

Work Globally, Develop Locally: Diaspora Networks as Springboard of Knowledge-based Development

Paper prepared for the Second Globelics Conference:
Innovation Systems and Development: Emerging Opportunities and Challenges
Beijing, China, October 16-20

1. The Co-Evolution of Diasporas and Developing Economies

Actors in developing economies, as it is almost self evident, must have the capacity to acquire new knowledge—to learn new ways if they are to compete in the world economy. Learning in turn supposes, and contributes to, the ability to search out and recombine usefully scattered information about production methods, markets and resources. And because development depends on learning and learning on searching, development almost invariably depends on linking the domestic economy to the larger, foreign world—for even the strongest economies quickly rediscover (if they ever forget) that they cannot generate all world beating ideas in isolation. Historically contact with the outside world was often established through skilled immigrants and the ethnic communities they founded in the host country: think of the contribution of the Huguenots in France, the Jews in Monterrey, Mexico, the Chinese in the Philippines, Indonesia or Malaysia, or the Indians in East Africa, then Great Britain. During much of the 20th century multinational firms have facilitated knowledge transfers by establishing facilities—usually for the manufacture or assembly of mature products—in developing countries, often with the assistance of local elites. Viewed in this long, historical perspective, network Diasporas are but the latest bridge institutions connecting developing economy insiders, with their risk-mitigating knowledge and connections, to outsiders in command of technical know-how and investment capital.

At least for the developing economies, the apparent and attractive novelty of Diaspora networks, as compared to immigrant communities and multinational firms, is that Diaspora networks promise to de-politicize the relation between domestic and foreign actors from whom they learn, transforming a volatile, often irrational struggle for power into a mutually beneficial economic exchange. That learning is often connected to ugly frictions is common place. Economically powerful ethnic minorities are traditionally suspected of having greater loyalty to their own community than to the host country, and therefore are always tempted to

exploit the latter to the profit of the former. Powerfully autonomous and often footloose, multinational firms are easily seen as the agents, even the masters of economic imperialism more than partners in development.

The actors in Diaspora networks, in contrast, are native sons and daughters. Even if they are personally wealthy, or connected to wealthy families or important multinationals, they seldom command anything like the resources attributed to economically potent minorities (whose riches, though real enough, are often magnified by envy) or manifestly at the command of the world's largest companies. They are therefore, in prospect at least, a connection to the indispensable world of foreign knowledge, but a connection that can be domesticated, and then used to discipline the behavior of ethnic communities and multinationals. That the members of network Diasporas are likely to be suspected in their host countries of putting personal gain or ethnic ties above managerial professionalism makes them, from the point of view of the sending country, more pliant, and more willing to cooperate on a truly equal footing. That Diaspora networks seem to form spontaneously, as the result of both the shortcomings as well as the successes of the mesh of individual and national strategies for economic advancement only completes the picture of the new institution as the market/manna solution to a crucial problem of coordinated learning too long fraught with political passions.

As we will try to show next, the reality of network Diasporas is far more complex and unruly than this juxtaposition suggests. Whether Diasporas are seen as adjuncts rather than adversaries of domestic elites depends on the interaction of their respective historical developments. By the same token, whether, and in what way, Diasporas connect domestic and world economies depends on the interaction of changes in the global production or supply chain patterns, changes in domestic growth opportunities, and changes in the economic activities and strategies of the Diaspora members themselves. Diasporas are thus mirrors of national development, reflecting the migratory pushes of national crises and the pull of the global economy. Or, to emphasize the interaction between the national and the global, network Diasporas co-evolve with the political and economic contexts within which they operate; they are not a self-generating, context free solution to the perennial problem of learning from abroad without being victimized by the foreign master.

To illustrate this co-evolution of particular network Diasporas with their environments, but also to introduce certain potential obstacles to all that will be relevant to policy makers, we briefly sketch the recent development of the centuries old, and thus “mature” Diasporas of China, India and Armenia. All three are large and well organized. The first two are wildly successful. But they are tellingly different in that the success of the Chinese Diaspora grows out of—although it is no longer limited to—the traditional investment behavior of émigré families who made their fortune “overseas,” while the success of the Indian Diaspora is much more closely tied to recent changes in supply-chain organization and the pattern of linkage-, as opposed to investment-based investing these changes make possible. The Armenian Diaspora has failed to contribute considerably (at least relative to its potential) to domestic development—at least so far. But a decade ago its success seemed so nearly certain as to be virtually “automatic.” Understanding how political divisions between the Diaspora and the post-Soviet, transition political class in Armenia, and within the Diaspora itself, combined with the philanthropic generosity of the overseas Armenians to thwart development and buffer the actors from the costs of their conflicts will serve to remind us that the political context requires as much attention as the economic setting.

