Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

Engaging the Highly Skilled Diaspora in Home Country Development through Knowledge Exchange: Concept and Prospects
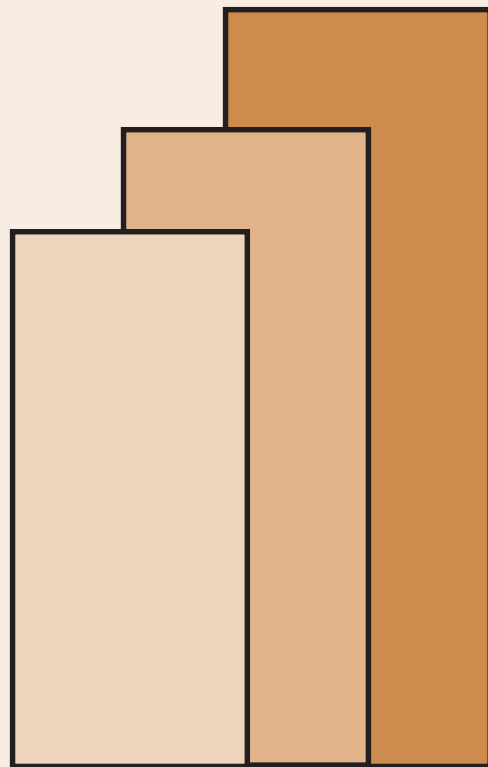
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DISCUSSION PAPER SERIES NO. 2013-18

February 2013

Engaging the Highly Skilled Diaspora in Home Country Development through Knowledge Exchange: Concept and Prospects[1]

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Abstract

Strong negative reactions have been raised against the continuing and steadily increasing migration of highly skilled people from developing countries. There is, however, growing evidence that this outflow of skills and knowledge may not necessarily mean a loss for sending countries based on the concept of knowledge exchange and circulation.
This concept argues that any apparent loss of skills and knowledge can be restored through the exchange or circulation of knowledge and skills between the highly skilled diaspora and their home country. Studies of transnationalism and diaspora have further emphasized the ways in which migrants can remain not only connected but also deeply committed to development processes in their home countries. Knowledge exchange poses a lot of potential for a number of reasons: the advances in communication and transportation technologies which reduce cross-border distance; the growing appreciation by governments of the network approach as a conceptual guide and strategy to thrive in a globalized world; and the increasing desire of migrants to connect with their home countries. The three cases (China, India, Philippines) presented in this paper show the wealth of knowledge assets that the highly skilled diaspora can contribute: as source of expertise in terms of skills, technologies and markets; as source of venture capital; and as intermediary or middle person in providing language skills, cultural know-how and contacts for building business relationships or collaborative projects. However, as these cases also show, the success of tapping the intellectual, economic and social capital of the diaspora depends on consistent, well-defined and well-supported policies and programs.

Keywords: knowledge exchange, knowledge circulation, diaspora model, transnationalism

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1. Introduction

Increasingly complex and steadily growing mobility of people is a key feature of globalization in the 21st century. Governments themselves are contributing to this mobility. They are loosening their foreign investment policies to attract businesses, which all the more spur the demand for human capital. Many developed countries have also made the entry of lower skilled and highly skilled[3] people much easier in order to alleviate their own labor scarcities as a result of the movement of their own people to other countries and their ageing populations. Traditional immigration countries such as the United States, Canada, Australia and New Zealand differ in the ways they attract permanent skilled migrants, but "it is one of the explicit objectives of their immigration policies" (Iredale 2000).

This apparently more liberal policy shift has generated strong negative reactions given that it contributes to the loss of highly skilled people particularly for developing economies, which are in great need of such skills. Estimating the migration flows of 24 labor-exporting countries to the OECD using 2000 data, Adams (2003) finds that tertiary educated migrants from Indonesia, Philippines, Egypt, India and Sri Lanka make up 70 percent of the total immigration in each country. In a related study, Docquier and Marfouk (2004) observe that among 30 most affected countries in 2000, the Philippines, India, China, Mexico and Vietnam as well as developed countries such as UK, Germany, Canada and Italy have the highest number of highly skilled people leaving and therefore the most affected in absolute terms (number of educated emigrants). In particular, the Philippines is second to the United Kingdom (1,260,879 versus 1,542,011 people), outranking India (1,021,613) and China (906,337). Alburo and Abella (2002) also confirm that between 1990 and1999, the number of professionals from the Philippines who went abroad exceeded the number of professionals added to the workforce.

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[3] By 'highly skilled', this paper refers to the three highest occupational major groups in the International Standard Classification of Occupations (ISCO) developed by the International Labour Organization, namely: (1) Legislators, Senior Officials and Managers, (2) Professionals, and (3) Technicians and Associate Professionals. The author's choice of ISCO in defining 'highly skilled' was motivated by its comprehensiveness and applicability for international comparison of occupations across national labour markets. Many OECD countries as well as non-OECD ones have developed or revised their national classifications using ISCO as their model (Hoffmann and Scott 1992). For example, in 2006, Australia and New Zealand released a unified system of standard classification of occupations which is compatible with ISCO-88 (Australian Bureau of Statistics 2009). Jointly developed by the Australian Bureau of Statistics, Statistics New Zealand and the Australian Government Department of Employment and Workplace Relations, the system is called the Australian and New Zealand Standard Classification of Occupations (ANZSCO).

