neighbouring countries remain limited, Thailand can expect a greater influx of students from Burma, Laos, Cambodia and, to a lesser extent, Vietnam. If attractive employment opportunities are available, a number of these students could be expected to stay, adding to the skills pool in Thailand.

## Reversing the Trend

The single most critical factor for minimising the potentially deleterious effects of brain drain is creating the right domestic environment in the source country. The right environment is made up of a number of factors, apart from political and economic stability.

By creating the right environment it becomes possible to reverse brain drain and increase the number of circulating skilled workers, thus turning brain drain into a positive for the source country. However, it should be stressed that the first priority in creating the right conditions should be the domestic skilled workforce and special facilities should not be targeted specifically at attracting the return of migrants.

Factors that might make up the right environment are mostly within the government's ability to influence. In China and India, for example, the creation of science parks has had a major influence in encouraging the return of skilled workers [6,11]. Improvement of the quality of academic and research institutes has also been shown to be a major factor. Quality of the working environment is equally, if not more, important than issues such as salary. Thailand is working to create the right environment, including the recently opened Thailand Science Park and a number of technology-related industrial parks. Greater autonomy is being given to universities and research institutes. Universities are working closer with industry and the number of international programs is increasing. NSTDA has an on-going Reverse Brain Drain project which can hopefully be successful in strengthening the important overseas networks.

Innovative schemes that remove restriction are an important factor. These might include providing sabbatical leave or post-doctoral attachment at institutes in developed countries. Where possible, linkages between institutes should be encouraged where this might involve a migrant researcher. Joint research provides an opportunity for the migrant researcher to feel like they are participating in and contributing to their home country. The increase in international programs offered by universities in Thailand and the trend towards removing some of the government restrictions on universities are two positive trends making these institutions more likely to be attractive to overseas skilled Thais. Such researchers, whether they return or circulate, bring new knowledge and skills, language and a more entrepreneurial attitude towards science and technology to the source country [10].

Environment may also include cultural factors in the workplace and efforts should continue to eliminate gender bias, along with promotion based on seniority rather than skills or expertise. Admittedly, this will take time.

Thailand also has the opportunity to learn from the policies of other countries in the region. Taiwan in particular is an interesting case as it used to have a major problem with brain drain and has successfully managed to reverse this through far-sighted and patient policies. Apart from creating the right environmental factors, Taiwan has deliberately targeted its overseas skilled human resources by forming strong linkages with the receiving country's institutes or companies and providing the resources necessary to build on these linkages. With access to many major markets, Taiwan has been able to encourage direct investment from overseas companies employing Taiwanese nationals. Close

collaboration between research institutes in Taiwan and the US, involving migrant researchers, has directly helped the advancement of science and technology in the source country [2,3].

Singapore is another interesting example in that it is primarily a receiving country and follows a policy of encouraging skilled migration from developed countries to complement her workforce. This is managed by targeting circulating foreigners, rather than permanent migration. Singapore has also had some success in attracting the return of top level Singaporeans, although this has been due to a combination of facilities and salary.

The lesson perhaps for Thailand here is that it is already regarded as an attractive destination for foreigners and this could be turned to advantage by making it conducive for skilled foreigners to seek employment and stay longer than normally they would. Thailand has also become a popular destination for retirees, many of whom are highly skilled and remain active. Some developing countries are even willing to provide salary top-up and other incentives for such overseas workers. To date, no concerted efforts have been made to identify these potential sources and tap their skills, and in fact harsher immigration rules and fees have become a major deterrent for this particular group. Thailand is also perhaps a special case in that an undocumented number of female researchers studying overseas tend to marry nationals of the receiving country. In the majority of cases, the husband would have at least equivalent skills. Greater effort could be made to turn such inevitable developments into a positive by creating the right environment for both husband and wife to return and work in Thailand.