Finally we turn to the newer Diasporas in the making: emergent business Diasporas that come to light in the Ramón García story are the main focus of this paper. Examples include South Africa, Chile, Argentina, and Colombia. On the one hand these Diasporas are large and diverse enough to have professionals in positions of influence in multinational corporations, the venture capital industry, and technology intensive spin-offs and start-ups. Many of these successful professionals, moreover, would like to get involved in innovation-intensive business in their countries of origin; and there are organizations and programs that seek to use their expertise to bridge the domestic and world economies. But, on the other hand, these bridging organizations tend to be fragile: highly dependent on the (interplay) of key champions in the relevant government or para-governmental agencies, and the Diaspora. A look at the successes and failures of South Africa’s efforts to institutionalize relations with its Diaspora will suggest how policy makers can address the crucial problems of bootstrapping—by a series of incremental steps, each suggested by the lessons learned in the preceding ones—an emergent Diaspora into a mature institution of economic development.

2. Facilitating serendipity: institutionalization of nascent Diaspora networks

In 1997 Ramón L. García, a Chilean applied geneticist and biotechnology entrepreneur with a Ph.D. from Iowa State University, contacted Fundación Chile. The Fundación is a private-public innovation organization which, among other accomplishments, helps provide the technical infrastructure that allows Chilean agribusiness to develop domestically viable variants of crops typical of California's Central Valley. Ramón is the CEO of InterLink Biotechnologies, a Princeton, NJ, company he co-founded in 1991. Interlink had developed a discovery platform for identifying novel chemical entities derived from microorganisms for use in new pharmaceuticals and enzyme additives for human food, animal feed and bio-control agents. Interlink also marketed its technical expertise to other firms interested in transferring and licensing new biotechnologies.

After jointly reviewing their portfolios of initiatives, Fundación and Interlink founded a new, co-owned company to undertake long term R&D projects needed to transfer to Chile technologies key to the continuing competitiveness of its rapidly growing agribusiness sector. Without Ramón's combination of continuing, deep knowledge of Chile, advanced US education, exposure to US managerial practice and experience as an entrepreneur, the new company would have been inconceivable. The new company, named Biogenetic S.A., has successfully developed a technology platform focused on the application of modern biotechnology for the improvement of grapes and stone fruits. Two key export crops very important to the Chilean economy. The company has been able to genetically modify grapes to make them resistance to diseases and it continues to develop the technology to introduce important quality traits in stone fruits. In addition to that, the company was instrumental in developing a program for the development of pine trees resistant to an important insect pest.

That skilled expatriates can create enormous benefits for their countries of origin has come to sudden attention in recent years through the conspicuous contributions that the large, highly skilled, and manifestly prosperous and well organized Chinese and Indian Diasporas have made to their home countries. But Ramón's collaboration with Fundación Chile suggest that Diasporas do not need to be large and voluminous to produce an impact: 10 cases of ' Ramón García' could transform entire sectors of the economy in relatively small countries like Chile or Armenia. Moreover, Ramón's collaboration with Fundación Chile suggests that even the sparsely populated, informal Diasporas networks linking small home countries with their

talent abroad are not without some institutional resources, and may prove capable of developing more.

But this is as far as the anecdote takes us. Ramón's collaboration with Fundación Chile is serendipity: While the story tantalizes and inspires those who search for keys to economic development, it scarcely hints at how to proceed from the happy accidents of the Ramón Garcías in what we will call the emerging business Diasporas of Chile and other countries to the robust and systematic Diaspora involvement exemplified by China and India. Indeed, on closer inspection there seems to be a schism between demonstrated success of mature Diaspora networks in triggering knowledge-intensive activities in their home countries and disappointing results to promote to promote Diasporas' engagement in development of home countries. The objective of this paper is to bridge this divide by presenting a compact framework for understanding the large and related transformations in labor and product markets as well as in industrial organizations that are reflected in and furthered by the growing role of Diasporas—of both relatively low skilled workers as well as has highly educated professionals—in economic development; analyzing, with help of this framework what has worked, what has not, in the facilitation of Diaspora networks; and then extracting from this analytic review some tentative and preliminary policy recommendations addressed primarily to leaders of business communities and public organizations anxious to learn from and scale up the 'Ramón García' case.

3. Diaspora networks as search networks

Take first the changes in the global circulation of high skilled and low skilled labor from poor economies to rich ones and back that are opening previously unsuspected possibilities for economic development. The changes are most noticeable in the behavior of the highest skilled. The brain-drain pattern of migration that long drew the most promising students of poor countries to the more lucrative and challenging careers of the metropolises shows signs of turning into a back-and-forth movement or Diaspora network: Talented students still go abroad to continue their studies and work in the advanced economies. But then, as entrepreneurs or as managers of multinational firms, they use their own global networks, and especially those of their Diasporas, to help build new establishments in their home countries. There are also first signs that lower skilled emigrants, forced by naked poverty to go abroad but long confined to dead-end jobs in the “secondary” labor markets of the advanced economies, are likewise finding new career possibilities. Increasingly, the entry-level jobs

they take in factory production or the public health-care sector in host countries demand and teach problem-solving skills that blur the line between management and labor. Whether these new skills can be redeployed back home is an open question. But the changing nature of migrants' work suggests the possibility that these "birds of passage," traditionally in transit between a native land that cannot support them and a rich country that remains alien, may one day form distinctive, medium-skill Diaspora networks that complement the diasporas of high managers and entrepreneurs.