There is growing evidence, however, that this outflow of skills and knowledge may not necessarily mean a loss for home countries (Meyer 2001; Meyer et al. 2001; Saxenian 2002b; Hunger 2004; Tung 2008). Meyer (2001) argues, in particular, that any apparent loss of skills can be restored through the exchange or circulation of knowledge between the migrants and their home country. One approach advances the idea that networks connect highly skilled migrants with one another and with their home country, and thus can promote the exchange of skills and knowledge (Ouaked 2002). These networks, according to Ouaked (2002, p. 156), are part of the "connectedness" that propel the diffusion of new technologies, management and trade.

'Connectedness' is also the central theme of the transnationalism concept, which was raised in the 1990s, concomitantly with the critiques on the traditional migration theories. First articulated by Glick Schiller and her colleagues, it posits the notion that contemporary immigrants are not uprooted or have not completely left their old country behind (Glick Schiller et al. 1995 as cited in Wong and Satzewich 2006). Apart from their host and home countries, they could maintain multiple linkages and interactions that span national borders (Wong and Satzewich 2006) or what some scholars have termed as "transnational social formations" (Vertovec 2009) and "transnational social spaces" (Faist 2000; Kivisto 2001; Pries 2001; Wayland 2006). Studies of diaspora (Sheffer 1986; Safran 1991; Braziel and Mannur 2003; Johnson and Sedaca 2004; Pandey et al. 2006; Cohen 2008; Dufoix 2008) have further emphasized ways in which migrants can remain not only connected but also deeply committed to their country of birth.

The next section further explains the concept of knowledge exchange and how it can potentially mitigate the negative impacts of skilled migration and harness its gains at the same time. The third section presents three country studies of knowledge exchange. The aim of this section is to identify useful lessons and insights on how to effectively engage the skilled diaspora in development processes in their home countries. The last section summarizes and provides conclusions.

2. The knowledge exchange argument

The concept of knowledge exchange and circulation has two models. The first model is the **return option** or the **repatriation** of highly skilled migrants to their home country. Singapore, Korea, India and China have successfully implemented the return option (Meyer

and Brown 1999; Hunger 2004; Saxenian 2004; Dawson 2008; Zweig et al. 2008). Meyer and Brown (1999) attribute the good result to these countries' structural and institutional readiness to absorb and utilize the skills of their returning expatriates through the research and technical-industrial networks that they have gradually built. Parthasarathi (2006:1) calls such readiness 'absorptive capacity' which he regards as a 'necessary condition for significant reverse migration'.

There are indications, however, that enticing highly skilled migrants to return may not be easy. Meyer et al. (2001) cite the nomadic character of scientists and engineers owing to the requirement of science itself for theories to be continually tested to gain universal acceptability. To gain a deeper understanding of the phenomenon under investigation, it is imperative for them to move to the place of study and stay for prolonged periods when necessary, and leave when their research is completed. Scientists also go where there is funding for their research.

Moreover, Faini (2007), discussing studies of Regan and Olsen (2002) and Knerr (1994), notes that educated migrants have a propensity for spending longer time abroad due to the better quality of life and better career opportunities there. As an example, a study by Pandey et al. (2006) describes the rising numbers of Indian scientists and engineers from 1990-93 (86 percent) to 1998-2001 (94 percent), as well as those who plan to remain in the US for postdoctoral research appointments or jobs with enterprises (from 63 percent in 1990-93 to 73 percent in 1998-2001).

Conditions in the home countries are also a critical factor. Lucas (2004) notes his apprehension on the feasibility of the return option for countries such as the Philippines, Vietnam and Albania due to their unattractive pay structures for local workers. Hunger (2004) argues that the Philippines and Mexico, both countries with high levels of outmigration, may have the potential to achieve brain gain but this prospect is constrained by their low levels of attractiveness to investments due to their volatile economic and political climate.

The second model of knowledge exchange is considered an alternative to repatriation. This is the **diaspora model** which does not entail physical return of the skilled diaspora. Instead, it promotes tapping the diaspora's embodied knowledge through social and professional

networks and linking the diaspora to the home country through these networks (Meyer and Brown 1999).

Ancien et al. (2009) define diaspora knowledge networks as "overseas networks that mobilise the skills, expertise, contacts, knowledge, business acumen, and financial and political resources of diasporeans as a collective resource to benefit the local and global diaspora as well as the homeland." There are four types of diaspora knowledge networks based on the typology developed by O`Neill (2009):

1. global knowledge networks - those that link global regions with the home country, including trade missions, business forums, mentoring and advice;
2. specialist knowledge networks - sector-specific networks such as those in ICT, law and biotechnology;
3. professional knowledge networks - networks of professional and highly skilled expatriates; and
4. transnational business networks - networks that aim to build economic ties between the diaspora's host country and their home country.

As an alternative to repatriation, the diaspora model or diaspora networks may be considered a viable strategy in engaging skilled migrants and expatriate professionals in the development of their home countries. First, the structural requisites to make these exchanges happen are present, and these are in fact the reason why transnational practices have reached a level of critical mass (Portes 2001). Cross-border distance—which in the past could impinge on the regularity and scope of exchanges—has been eased out by advances in communication and transportation technologies. Communication technologies have also become cheaper, making them more accessible even to the less affluent and allowing even those in far-off places in the world to accumulate and benefit from knowledge developed in another place.

