

Diaspora Knowledge Networks: Vanishing Doubts and Increasing Evidence

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Diaspora knowledge networks (DKN) deeply changed the way highly skilled mobility used to be looked at. They conceptually subverted the traditional “brain drain” migration outflow into a “brain gain” of expatriates’ skills circulation by converting the loss of human resources into a remote though accessible asset of expanded networks. Doubts and scepticism recently arose due to the novelty of the DKN phenomenon and the lack of historical perspective to assess experience and results. The critiques essentially bear on two aspects: the consistency and the efficiency of the networks. As a new social object and research area, DKN indeed required new tools, methodology and concepts to explore theoretical as well as empirical issues. This paper addresses the critiques by displaying the research process surrounding DKN. Systematically searching through the internet has been a major part of the research exercise, especially during recent years. The evidence definitely proves the ongoing activities of numerous DKN. The consistency of such networks is thus confirmed. Their specific features and their members’ identification processes at work with new information and communication technologies are explained.

During the last decade of the twentieth century, groups of highly skilled expatriates originating from developing countries and scattered in the OECD countries emerged and started to make connections among themselves and with their motherlands. These groups and their links definitely correspond to a diaspora scheme – although original – and thus have received different related labels: *intellectual diaspora networks* (Brown 2002); *scientific diasporas* (Barré et al. 2003); *technological and scientific diasporas* (Turner et al. 2003); *scientific, technological and economic diasporas* (Connan 2004); *knowledge networks abroad* (Kuznetsov 2005) and finally, *diaspora knowledge networks* (DKN), recently in a new project run by the International Committee for Social Science Information and Documentation (ICSSD) for UNESCO (Turner 2005).

Diaspora knowledge networks represent a subset of the numerous international knowledge networks that have long existed in the S&T sphere and that have multiplied and expanded in the last twenty years (Crawford et al. 1993; Elzinga and

Landstrom 1996; Parmar 2002; Stone and Mawell 2004). Apart from their wide diversity, this explains the difficulty in finding a definite substantive. The DKN considered here all share a common objective: to contribute to the development of their members' place of origin, through their skills input. The internet is used for this, although with varying intensity according to the activities of the networks.

Diaspora knowledge networks have deeply changed the way in which highly skilled mobility is looked at. They have conceptually subverted the traditional "brain drain" migration outflow into a "brain gain" skills circulation by converting the loss of human resources into a remote although accessible asset of expanded networks (Meyer et al. 2001). This shifted the traditional emphasis on embedded knowledge of potential returnees in a human capital approach (return option) to a connectionist approach where social capital, including technical and institutional links, is crucial (diaspora option; Meyer 2001). Consequently, in the need for an accurate description of these original associations, sociological observation has initially prevailed upon economic analysis of expected developmental effects.

Doubts and scepticism recently arose due to the novelty of the DKN phenomenon and the lack of historical perspective to assess experience and results. The critiques essentially bear on two aspects: the consistency and the efficiency of the networks. More precisely, their sustainability is severely questioned, as well as their real impact on developments in countries of origin. This challenge to the DKN approach emanates mainly from economic perspectives (Lowell and Gerova 2004 for the former, and Lucas 2004 for the latter). They deserve great consideration as they shed new light on the research object and they stimulate rigorous answers, which is the present purpose. The scientific confrontation of their arguments is best realised through an explicit demonstration of the coherence between the evidence collected, the methods used, the results obtained and the theory developed. Such work has not yet been done in a systematic manner and it is highly useful at this stage, for the development of research tools about transnational networks in general.

As a new social object and research area, DKN indeed requires new tools, methodology and concepts to explore both theoretical and empirical issues. This paper addresses the critiques and shows the research process on DKN. Systematically searching through the internet has been a major part of the research exercise, especially during recent years. Considering the increasing importance of this medium as a source of information for scientific purposes as well as for common knowledge, it is worth describing the rigorous methods used and the robust results produced. Such a detailed description is beyond the present remit and can be found in a special report for UNESCO (Meyer 2006). This paper refers the reader to that study's main findings, through three sections: first, a historical perspective on the evidence for DKN; second, a presentation of the debate that followed the initial "discovery" of such networks and a refutation of some of the critiques born from the elusive character of this new social and research object; third, some of these particular features are highlighted giving indications for policy orientations.