Behind these developments is the long term, accelerating decentralization of decision-making responsibility from end-producers in the public and private sectors to their suppliers, and decentralization within public and private establishments from high managers to front-line work teams. To take a frequently cited example: Automobile makers, realizing that they cannot possibly remain abreast of all the key technologies that make a car, have largely divested themselves of their component-producing capacity, and routinely co-design virtually every sub-assembly of the vehicle with independent suppliers. Facing analogous limits to their own managerial capacities, public administrations in advanced countries routinely outsource the provision of new services to, say, substance abusers or troubled families to not-for-profit organizations, and outsource certain routine functions, such as servicing complaints, to for-profit call centers. This decentralization of production often is often the occasion to relocate activity from advanced to developing countries. It thus creates many of the investment opportunities within reorganizing supply chains that members of the high-skill Diaspora networks seize.

The managerial limits that propel decentralization of production to suppliers also compel a shift from hierarchy to teamwork in end producers and suppliers alike. As product life-cycles shorten from years to months (in consumer electronics, cell phones and computers, for instance) and quality expectations rise, it is simply impossible to shift from one production set-up to another, and solve the inevitable start-up problems that each change-over brings, without the active cooperation of the workers who will actually be doing the assembly. Organized as production and problem-solving teams, these front-line workers are today routinely asked to criticize, and suggest improvements in, the set-up of their workplaces, the flow the production, and the provision of support services. In short, they are asked to share in the quintessentially managerial task of co-designing the organization within which they are working. New programs in problem solving and teamwork help equip them for this task. It

is this entry-level exposure to problem solving, and the new forms of training with which it is associated, that may, in creating a bridge between the traditional world of the immigrant worker and the knowledge economy, open the way to the formation of a medium-skill Diaspora.

More generally we can see the decentralization of production to suppliers as well as the shift from hierarchy to teamwork in end producers and suppliers alike as part of profound change in the deep principles of organizational design. In traditional organizations—the kind familiar from mass-production factories and large public bureaucracies—superhumanly complex operations are accomplished by decomposing them into tasks sufficiently limited to be manageable by actors with “bounded rationality.” Hierarchy is the result. But as a rapidly changing world has made decomposition of tasks too time consuming and costly to be practicable, organizations have stumbled on an alternative solution: Instead of responding to bounded rationality by simplifying the problems actors face, organizations create the infrastructure that allows actors charged with a task to find others—outside the organization as well as within—who are *already* solving (part of) the problem that needs to be solved. Put another way, organizations shift from hierarchies in which subordinates execute their superiors’ plans to search networks in which collaborators, through the very process of identifying one another, come to define the tasks they will jointly accomplish. In a world of search networks changes in labor markets—who works with whom—can easily lead to changes in product markets—what businesses make—and even industrial organization—how firms are structured internally, and connected to each other. From this point of view modern Diasporas networks, as the García-Fundación Chile anecdote suggests, are just an especially conspicuous (because publicly visible) variant of the search networks under rapid construction in firms worldwide. And the shift from brain drain to brain circulation marks the shift from a world where the function of (long-range) labor markets was to fill jobs with relatively fixed requirements to a world in which filling a job not only changes the definition of what needs to be done, but also the setting in which future needs are defined.

The emergence of Diasporas as a type of search network poses new challenges for the articulation of coordinated training and economic development strategies within individual sending and receiving countries, and for increased concertation between senders and receivers as distinct, but more and more intricately connected groups. Thus individual sending countries will presumably want to encourage the formation of Diaspora networks by

helping high-skill emigrants stay in touch with each other and the home country, and creating incentives, both individual and corporate, for their re-engagement with the domestic economy. A key aspect of heightening the attractiveness of the domestic economy to potential investors will be introduction of the new problem-solving skills in the mandatory public school curriculum, or in continuing education programs. This will ensure that the domestic workforce has the skills required by the new wave of decentralizing firms. At the same time, broad provision of these skills will increase the chances that those young job seekers who do not find work at home can still take some advantage of new career possibilities afforded by entry-level jobs abroad.

Receiving countries, meanwhile, have reasons of their own to encourage Diaspora networks. Obstructing mobility in an epoch of decentralization, imposes stay-or-go choices on an energetic, ambitious immigrant elite. This in turn raises the risk of a reverse brain drain—the return *en masse* of high-skill expatriates whose countries of origin may seem, at one time or other, to have brighter futures than even the richest of today’s economies. In contrast, promoting the circulation of high-skill labor from home country to adopted home and back reduces this risk, and thus is almost surely more in the long-term economic interest of the receiving countries than any obstructive policy. Similarly, with their aging populations and low birth rates, traditional receiving countries will likely find it useful, as in the past, to recruit immigrants for low-level jobs in the (public) service sector and manufacturing. But the blurring of managerial and executory tasks means that the foreign, entry-level workers—even those familiar with the new problem-solving—will need complementary training in “soft,” social skills particular to the host country if they are to use their abilities to good effect.