Second, there is a growing appreciation for the network approach as a conceptual guide and a strategy. Governments are increasingly realizing the need to network and collaborate both with state and nonstate actors as a necessary tool to survive in a globalizing world. They have come to acknowledge the significance of maintaining ties with their diasporas for economic (investment), political (support of and loyalty to the state), demographic (reverse migration) or symbolic (national identity) reasons (Dufoix 2008). Primarily because of the significant amounts of remittances that are being poured by diaspora groups into their home countries, governments have realized that they are a substantial resource that should not be ignored.

Third, diaspora groups are exhibiting a growing desire to connect with their home countries and take an active part in development. Besides contributing at the personal level (individual remittances or investments), they are willing to help as a group by forming hometown associations or diaspora foundations to extend assistance to their home countries (de Ferranti and Ody 2007). The presence of 41 scientific diasporas in 1999 from the inventory of Meyer and Brown (1999) also shows the interest of highly skilled migrants to involve themselves in development activities in their home countries. In a follow-up study, Meyer and Wattiaux (2006) provide evidence of the growth of new scientific diasporas.

3. Cases of knowledge exchange

Three cases are presented in this section to discuss the viability of knowledge exchange as a strategy for engaging the highly skilled diaspora in home country development. Two of these are the more successful cases of China and India. The Philippine case is also discussed for comparison.

3.1. The Indian IT diaspora

Indians constitute one of the biggest diaspora in the world. Around 17 million people of Indian origin live in 134 countries as of 2001 (High Level Committee on Indian Diaspora 2001). One of the largest Indian diaspora can be found in the US (1.7 million as 2001) as a result of decades of continuous migration. In particular, large migration streams into the US occurred during the 1970s and 1980s as a result of the passage of the Immigration and Naturalization Act of 1965. Not only did this act abolish the quota system based on national origin, it also gave preference to persons with skills, abilities or training needed in the US (Historical Documents in United States History n.d.). Majority of the Indians living in the US belong to the educated and elite class and include information technology (IT) engineers, scientists, teachers, accountants, doctors, managers, hoteliers and business people (Pandey et al. 2006).

3.1.1. India's software industry and the Indian IT diaspora in the early years

The Indian diaspora in the US is particularly known for its significant contribution in shaping the home country's software industry. This industry is considered the backbone of India's IT sector, producing US$8.9 billion in total revenues in 2003-2004 (NASSCOM 2008). The advent of India's software industry occurred in the 1970s but software development during

this period was strongly hampered by high import duties on hardware needed for designing software systems (Pandey et al. 2006). Things improved gradually, however, in India beginning the 1980s. IBM left India making its software companies less reliant on mainframe computers. IBM's decision was prompted by a government law passed in the 1970s that mandated all multinationals to reduce their equity share in their Indian subsidiaries to less than 50 percent. Saxenian (2002a) notes that the departure of IBM was advantageous for India because it forced its software engineers to use imported models of a wider range from different manufacturers, making them knowledgeable with working on various platforms. Also, in the 1980s, the import costs of hardware decreased, thanks to the advent of personal computers. IT education also began to be offered in India by private providers initially through tutorials and training classes in IT.

Moreover, the government made two important policy pronouncements in the 1980s in support of the software industry (Saxenian 2002a). In 1984, the government of Rajiv Gandhi formally recognized software as an 'industry' and passed a policy whereby software manufacturers could import computers at a special low duty in exchange for software exports. The same policy also lowered duties on software and personal computers. Two years later, the Computer Software Exports, Development and Training Policy was passed. Towards facilitating increased software imports, this policy permitted the import of software tools in any form, promoted the entry of foreign direct investments, and committed to making venture capital available for new businesses.

Although these policies were helpful in removing significant barriers, they were not enough to propel industry growth during that period. The biggest hurdle was the lack of infrastructure software export. Complex, bureaucratic procedures that involved getting approval from multiple government departments were major disincentives for private providers to establish an earth station (Saxenian 2002a). By 1986, the first earth station was set up in Bangalore but this entailed the provider, Texas Instruments, "removing or breaking twenty-five different government rules" (Parthasarathy 2000 as cited in Saxenian 2002a, p. 173).

The involvement of the Indian IT diaspora in the home country was very minimal in the 1970s and 1980s. Majority of them had just arrived in the US, were still studying for their degrees or starting to build their careers. Not only were they preoccupied with adapting to their new country or gaining the needed qualifications; investing in the IT industry back home was also not regarded as lucrative by those who were capable enough. The lack of

substantial manpower with the needed IT competency and knowledge with US technology, coupled by bureaucratic obstacles, discouraged them to invest in India (Pandey et al. 2006).

Nevertheless, some Indians in the US who were already executives at that time acted as mentors for Indian programmers. They helped them gain training and employment in US companies by creating "programs within their companies in which Indian programmers could work in the United States with US technology (at Indian wages plus travel-related costs). They coached and guided the Indian companies in improving their quality and performance standards" (Pandey et al. 2006, p. 80).

3.1.2. The momentous era of Indian IT diaspora

It was not until the 1990s that the Indian IT diaspora began to emerge as a significant force in the growth of the Indian software industry. This could be attributed to the fact that the highly skilled migrants who migrated 10 or 20 years ago or even earlier had already established themselves by this time. As described by Pandey et al. (2006, p. 81), they "had become entrepreneurs, venture capitalists, or high-level executives in midsize and large companies." They already have the resources to invest and the networks to tap, thus the confidence to start their own companies. They were also already willing to collaborate with one another than in the early decades when there was hardly any attempt to do so. Two Indian associations—the Silicon Indian Professional Association (SIPA) and the Indus Entrepreneurs (TiE)—both formed in the 1990s helped institutionalize the Indian social networks in the US (Saxenian 2004).