One other aspect that is more difficult to quantify is the possibility that overseas Thais, because of the nature of their position or their work, may in fact be more useful in furthering Thailand's interests by remaining overseas. Trade access is probably the most obvious example. In the research area, there are likely to be cases where the Thai researcher has access to facilities for his/her research that could never be found in Thailand. This raises the question of what is the point in encouraging them to return if there are no facilities to pursue their interests? Would it not be better to wait until they are more senior, have greater experience and could adapt to a more broadly defined role in Thailand? Undoubtedly there are also cases where Thais are pursuing research overseas that is simply not a priority or for which there are limited employment opportunities in Thailand. Space research, nuclear physics and aircraft design are but some examples. This suggests that firstly, we should not be pursuing a policy of return at all costs and each case needs to be carefully assessed on its merits, and secondly, by directing effort into the networking approach the opportunity arises to make the most of advantages for Thailand of a returnee or an overseas Thai who remains in place. A long-term view is essential as circumstances for individuals change.

### **Countering Resentment**

China in particular, and Vietnam to a lesser extent, have encountered problems with resentment from their domestic workers towards returning workers [6]. Many of these problems stem from the creation of special conditions or advantages for returning skilled workers who, in China, are referred to as "sea turtles" by the domestic "land tortoises." One lesson from this is that careful

consideration needs to be given before creating any two-tiered system for domestic and returning workers. In Vietnam it is more likely due to the obvious affluence of many returning Vietnamese.

Thailand, however, is not immune to the problem of resentment. One factor is a real or imagined resentment of “superior” knowledge. Many researchers may have been involved in building their institutes from the ground up, having to struggle for every improvement and may feel resentful towards an outsider used to taking such improvements for granted. Such occurrences can be limited through skilful management. Some resentment can also be attributed to cultural factors. The returning worker, having been exposed for some time to a foreign culture and foreign working environment, may have trouble adjusting to the cultural norms. This is a major source of resentment. The domestic workforce wish to maintain the status quo at all costs. This constitutes their comfort zone where daily tasks are achieved by an unwritten set of rules. It can be difficult for a returning Thai, accustomed to the direct approach, to re-assimilate in such an environment. Faced with such difficulties, many returning Thais, and indeed foreign workers in Thailand, feel that their skills are under-utilised and under-appreciated. There have been some notable failures and the issue needs to be addressed. This is particularly important if the workplace culture in Thailand is to progress and develop more towards international standards.

Given the benefits that can accrue from the return of skilled Thais, prospective employers should carefully consider the possibility of resentment and attempt to minimise this.

## **Conclusions**

For Thailand at least, brain drain is firstly not yet an issue of major concern and secondly, it should not be viewed in a negative light. Measures that might restrict the mobility of highly skilled workers are more likely to have negative effects. Skilled migration is inevitable and cannot be prevented by government. Time would be better spent on examining how to turn skilled migration to advantage. Some argument can be made that there are clear economic gains to be made from an increasingly mobile skilled workforce. Closer examination of the bonding system could be performed in the light of more recent research that has come to hand.

Thailand has been taking some positive steps to improve the environment for the highly skilled. Some facilities for researchers are now world-class. The next step will be a similar improvement in the private sector environment. This will ultimately enhance the possibility of either temporary or permanent returnees (brain gain). To counterbalance any negative impact that might occur from brain drain, Thailand should make better use of its natural assets to attract skilled researchers from developed nations. The first step would be an inventory of existing skilled foreign workers residing in Thailand and devising means to make use of these resources, if this is not already being done.

Thailand also needs to take stock of its overseas resources. A database of skilled Thais working abroad needs to be established and maintained. This would firstly enable a more accurate picture of the size and nature of brain drain. While this would be difficult for the private sector, researchers could be traced through their published work. This should then be followed by the establishment of networks, along the lines of the Taiwanese model, coupled with a flexible and

innovative program to get this skilled resource involved in Thailand again. Such a move would also provide a baseline for Thailand to better monitor the effects of increasing globalisation and worker mobility.

Finally, managers in the public sector need to be conscious of the potential for resentment against returning skilled workers and serious efforts should be made to minimise this. The best way to achieve this would seem to be the reducing of any preferential treatment and attempting to not regard returnees as particularly special. However, simply casting returnees into a 'sink or swim' situation will not improve the chances of a longer stay and contribution. Each case requires sensitive handling and the key is creating a work situation that satisfies all parties. For Thailand, this is likely to be more successful than creating special environments just for returnees, as in the case of India.

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