Ideally of course, sending and receiving countries will develop these new, complementary programs in concert. The content of the problem-solving training in the developing countries should profit from the extensive experience that global firms and host country training systems have already accumulated in this area. And the “soft” skills, acculturation programs of the host countries will plainly benefit from on-going consultation with the relevant sending countries about the best ways to address the cultural frictions that arise in particular cases. By the same token, sending and receiving countries can, at least in prospect, both gain from meshing their efforts to support Diaspora networks; and there is likely to be in any case strong pressure from the high-skill members of such networks that they do so. Similarly, at the limit, they have common interests in jointly regulating the working condition and

environmental responsibilities of decentralizing supply chains so as to avoid protectionist reactions to off-shoring in rich countries and local protests against multinational imperialism in poorer ones. Political realities of course will often obstruct the realization of all potential gains. But an appreciation of the emergent possibilities will often help substantially to improve outcomes even when ideal solutions are beyond reach.

Against this broad backdrop, this paper examines ways to increase the chances that the migration of the highly skilled benefits sending countries. It is meant as a contribution to an emerging literature that sees the development of problem solving skills and a certain type of managerial culture as at least as crucial to economic development as such traditionally cited factors as clearly defined property rights or anti-inflationary monetary policies. In particular, we explore the formation of Diaspora networks as a search network or bridge institution linking global opportunities to the local capabilities of sending countries.

4. A Tale of Two Migration Streams

Global labor migration today divides into high-skill and low-skill streams whose superficial differences conceal important common sources, common features, and even common consequences. Or so we will argue.

The first, high-skill stream are the Diaspora networks. In the last decade expatriates have come to play a critical and highly visible role in accelerating technology exchange and foreign direct investment among the economies of India, China, Israel and the US. In some instances, these expatriates frequently became pioneer investors before the widespread decentralization of supply chains and internal decentralization of authority assured major capital markets that these developing economies had rosy futures. Some of these pioneers had, and continue to have, non-financial motives for early-stage participation. Others had, and have, means of mitigating risk unavailable to other investors by virtue of their intimate knowledge of language, culture, institutions and individual counterparts. The contribution of US-based Indian managers to a spectacular surge of IT and IT-related services in India is a paradigmatic win-win situation, where migration of highly skilled benefits both a sending and a receiving country. Other countries may be nearing the threshold of repeating the Indian or Chinese experience in that they have both successful expatriate communities and “risky” economies that frighten off mainstream investors while providing the opportunities from

which Diaspora networks grow. Still other economies, such as those in Latin American and the EU accession countries, are struggling to move to more knowledge-intensive development, despite significant FDI in recent decades. Their hope is that Diaspora networks can overcome obstacles to deeper integration by serving as an entry point into new markets. Discovered only recently, Diaspora networks so easily fit the architecture of the modern, knowledge society that they are coming to be seen as one of its natural building blocks.

Not so the second, relatively low-skill stream of current migration. Workers in this migratory stream have no advanced degrees. They may not be able to show prospective employers any school-leaving certificate or indeed any official documentation at all. They are not entrepreneurs, or at least not founders of high-tech firms. They often live in poor, high-crime neighborhoods, and their children are frequently at home neither in their parents' culture nor in their country of residence. Where the Diaspora networks seem to have emerged from nowhere to become part of a new cosmopolitan elite, the low-skill immigrants are frequently depicted unchanging, indeed determined *not* to change out of loyalty to inhabiting pre-modern cultures, wherever they happen to live.

Official and public reaction to the two migratory streams underscore these differences: Highly skilled talent is welcomed in virtually every country, while the low skilled are illegal and managed by the Ministries of the Interior. Highly skilled provide tangible benefits to receiving country in terms of new business creation and human capital, while the unskilled are perceived as draining the budget for social expenditures, and so a threat to solidarity. But once we drop the stereotypical and exclusive identification of modern, knowledge worker with diploma-bearing professional, we can find common features in the two streams that do not figure in public discussion.

First, the acquisition and development of skills is crucial to both migratory streams. This is obvious in case of the recent Indian engineering PhD who emigrates to the US; but it is also, if less conspicuously, true of the Mali secondary school graduate who emigrates to take a cleaning job in a nursing home in France. Given the absolute paucity of its current developmental possibilities, Mali is likely to have a comparative advantage in the "production" of such human capital; and as the health-system crisis revealed by the heat wave in the summer of 2003, countries such as France have a huge demand for the kinds of skills such workers offer. Put another way, many "low-skilled" migrants are "low-skilled"

only in comparison to certified professionals; they are far from unskilled in comparison both to the population of their country of origin and respect to the tasks that they may eventually be called on to perform in the host country.