In particular, the contribution of the Indian IT diaspora in terms of knowledge exchange came in a variety of ways—encompassing support to new business formation, mentoring, access to business contacts and new markets, and provision of employment, among others.

Some Indians formed their own companies either by re-migrating to India or by staying in the US and establishing branches of their US companies (Hunger 2004). NASSCOM figures cited by Hunger note that in 2000, 10 out of the 20 most successful software enterprises in India (which contribute more than 40% of the total revenues in the industry) were set up or managed by former Indian residents in the US. Five of the 20 companies were also joint ventures between Indian and foreign companies and the rest are Indian companies established in the past. Some of those who returned to India started their IT research and development laboratories, such as the IBM India Research Laboratory established in 1998, or worked for

US-owned IT companies with branches in India by supervising outsourcing contracts or by training Indian professionals on US standards (Pandey et al. 2006). On the whole, NASSCOM estimates around 30,000 expatriate professionals who returned to India and worked in the software industry (Engardio 2008).

Another role assumed by the Indian IT diaspora is by acting as 'middleman' linking US companies with software programming skills in India (Saxenian 2004). With some Indians occupying well-placed positions in big corporations such as IBM, General Electric and American Express, they had every opportunity to influence their companies' decision to outsource software work in India (Pandey et al. 2006). Many in the Indian IT diaspora working in US companies were also instrumental in convincing their own companies to hire Indian IT professionals. This, according to Pandey, had also been facilitated by the good reputation of Indian IT professionals in the US.

Professional organizations formed by the Indian IT diaspora in the US provided mentorship support to budding entrepreneurs in setting up new enterprises. TiE, which was formed in 1998 and now has more than 12,000 members across 11 countries, is committed to fostering "entrepreneurship globally through mentoring, networking and education" (The Indus Entrepreneurs (TiE) 2008). Mohan Trika, head of the Xerox spin-off inXight, related to AnnaLee Saxenian in an interview how organizations like the TiE created a feeling of self confidence in the community by acting as some sort of role model and confidence builder (Saxenian 2002b). In 1998, TiE also helped build IT training centers in India by providing financial support (Chakravartty 2001 as cited in Hunger 2004).

The high level of involvement of the Indian IT diaspora beginning in the 1990s coincided with the intensive phase of liberalization the government implemented during this period. These economic reforms served as significant 'pull' factors for the Indian IT diaspora. Liberalizing the economy opened up opportunities for them to take part in the economic processes in their home country. Assistance in the form of incentives and subsidies spurred interest to invest in India.

A major component of these reforms was the establishment of software technology parks (STPs). Similar to an export processing zone, firms in the STPs enjoy "tax exemptions for five years and guaranteed access to high-speed satellite links", are provided with basic infrastructure, including "core computer facilities, reliable power, ready-to-use office space,

and communication facilities including internet access, are allowed to import all equipment without duty or import licenses, and 100 percent foreign ownership is permitted in exchange for a sizable export obligation" (Saxenian 2002a, p. 173). The introduction of the STPs facilitated the growth of offshore outsourcing in India particularly in regions such as Bangalore and Hyderabad.

Back in the US, a critical change in the immigration policy in 1993 significantly affected the entry of Indian IT professionals. Nevertheless, it also led to beneficial results later on. That year, the US Immigration and Naturalization Service mandated US companies to submit a certification that their immigrant workers were receiving prevailing market wages (Pandey et al. 2006). The Immigration Act also mandated immigrant workers to pay Social Security and related taxes to the US government, placing an additional burden on them and their companies.

As hiring software engineers from India became both costly and cumbersome for both the workers and their employers, some companies gradually shifted to a new business model of having some of their software programmers work at their premises and the others continuing to work at their IT company's backoffice in India (Pandey et al. 2006). With the improving business climate in India, the generous incentives provided to willing investors, and its large pool of highly skilled, English-speaking IT professionals, foreign businesses started to look at India as an excellent location for offshore software production.

Another change in the immigration policy occurred, however, as a result of the Internet-telecom boom—the dot.com—and later on, the approach of the millennium (Y2K problem). In need of immigrant programmers to fill up internal labor shortages, the US increased its work visa quotas from 65,000 in 1998 to 130,000 in 1999 and to 195,000 soon after (Pandey et al. 2006). This resulted in increased numbers of IT professionals in the US.

Indeed, significant developments in India, the US and the rest of the world took place in the 1990s that paved the way for the emergence of an Indian IT diaspora. This diaspora evolved into an influential force that shaped India's software industry and that of the world.

3.2. The Chinese diaspora

China experienced large outflows of human talent but in contrast to the experience of most countries, the formation of its diaspora was shaped not by globalization processes but largely by state policies (Xiang 2005). Almost one million scholars went overseas between 1978 and 2006 (Zweig et al. 2008). National policies regarding emigration and return had been complex and inconsistent in the beginning due to opposing views within the ruling party.

For the most part of the Cultural Revolution, leaving China to study was not an option for students. Towards the end of the 1970s, then head of the central government, Deng Xiaoping, pushed the Ministry of Education to start sending selected researchers to the West to study and learn advanced technologies. The policy was promoted by forging educational exchange agreements with the United States (e.g., the Sino-America Understanding on Educational Exchanges in October 1978 and the Agreement on Cooperation in Science and Technology in January 1979) (Zweg and Chen 1995 as cited in Xiang 2005). In 1978 alone, more than 3,000 students were sent overseas.