Second, as suggested at the outset, in both cases the migratory streams are being redirected and transformed by profound and pervasive economic restructuring that creates important windows of opportunities and entry points. In the case of skilled talent, the global restructuring of supply chains is turning brain drains into brain circulation, creating or strengthening network Diasporas in the process. In case of the unskilled and illegal, the restructuring of the public administration that provides key social services together with the restructuring of shop-floor work is beginning to create career opportunities where earlier generations in analogous positions faced dead ends. This is not to romanticize entry-level work in the post-Fordist era. Many, perhaps most such jobs would be unbearable and unacceptable to most readers of this paper. But there is more evidence that even hamburger-flipping jobs lead somewhere surprisingly often in the new economy, and yet other evidence that public-sector restructuring—just now coming to public notice—will accelerate this tendency.

Third, in both migration streams social networks emerge as naturally occurring or spontaneous solutions to complex coordination problems: like manna, they fall from the sky, allowing the émigrés to match themselves to jobs, or to entrepreneurial possibilities. In connecting the émigrés to the world these networks create new possibilities for policy makers to learn from and with key social actors how to redirect institutions and incentives to meet emerging needs. Thus in what follows we will show that attention to Diaspora networks, helps uncover the partial solutions that are working; helps formalize the networks and makes them more effective as incubators for new programs and as governance structures for new projects; and reveals potential win-win dynamics benefiting both sending and receiving countries.

5. Mature Diasporas: China and India vs. Armenia

In this section we juxtapose a highly beneficial impact of Chinese and Indian diasporas on their home countries and a failure of another wealthy business Diaspora – of Armenia to effect noticeable impact to help move the country up global value chains.

China

The story—now familiar—of the post-War Chinese Diaspora is one of geographic mobility and economic diversification: the construction of a “bamboo network” linking Hong Kong, Taiwan, Singapore, Malaysia, Indonesia, Thailand, and the Philippines to each and to the mainland through meshed webs of family firms operating first in traditional trading and manufacturing, then in high tech and finance. The years following the Communist victory in 1949 are, for the refugees, a time of testing relieved—some would say redeemed—by rags-to-riches stories: In the conventional telling, frugal, canny traders, often with nothing but the clothes on their back, work their ways from factory floors to great wealth. Once the foundations of dynasty were laid in one new host country, the next step was geographic extension and diversification. Just as the House of Rothschild’s pater familias sent his sons from Frankfurt to Paris, London, and Naples, the early successes among the Overseas Chinese internationalized their business, delegating family members to set up firms in other promising locations within what was becoming, from their vantage point, Greater China. The new firms drew on the founder’s capital, and his rich social connections. But as the opportunities suggested by these latter were only accidentally connected to the founder’s original business interests, internationalization typically went hand in hand with diversification across areas of business activity as well. In time the family firms grew into dynasties, operating a myriad of small and medium sized firms in many sectors and countries, all under the direct, but secretive control of the founding family. In a vast geographic zone with under-developed financial markets and fragile legal institutions, the family and ethnic loyalties of the Overseas Chinese—backed up by the credible threat to blacklist anyone who violated the community norms of fair dealing—in effect reduced the cost to this group of organizing complex business transaction. The greater the reach of the Bamboo network, the greater, in principle, the competitive advantage. Soon the Overseas Chinese held key position in real estate development, component manufacturing, construction – sectors that put a premium on the ability to combine trading and productive skills. At the same time, Taiwan was developing a distinctive style of business organization that fused elements of the traditional Chinese small firm and the Silicon Valley start up. With the start of Deng Xiaoping’s “open door” policy in 1978, after the death of Mao Tse Tung, China turned away from isolation and autarky, and welcomed the successful Overseas Chinese as investors. The influx from Taiwan and Hong Kong was particularly great because of proximity and historical ties. Multinational firms flocked to the mainland, partly to decentralize existing operations to a low-cost location, partly to participate in the widely anticipated growth of a

huge market; and partnering with key members of the Chinese Diaspora is often regarded indispensable to navigating an opaque political environment. Traditional lines of business are increasingly being abandoned in favor of the most modern sectors of the economy. The Chinese Diaspora, having helped transform China, is now itself being transformed by the developments it encouraged.

India

Where the contribution of the Chinese network Diaspora to Chinese development started and was long sustained through investments in manufacturing, the contribution of the Indian Diaspora to domestic development began through linking domestic and foreign firms in the service sector. Where the Chinese experience shows that certain traditional forms of risk-mitigating investment behavior are by no means limited to traditional industries, the Indian experience shows that new models of business organization emerging in the continuing reorganization of supply chains can give rise to new patterns of development, in which economic learning begins through service provision, rather than industrial activity, and in which the key investments are in education and training, rather than equipment and physical plant.