The growth of the Chinese diaspora was also prompted by the passing of the Temporary Regulations on Self-financed Overseas Education in 1981, which recognized self-financed overseas study as a legitimate means of leaving China (Xiang 2005). Since the early 1980s, employers have also been able to send their staff overseas for academic exchanges or to study for a degree at company's expense.

During the 1980s, Deng, who was earlier vocal on his support for sending students overseas, started to criticize the growing numbers of scholars leaving China. Nevertheless, the State Science and Technology Commission continued to back up the policy in recognition of the perceived advantage the home country would gain out of these scholars' access to American technological skills (Zweig et al. 2008). Still there were steps implemented to regulate the outflow of students and sanctions were imposed against students who failed to return on time (Xiang 2005).

Following political upheavals in that decade, particularly the student demonstrations in 1986-1987 and the Tiananmen crackdown of June 1989, the central government became unified on its stance to restrict the flow of students going to the US. Those who were already overseas were also reluctant to return for fear of prosecution by the Community Party (Zweig 2006). The Tiananmen incident thus created an instant diaspora of highly skilled Chinese who did

not want to return to China. The US, as an act of defending democracy against Communist China and protecting the Chinese students in their soil, issued an executive order granting PRC students permanent residency in 1990, followed by the 1992 Chinese Students Protection Act (Xiang 2005). This resulted in a sizeable number of Chinese students and scholars acquiring permanent residency in the US (70,000 including 20,000 family members). Other developed countries also issued a similar order. In Canada, 10,000 Chinese students were granted permanent resident status while 28,500 students got the same privilege in Australia (Zweig and Chen 1995 and McNamara 1995, respectively, as cited in Xiang 2005).

3.2.1. Return as an initial strategy

Realizing the impending loss of skills looming in the horizon as many overseas scholars were more inclined to stay abroad and already possess the status to do so, Deng saw the urgency for repatriation of the diaspora. The series of economic reforms that China had undergone beginning 1978 (towards its accession to the World Trade Organisation in 2001) meant that more than ever, China needs highly skilled talents. With the knowledge and training they acquired overseas, which are the very qualities the country needs, the government saw Chinese expatriates as valuable partners for China to compete in the global economy (Zweig 2006). Thus, the government started calling on overseas students to return, "promising them that all would be forgotten if they avoided future anti-government activity" (Jiao 1999:72-74 as cited in Zweig et al. 2008), a statement which was clearly directed to students who had left China in the wake of the 1989 Tiananmen incident. In 1993, the government also issued a 12-point slogan on returnee policy with a catch that all returnees are "free to come and go" after they had returned (Zweig et al. 2008).

Between 1992 and 2002, a number of programs were implemented by various government agencies to entice diaspora members to return. Some of these are the following (Zweig 2006):

- The "Hundred Talents Programme" of the Chinese Academy of Sciences. This program provided fellowships to institutes in the form of grant to start a laboratory for their proposed research, including financial support for buying of equipment and hiring of technical personnel.

- Establishment of Overseas Study Service Centres to help returnees find jobs. As of 1989, 33 of these have been formed. Schools for the children of returnees have also been created to cater to the needs of these children.

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- Setting up of 'postdoctoral stations' by the Ministry of Employment and the Ministry of Personnel to serve as holding stations for overseas PhD who could not find jobs in China.

- Giving of preferential treatment to returnees, such as more living space and higher professional titles and permitting students who had signed two- or three-year contracts with their research centers to either remain or switch jobs once their agreements expired.

3.2.2. Implementing a more flexible and practical model

In 2001, a major policy was implemented that promoted knowledge exchange as an option for overseas scholars to serve their home country. It highlighted the shift to temporary return which was demonstrated in the slogan, *weiguo fuwu* (serve the motherland) in contrast to the earlier notion of *huiguo fuwu* (return and serve the motherland), emphasizing that 'physical return is no longer regarded as a determinant' (Wescott 2006, p. 8). With this new policy, the government started to advocate the 'double base model' or 'dumb-bell model' which means that Chinese expatriates can both be in two countries simultaneously such as by having professional or/and business affiliations in both China and overseas and moving back and forth regularly (Xiang 2003).

Under this policy, members of the diaspora may remain overseas and contribute to their home country through seven types of activities (Zweig et al. 2008): (1) utilizing the advantage of their professional bodies; (2) holding concurrent positions in China and overseas; (3) engaging in cooperative research in China and abroad; (4) returning to China to teach and conduct academic and technical exchanges; (5) setting up enterprise in China; (6) conducting inspections and consultation; and (7) engaging in intermediary services, such as running conference, importing technology or foreign funds, or helping Chinese firms find export markets.

The merit of the diaspora model for engaging the diaspora was recognized by the Community Party. The secretary of the party at Changshu Province acknowledged it to be a more practical approach compared to having their expatriates back in China. Repatriation entails huge investments because the government has to match the salaries and benefits they are earning abroad to entice them to stay. It also needs to provide the needed equipment and facilities which makes the process even more costly. "But if we let them stay overseas, and

invite them back to serve the country, we can use them. This is a terrific choice and model" (Chen et al. 2003, p. 75 as cited in Zweig et al. 2008, p. 18).

Even the overseas Chinese expressed their preference towards the diaspora model. Stan Rosen of Los Angeles, whom Zweig et al. (2008) interviewed in 2002, related that he is treated very well whenever he returns to China as a representative of the American business school where he is he affiliated. Keeping his excellent post in America is a better choice for Stan as he perceives that his status would be much lower if he were to return to China.

The "Spring Light Project" of the Ministry of Education's Foreign Affairs Bureau is one of activities used to promote knowledge exchange through the diaspora. This project arranges and funds short visits for lecturing or research collaboration in Chinese universities. About 600 scholars participated during its first year.

Some actual cases of knowledge exchange were discussed by Zweig et al. (2008). One example is that of a former Beijing University undergraduate who received his PhD in Canada. After setting up a laboratory for developing hearing aid implants at a major Canadian university, he established a second laboratory at a Beijing university and helps in developing collaborative projects between the two institutions. Another case cited by the authors from an account by Chen and Liu (2003) involves a geography professor at Berkeley who set up a joint research center at Nanjing University.

To ease the entry of Chinese expatriates back to China, the government simplified the residency requirements and entry visa for overseas scholars who wish to return or to come for short visits to engage in collaborative work. Longer term multiple-entry visas from three to five years were granted to overseas Chinese professionals (Xiang 2003).

Moreover, to facilitate the campaigns on returning and exchanging knowledge and to make information about positive developments in China easier to disseminate, the government organized diaspora members into professional associations. Officials in embassies and consulates led in this undertaking. More than 2,000 overseas student associations and 3,000 professional associations for overseas scholars were formed. The Education Commission also came up with the *Shenzhou xuerer* magazine and an electronic board to link overseas scholars and domestic organizations. A yearly Overseas Chinese Scholars meeting is also being held by Ministry of Education where overseas scientists present their project to domestic governments and companies.

The government also encouraged diaspora members to invest in China or to help find export markets for Chinese products. Zweig et al. (2008) gave some examples in their paper. Some Chinese expatriates based in Osaka set up three plants in Changshu City in Jiangshu Province between 1999 and 2002. These plants manufacture a material for upgrading the quality of air conditioners. Setting these plants up in China could save the latter RMB 150 million a year as the material it produces had previously been imported. One of the authors of the same paper also related the story of a Chinese businessman living in Tokyo who owns 14 factories in China which manufactures high-quality fertilizer for the Japanese market.

Despite the shift in strategy beginning in 2001, the government continued to attract members of the diaspora to repatriate to China. It implemented the diaspora model in tandem with the return option, which proved to be a smart move as there are expatriates who do not wish to return but are still interested to maintain ties with their home country and make a significant contribution. By presenting more than one option, the government makes connecting with the home country appealing for the diaspora as they could choose the option that suit their preference and need.

3.3. The Filipino diaspora

The Philippines is recognized in the world as one of the major sources of skilled and unskilled labor. As a country perennially beset with high poverty levels and high unemployment rates, labor migration is openly supported by the government as a measure to alleviate the country's socioeconomic problems. Over the years, the government has proactively deregularized labor policies to facilitate the movement of people overseas (Alcid 2003). It created the Philippine Overseas Employment Administration (POEA) in 1982 to streamline the bureaucratic process in the provision of contract labor to foreign employers, which in effect degularized the labor export industry. This, according to Alcid (2003, p. 111), is intended to make the Philippines, through the POEA, a better marketer, promoter and exporter of Filipino workers.

With much of the attention and policies focused on moving overseas, a 'culture of emigration' permeates in Philippine society (Asis 2006). Working and living in foreign soil has become a dream for most Filipinos despite the risks and uncertainties and the social costs it bears. Even the choice of degree to pursue is motivated by a desire for a better chance of migrating with ease. Thus, most young people—and with the influence of their parents—

would often choose courses of study that are in high demand abroad. In a nationwide survey of 1,200 adult respondents in 2002, one in five Filipinos was found to have a desire to migrate (Asis 2006).

Based on stock estimates from the Commission on Filipinos Overseas (CFO), there are approximately 10.5 million Filipinos in different parts of the world as of December 2011. Of this total, 96.5 percent are land-based. The majority of Filipino migrants (high-skilled and low-skilled combined) are located in the United States (32.8%). Other top destination countries are Saudi Arabia (14.8%), Canada (8.1%), United Arab Emirates (6.5%), Malaysia (5.4%); Australia (3.7%), Qatar (3.3%), Japan (2.1%),   United Kingdom (2.1%) and Kuwait (1.8%).

In terms of permanent migrants, the majority of them are residing in the United States, Canada and Australia. Since these countries give premium to level of education and skills and most of the Filipino emigrants to these countries are tertiary educated, they are clearly the foremost recipients of the knowledge and skills from the Philippines.

As early as 1975, the Philippine government has instituted several programs to tap the skills of its expatriate professionals and encourage them to participate in nation-building. These are the TOKTEN, *Balik* Scientist Program, and the Science and Technology Advisory Council (STAC). Its latest initiative is the Diasporas to Development (D2D) which was launched in 2010.

3.3.1. TOKTEN

The Transfer of Knowledge through Expatriate Professionals (TOKTEN) was a program initiated and funded by the United Nations Development Programme (UNDP). It is now managed by the United Nations Volunteers. First introduced in Turkey in 1977, this program allows expatriates to return home for a period of two weeks to three months to contribute their skills and services toward their home country's development (UN Volunteers 2006). In the Philippines, the program ran from 1988 to 1999 under the auspices of the UNDP and the Philippine Department of Foreign Affairs (DFA).