The performance of the Indian software industry in the 1990s was spectacular. The industry grew during that time at an about 40 percent annually. Total revenues reached \$10.2 billion in 2002, of which \$7.7 billion derived from exports. Employment grew from 56,000 to 360,000, absorbing most of the 75,000 new IT graduates India produced each year. The number of firms more than quadrupled, from 700 to over 2800. The largest firms like Wipro and Infosys have proven capable of executing increasing complex and valuable projects. More generally, India has demonstrated that success in low-level business services outsourcing can be a building block for higher value added services.

The emergence of the Indian software industry was in some important ways a fortunate accident that almost surely can not be reproduced by other countries; but it was in some ways an accident waiting to happen, dependent on structural conditions that can indeed be influenced by policy. Thus the Indian government's deliberate emphasis on higher education and especially scientific education India created a domestic surplus of well trained scientists, engineers and technicians just when the internet and telecom booms and the Y2K problem happened to produce a massive deficit of these professionals in the West. More providentially

still, surplus US demand for programmers developed just when a critical number of Indian expatriates who had emigrated to the US in the 1970s and 1980s had become CEOs and senior executives in US technology companies. These executives in almost every instance played a critical role in giving their companies the confidence to outsource work to India. They were also patient sponsors as Indian firms gradually learned how to meet US quality and delivery requirements.

Even with these propitious coincidences, however, Western firms could not have outsourced work extensively to India were it not for the fact that the Indian government—oblivious to the prospect that software firms could become major employers and producers of tradable goods—had exempted the industry's largely white-collar workforce from much of the labor regulation that hampers India's traditional manufacturing. Even India's much criticized isolationist policy towards the computer industry proved fortuitous: By the early 1990s, when regulations were relaxed, isolation had weaned an entire generation of programmers from mainframes and forced it to master emerging client server and personal computer standards.

But while no other country or industry should expect to duplicate India's software luck, Indian experience demonstrates that outsourced business services can make a primary contribution to economic development in the 21st century, and that Diaspora networks can play a crucial role in establishing long-range collaboration in the supply chain. Business-service based growth eases the burden on developing countries in at least two important ways. First and most obviously, business services, unlike manufacturing, do not require (much) advanced infrastructure or large capital investments. The minimal requirements are educational: English speaking workers with various technical proficiencies. Most developing countries have or can be expected to develop such human resources for many convergent reasons. Second, as a new industry in developing countries, business services do not face either entrenched domestic competitors (with, perhaps, privileged access to government officials who set the rules of competition) or trade unions (allied, perhaps, with ministries of labor). Traditional forms of regulation, however legitimate in the historical context in which they arose, are thus unlikely to burden the development of business relations in a novel and largely uncharted situation.

The emergence of the high-skill Diaspora likewise reduces the burden on the developing country. The success of the Diaspora equips its members with high-level, internationally

current managerial skills of a kind that would, at best, be available to tiny elites at home. The apprenticeship that leads to the acquisition of such skills is long, even in the fast-paced sectors of the world economy. The average CEO of major US corporations begin their tenure at age 48, so Indian executives “naturally” emerged 20 years after arriving in the US for graduate school. The purely managerial training, moreover, shades into a broader political education which makes the successful members of the Diaspora well suited to bridge the differences between home and host cultures. First-generation immigrants typically try to remain inconspicuous in their host countries. They know all too well that their ethnicity can be a disadvantage, at least excluding them from the informal associations through which natives mentor their successors, and at worst exposing them outright discrimination. Reticence born of such concerns is noticeable in the Indian American community. But individuals with the ambition and prospects of becoming the CEO of public company must simply face and overcome such obstacles. Their success makes them symbols and spokespersons of their community in the host country even as host-country recognition gives new weight to their opinions at home.

Despite their different starting positions, the relation of the Chinese and Indian Diasporas to home country development seems to be converging. Recent surveys of their disposition to invest in the home country, discuss possible reforms and business opportunities with national officials, and to consider returning permanently themselves do not suggest that the Chinese Diaspora is more disposed to investment while the Indian focuses on relations among firms. But whether or not initially some differences are being effaced by continuing development, the two Diasporas were, and continue to be alike in that both are indeed manna solutions: win-win outcomes that, as it were, fell from the sky. But when home-country elites see development as at least as much a threat as an opportunity, they may well hesitate to cooperate with, let alone systematically enlarge the role of a capable Diaspora in the domestic economy. To get a first idea of the politics of the dilemmas of the Diaspora (and how, perhaps, to mitigate them) when this is so, we turn to the case of Armenia.