TOKTEN consultants can volunteer their expertise on a wide variety of technical fields such as agriculture, banking, business management, economics, environmental science, food industry, public health, medicine, urban studies, and water management, among others. As

they are volunteers, they forego their professional fees but they receive a daily allowance at United Nations rates and medical insurance while on mission (UN Volunteers-Ghana n.d.).

The TOKTEN program in the Philippine was cited by the TOKTEN administrator as one of the most successful in the world. Its success may be attributed to the fact that it has a staunch supporter within the foreign affair department in the person of Dr. Federico Macaranas, then undersecretary for international economic cooperation. Undersecretary Macaranas reportedly even went abroad to personally invite Filipino expatriates to participate in the TOKTEN (Opiniano and Castro 2006). (Unfortunately, data on the actual numbers of expatriate professionals deployed to the Philippines as well as the actual impact of the program were lacking). In 1998, the program was discontinued as soon as Undersecretary Macaranas left the DFA (Opiniano and Castro 2006).

3.3.2. *Balik* (Return) Scientist Program

This program, which was implemented even earlier than the TOKTEN, was an initiative of the Philippine government. It started in 1975 through Presidential Decree 819 for a period of five years, extended through a Letter of Instruction up to 1986, and revived and instituted under the Department of Science and Technology in 1993 through Executive Order 130.[4]

In 2007, in order to attract more scientists to come, the guidelines have been liberalized and made more flexible. Also, to ensure program sustainability particularly the allocation of manpower and sufficient funding, Senator Jinggoy Estrada submitted to the 14th Congress a bill providing for the establishment of the Balik Scientist Program (Estrada 2007).

Announcements calling on scientists and engineers to participate in the BSP are channelled to the Philippine embassies and consulates. Contracted scientists may opt for a short-term (at least one month) or a long-term (at least two years) engagement. As part of the incentives, they are given free round-trip economy air tickets and a grant for their research and development projects. Short-term consultants also receive a daily subsistence allowance. For long-term consultants, the air tickets of their spouses and at least two dependents are also shouldered by the program. Other incentives include a relocation allowance, duty- and tax-free importation of personal effects and professional instruments and implements,

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[4] Email of Assistant Secretary Ma. Lourdes P. Orijola, Department of Science and Technology, 14 October 2008.

reimbursement of expenses for the shipment of their personal effects, and budget for setting up a laboratory to perform their work.

According to Asec Orijola who heads the BSP, there were a total of 320 scientists who came back, 195 who went back to their host countries after their stint, 114 are still in the Philippines, and 14 are already deceased.[5] However, she said that these figures are still below the desired target. Attracting expatriate scientists to go back to the Philippines and share their skills remains a big challenge. Tapping of the scientific diaspora, she said, is hampered by the limited support given to the BSP.

Asec Orijola expressed dismay over the low budget that is allocated to the BSP yearly and wished for more funding to provide better incentives to returning expatriates.

> "We pay for their airfare and give them some allowance, but these are little compared to what they are receiving (overseas) and if they leave their host countries, they would be giving up so much. One of our strengths is our human resources. We need our brilliant minds to come back and hone our local people. But we cannot simply tell them, "Come back". We have to encourage them. We have to address the environment, we have to have resources, because these guys are also human beings, they have needs, and have families to raise so they have to give up certain things, especially our young brilliant scientists, we have to encourage them to return in their peak years. Look at China, they are offering their expatriates millions. They're offering them free housing, they're offering them big grants, schools for their children. I hope we can provide those as well. I just hope that we can get more support for the Balik Scientist Program." [6]

Another constraint of the program, she said, is limited human resources. Although an important undertaking, she disclosed having only six personnel working with her, all of whom are contractual staff. Due to the nature of their employment, the continuity of the program is also compromised by occasional staff turnover.

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[5] Ibid.
[6] Face-to-face interview with Asec Orijola, 8 February 2010.

3.3.3. Science and Technology Advisory Council (STAC)

STAC began in 1987 as a project of the DFA to encourage overseas Filipino scientists to form their own associations and initiate knowledge transfer (Wescott 2006). Recalling his experiences as a foreign service officer directly assigned to manage the day-to-day operations of knowledge exchange programs coordinated by the foreign affairs department, Señeres (2008) writes that at one point, STAC had more than 40 chapters worldwide, composed of mostly Filipino scientists and engineers.

Among the STAC chapters that are still active today is STAC-Japan. Its current membership includes scientists, engineers and students staying or who have stayed in Japan and those who are willing to pursue its objective of promoting science and technology in the Philippines (STAC-Japan). The group awards undergraduate research grants to science majors in close cooperation with universities and science and technology organisations), and also provides skills training in computer literacy and entrepreneurship to fellow migrant workers in Japan, many of whom are working in the entertainment industry (Wescott 2006).

3.3.4. Diasporas to Development (D2D)

This program was launched in 2010 and is being implemented by the CFO. CFO is a government body established in 1980, whose primary concern is the well-being of Filipinos who are leaving or have left the country on immigrant visas. The D2D is basically an expansion of previous diaspora-focused programs implemented by the CFO, namely, the *Lingkod sa Kapwa Pilpino*, a diaspora philanthropy-type of program which facilitates donations in cash or in kind from overseas Filipinos; and the *Balik Turo* which encourages expatriate professionals and academic to return to the Philippines to teach and work in the academe.

A notable aspect of the D2D its comprehensive scope that aims to reach Filipino migrant professionals from different fields of expertise. This is very important in the Philippine context considering the diversity of occupations, and therefore the wide range of knowledge and skills that the skilled Filipino diaspora covers.

The comprehensiveness of D2D is evident in its 10 programs which are described in the CFO website[7] as follows:

(1) Business Advisory Circle, which assists overseas Filipino set up business partnerships in the country;

(2) *Alay Dunong* (Knowledge Offering) Programme, which promotes skills and technology exchange/transfer between overseas Filipinos and the home country, in fields such as science and technology, engineering, arts and culture, among others;

(3) *Lingkod sa Kapwa Pilipino* (Service for Fellow Filipinos), an existing CFO programme that facilitates donations in cash or in kind for development projects;

(4) Diaspora Investment, which will develop new financial instruments to facilitate and promote investments by overseas Filipinos;

(5) *Balik-Turo* (Return to Teach), another continuing programme of the CFO, which intends to entice academics and professionals to return to the Philippines and teach and work in the academe to help in strengthening and enhancing the academic programmes of partner schools;

(6) Tourism Initiatives, which encourage migrant investments in small tourism enterprises, like local bed-and-breakfasts, and other tourism-related services, such as health and wellness services, among others;

(7) Global Legal Assistance Programme, which mobilizes overseas and local Filipino lawyers and legal experts to provide legal assistance and advice to overseas Filipinos in distress;

(8) Medical Missions, which coordinates and facilitates the conduct of medical missions sponsored and organized by overseas Filipinos in areas requiring medical intervention;

(9) Arts and Culture Exchange, which promotes and facilitates the exchange of artistic and cultural workers between the Philippines and Filipino communities abroad; and

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[7] http://www.cfo.gov.ph/index.php?option=com_content&view=article&id=1359:diaspora-to-development&catid=144:socio-economic-development). Accessed on 4 October 2011.

(10) Return and Reintegration, which provides returning Filipinos and retirees information and facilitating services for successful reintegration into local life.

3.3.5. Other initiatives

Aside from government-led programs discussed above, there are also other initiatives promoting knowledge exchange but these are carried out by professional diaspora associations and concerned individuals. Examples of these diasporas and their activities as discussed by Opiniano and Castro (2006) in their paper include: the University of the Philippines Medical Alumni Society in America (UPMASA; medical mission for poor patients in the Philippines, lecturing at and consultancy services to the University of the Philippines' School of Medicine); Philippine Institute for Certified Public Accountants (PICPA; organizes continuing education seminars to members and global conferences) in the United States; Association of Filipino Teachers (AFTA; organized the "Return to Teach" Program in 1993 to train teachers in the Philippines; more than 4,000 teachers and professionals have benefited from the program); and the Brain Gain Network (http://www.bgn.org; a human resource database of scientists, engineers and IT professionals which encourages mentoring, business networking and joint collaboration).

4. Conclusion

High-skilled migration may not necessarily lead to loss of skills and knowledge for sending countries. It increases the intellectual, economic and social capital of migrants, which may benefit home countries through knowledge exchanges. By going abroad, migrants accumulate not only new skills but also build professional and social contacts. Hunger (2004) notes that the successful development of the Indian software industry may have been considerably supported by the existence of Indian IT entrepreneurs who migrated to the US. The challenge now for sending countries is how to mobilize their expatriate professionals and engage them in development processes at home.

The three cases exhibit the potential of knowledge exchanges through the diaspora as a practical and flexible method for restoring the knowledge and skills that are temporarily 'lost' when highly skilled people leave their home countries. The cases show the wealth of knowledge assets that they can contribute, namely: as source of expertise in terms of skills, technologies and markets; as source of venture capital; and as intermediary or middle person

in providing language skills, cultural know-how and contacts for building business relationships or collaborative projects.

They also demonstrate that the success of tapping the intellectual, economic and social capital of the diaspora depends on consistent, well-defined and well-supported policies and programs. In India, the liberalization of the economy and the offer of incentives to inventors have facilitated the economic participation of overseas IT intellectuals in the home country (Hunger 2004). These economic reforms served as significant 'pull' factors for the Indian IT diaspora. Liberalizing the economy opened up opportunities for them to take part in economic processes in India.

In China, although policies concerning the outflow of its highly skilled people have shifted over time, it finally gained its focus beginning in the 1990s through its comprehensive, well-defined and well-funded diaspora policy (Zweig 2006; Zweig et al. 2008). China also implemented the diaspora model in tandem with the return option which was a smart move as there are expatriates who do not wish to return yet are still interested to maintain ties with their home country and make a significant contribution.

The Philippines has also made strides in engaging its expatriate professionals but the contribution of the latter seems not as substantial as that of the skilled diaspora in China and India where they have been highly instrumental in the economic success of their home countries. This could be attributed to the strong bias in the Philippines towards labor migration (Alcid 2003; Asis 2006) and the little emphasis on involving the diaspora in the development processes in the home country beyond their role as source of economic remittances. Although there were some programs implemented to tap the skills of expatriate professionals, these have not been sustainable or have little success in attracting significant numbers to return, whether on long-term or short-term basis, due to the lack of adequate institutional support.

The Philippines also has no clear and stated policy for encouraging return or diaspora participation (Wescott 2006). As a result, the activities undertaken to engage the Filipino diaspora are not anchored on a policy agenda that ideally should have been present to serve as a unifying principle that will coordinate and consolidate all activities and ensure their sustainability. Hopefully, the D2D program would be able to strengthen and unify previous

and ongoing efforts to engage the Filipino diaspora (both the lower skilled and the highly

skilled) in home country development.

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