Armenia

At the beginning of the 1990s, after the fall of the Soviet Union, Armenia seemed well positioned for the transition to a developed, market economy. Armenia was the most educated and most industrialized of the Soviet Republics. Indeed, it was considered the Silicon Valley of the Soviet Union, with a major concentration of high-tech industries,

developed infrastructure, and a workforce known for tenacity and ability. In addition, Armenia (with about 3.5 million inhabitants in 1990) expected to be supported by the its Diaspora: more than one million Armenians live in the United States, and at least another million in Europe, Middle East, and Latin America. This Diaspora is famously successful both economically and professionally; and it is also well organized politically and socially. Another 1.5 million Russian Armenians, traditionally quite influential in the Kremlin, could be counted on as well. Finally, the territorial conflict in Karabakh has mobilized Armenians worldwide, greatly strengthened ethnical identity, and advanced national consolidation. While Armenia also had serious economic disadvantages—its landlocked location, the impact of the 1988 Earthquake, and loss of markets in the Soviet Union—on balance the country had a great potential for development.

But in fact Armenia, despite—indeed partly because of—its Diaspora was unable to realize its potential for rapid growth. The chief obstacle to development was a domestic elite composed—like the elite of many contemporary stalled states—of (communist) bureaucrats, security service officers, and managers of large state-owned enterprises. This elite did, and does, push aggressively for economic liberalization and privatization, but in a way that allows its own members (especially enterprise managers) to capture the major benefits of reforms. While such elites, in Armenia and elsewhere, welcome economic and political support from the Diaspora, they do not want to see Diaspora activists and investors perturb their own privileged position in the home country. Rather they treat the Diaspora primarily as a potential political and economic competitor.

The upshot is that “despite their outspoken support for investments, the Armenian government has been mostly interested in receiving humanitarian aid and long-term unrestricted loans – sources of funding they can control much more easily than direct investments” (Bremmer, 1996, p. 32). And because state officials benefit so much from imports, which remains the most lucrative business, many have a reason to oppose an influx of investments that could substitute imports by domestic production. The hostility of insiders has thwarted most of the Diaspora’s attempts to invest. And, compounding the problem, major Diaspora organizations have never systematically tried to protect their members from the elite’s abuse. Rather, the Diaspora tends to limit its public criticism out of concern for the government’s reputation. Nor has it attempted to evaluate rigorously the results of the massive assistance it has provided in the last decade. For this Diaspora, like other in similar

situations, act of giving seems more important than the actual effect. So while the regime in Yerevan has been heavily dependent on the Diaspora's support, the Diaspora did not use this reliance to secure a more active role in Armenia's development process. Just the opposite: the Diaspora gave unconditional financial and political support to a regime that has actually been blocking the Diaspora's attempts to expand productive investments. At the limit, the Diaspora's support relieves pressure on the domestic elite and therefore undermines demand for further reforms, especially for improvements in the business environment. The ruling elite gets additional resources for survival that provide a breathing space for delaying necessary reforms despite extreme poverty and emigration of the most skilled.

The principal lesson of the Armenian experience, therefore, is that absent a deep knowledge of the depth and direction of domestic reform, massive assistance by the Diaspora is not sustainable unless complemented by an active business support and investment program. By itself assistance eventually fuels emigration and concentration of economic power. It does not help (but just delays) resolution of the most important challenges of development. This is manna gone sour, even turned poisonous.

6. The Experience of an Emergent Diaspora: Example of South Africa

Skilled South Africans began emigrating before the fall of apartheid and the turn to democracy in 1994, although current emigration data and statistics does not permit an accurate estimate of the skills lost. Thus the South African Department of Home Affairs and Statistics South Africa only take into account emigrants who report themselves as such, while the actual number of emigrants could be as much as three times the official figures. Nonetheless, it is widely agreed that skilled workers continue to leave South Africa. Fully two thirds of the workers with the potential to emigrate have actually considered doing so; and research shows the migratory pattern to be skill based. The highly skilled are most likely to be drawn abroad, with no difference in the propensities to emigrate among equivalently skilled persons in various race groups.

A recent World Bank Survey of US-based expatriate alumni of the University of Natal confirmed that the professional Diaspora of South Africa resembles the mature Diasporas in being highly educated (with all having a bachelor's degree and 73% having a graduate degree or professional certificate), autonomous (35 percent respondents to are independent

professionals or small business owners), and in intimate contact with their homeland (the majority traveled to South Africa every 1 – 2 years, while 22 percent have ongoing business contact with the country, and 20 percent maintain contact through academic exchanges and relationships). Crucially the South Africans in the survey have substantial power and influence in the host country, with 33 percent saying that they have considerable or a lot of influence over the investment decisions of their organizations. Fully 96 percent of the respondents felt that as South African expatriates they had a distinct advantage doing business in South Africa. Most listed ongoing personal relationships and personal knowledge of the country as the reason for this. Half the respondents were involved in general professional and business networks, and half of these networks had formed contact with or had operations in South Africa. All this notwithstanding—and confirming that the South African Diaspora is indeed emergent, not mature—only 15 percent see any probability of doing business in South Africa within the next two years—very low expectations indeed when compared to those of other Diaspora communities (55 percent of the Armenian Diaspora, 82 percent of the Cuban.) Over 65 percent of the South African sample group saw little or no probability of investing or doing business in South Africa.

As South Africa has struggled to integrate itself into the world economy, while struggling with the AIDS/HIV pandemic, crime, and sharp fluctuations in the crucial Rand/Dollar exchange rate, enhancing relations to the Diaspora has become a salient concern. To that end South Africa has initiated two Diaspora networks, one encouraging direct collaboration and other transactions among members, the other encouraging the formation of mentoring relations between members already active in international markets and others aiming to do so. Together these networks suggest the range of activities that public-private partnerships of different sorts can use to explore the possibilities for directing Diasporas in the direction of manna solutions.

Take first the transactions-oriented South African Network of Skills Abroad (SANSA), established in 1998 jointly by the University of Cape Town's Science and Technology Policy Research Center and a leading French agency for scientific co-operation, The Institute of Research for Development (IRD). SANSA aims to promote collaboration between highly skilled expatriate scientists and technologists and their counterparts in South Africa. The target group are the relevant alumni of all major South African universities and Technikons. The portal to the network is a website (www.sansa.nrf.ac.za) which describes SANSA's

objectives, explains how to enroll on line and how to network with other members through electronic bulletin boards, discussion groups, and job postings. As of March, 2002 SAMSA had 2259 members located in over 60 different countries, of whom some 58 percent were South African citizens . In October, 2000, the National Research Foundation (NRF), part of the National Department of Arts, Culture, Science and Technology, took over responsibility for SANSa, and after some initial fumbling the NRF is managing, with some difficulty to stabilize. the network.

SAMSA's strength—the ability to facilitate transactions by enabling partners to find each other directly—is connected with a serious limitation—the inability, at least in the network as currently configured, to track the outcome of exchanges and communications between network members. Thus there is no data on the successes and failures of the network, and those who operate it can not learn from the successes and failures of the very transactions they help generate.

The second, mentoring network, the South African Diaspora Network (SADN), was developed by the UCT Center for Innovation and Entrepreneurship (CIE) through assistance from the World Bank Development Marketplace. This network, founded in 2001, focuses on developing knowledge and entrepreneurial connections between local South African firms and well connected and placed individuals in the United Kingdom. Drawing on expatriate organizations such as University alumni associations and the South African Business Club, an organization with members in the United Kingdom and United States of America, SADN aims to facilitate continuing collaboration between respected and influential ex-South African business people in key overseas markets and young, high potential South African based start-up ventures. Local clients were recruited through extensive media coverage in South Africa, and over 60 South African companies applied to be part of the Diaspora Project. These clients were interviewed or otherwise examined to check their suitability for inclusion in the Project. A smaller subset of the larger group was selected to participate in the Diaspora program. Some 40 overseas members (largely well connected ex-South Africans in the greater London area) were recruited by way of presentations held at the South African Business Club in London as well as at a UCT Graduate School of Business Alumni Association London Chapter meeting. So far the mentoring model of the SA Diaspora Network has resulted in some promising connections between growing firms and capable expatriates. But it is also clear the mentoring model will take time to yield results, and that

the network itself will have to develop the equivalent of strategic plan to increase the number and improve the quality of the connections it encourages. Here too a network that facilitates the self organization of its members cannot itself be (nearly) self organizing. Determining just which tools and additional infrastructure can make mentoring and transactional networks more effective is thus a major problem confronting policy makers aiming to make emergent Diaspora networks mature as quickly as possible.

7. Towards Policy Implications: ‘how to’ of institutionalization of Diaspora networks

The goal, at once humble and ambitious, is to scale up and render more accessible to deliberate control the informal Diaspora networks emerging in many countries. The research reported here tells us something about starting conditions, possibilities, and happy and unhappy endings. But it says little about steering the process of Diaspora networking in fruitful directions.

One obvious lesson is to be more attentive to the effects, good and bad, of network building than the network builders discussed here have usually been. Creating databases capturing who speaks and on occasion works with whom is important. But such information needs to be completed by careful investigation of why some contact work while many others don't. The obvious point is that it is hard to improve the performance of a network without detailed information on exactly how and why it is performing

An intuition suggested by this research but not directly demonstrated by it is that successful Diasporas co-evolve with their corresponding domestic institutions. Changes in one provoke changes in the other, making both more effective. The continuation of the Ramón García story illustrates this dynamic. Recall that García is the biotechnologist who started several joint ventures with Fundación Chile aimed at improving the yields and quality of crops such as grapes and peaches. In the course of these ventures García acted in effect as a systems integrator, bringing together key pieces of intellectual property regarding genes and DNA manipulation techniques. Once these pieces were in place, research teams could be assembled in Chile to apply the resources to solution of particular problems. Thus collaboration with Ramón García was not simply bridging existing Chilean capacities with new opportunities. On the contrary, the capacities were the result, not the starting point of the search for the key elements of the project. Perhaps even more fundamentally, collaboration

with Ramón García was teaching him and Fundación Chile new forms of network integration and project direction. But so far as we can tell, neither he nor they has reflected explicitly enough on the new learning to make it transferable broadly within Chile, let alone to other countries.