1. Diaspora Knowledge Networks: How Did they Come to Light?

In 1992, the Science, Technology and Development (STD) research team at the French Institut de Recherche pour le Développement (IRD) was in the process of launching a new programme on the international migrations of scientists, when it heard of an original experience from the Colombian community. The Caldas network of scientists and engineers abroad (Red Caldas – Red Colombiana de Científicos e Ingenieros en el Exterior) had been set up the previous year with the aim of mobilising, gathering and reconnecting expatriates with the mother country and with its brand new national system of science and technology. This initiative represented a unique opportunity to access evidence on a highly skilled expatriate community and to study an original response to the so-called “brain drain”. It in fact went far beyond the research team’s expectations and became an exploratory study of a burgeoning form of socialisation in the context of globalisation coming up with the regime of a knowledge-intensive socio-economy.

1.1. Empirical studies in the late 1990s

The Caldas network study was led by the STD team along with the Universidad Nacional de Colombia, and from 1998 onwards was followed by SANSa (South African Network of Skills Abroad)¹ in association with the University of Cape Town in South Africa. The research work followed a detailed protocol which seemed appropriate considering the configuration of the object of study and the geographical dispersion of the research team in Austria, Colombia, France, Mexico and the United States (Meyer et al. 1995; Meyer et al. 1997):

- a six-page questionnaire survey of 500 Caldas network members on their professional and associative activities, migrant trajectories and modes of communication;
- dozens of interviews of participants (members abroad, Colombian scientists and policy-makers at home, etc. ...);
- participant observations of six “nodes” (local associations of members) in Paris, Washington DC and New York, Mexico City, Paris and Vienna;
- biographical studies (life histories) of a few members, with a deeper analysis of the survey’s data;
- statistical and textual analysis of electronic communication through the R-Caldas mailing list.

Four of these five methodological items were conventional instruments in sociological and anthropological field studies familiar to multicultural societies’ investigation: survey, interview, participant observation, biographical approach. The fifth was rather new, using software of co-word analysis (*leximappe*) for the

¹ SANSa was set up in 1998 as a research-action project and later delivered as a national asset to the National Research Foundation, which is still running it today.

mapping of meanings and the visualisation of clusters of semantic relations, to highlight socio-cognitive convergences or dispersion within the diaspora (Granes and Meyer 2000).

For both the Colombian and the South African case studies, the tools were thus a mix of traditional and new techniques, although even the former were often used in a new way. The internet was used intensively, for an online questionnaire or for simultaneous coverage of various actors by several researchers in different places at the same time. Survey and participant observations were in this way dissociated from their local and physical support. This definitely multiplied the materials to work with, which fitted perfectly with the decentralised nature of the diasporic objects under study. But it also raised new challenges: control of survey respondents in the anonymous cyberspace or harmonising subjective biases in plural observation contexts, for example. Such challenges were addressed in an adaptive manner, checking the origin of responses through data consistency and neutralising interpretative divergences through continuous communication within the research team, as well as systematic description of the enunciation context, of both actor and researcher, interviewee and interviewer.

Red Caldas and SANSA were isolated case studies that brought a harvest of useful information. However, the scope of such studies remained limited by the empirical dimension of the research work. It was empirical in two ways: the need to gather evidence in order to understand the new phenomenon, and the non-systematic character of this work. The networks had indeed been discovered by random and the research techniques adapted to the circumstances. The results they produced were descriptive of situations at the micro (actors) and meso (networks) levels. However relevant they might be, the explanations given for diasporic processes could not be separated from idiosyncratic roots and particular features. The challenge of generalisation remained. The policy implications of the results obtained would quickly require that this generalisation process occur.

1.2. Scientific results and policy impact

Red Caldas and SANSA proved the feasibility of a diaspora option, i.e. the real existence of off-shore extensive human resources that could be mobilised by the country of origin. Some of the activities in which these contributions have been observed during these case studies, as well as in other instances, are summarised below:

- Exchange of scientific, technical, administrative or political information (contribution to the creation of the new Colombian National S&T system in the early 1990s, by prominent expatriates);
- Specialist knowledge transfer (waste management procedures from the École Polytechnique Fédérale de Lausanne-Switzerland, with the Universidad del Valle, Cali-Colombia);

- “Scientific or technological diplomacy” or promoting the home country in the R&D and business community of the host country (South African medical research in England, Indian IT entrepreneurs in Silicon Valley);
- Joint projects, partly on a virtual basis (distant working, simulations);
- Training: attending home-country sessions and meeting/mentoring students abroad (a feature shared by most networks of this type);
- Enterprise creation (including multinational subsidiaries) to assist the possible return of expatriates on a part-time or permanent basis (Chinese high-tech firms with returnees in science parks);
- *Ad hoc* consultations, for example on research/development projects (peer review, job recruitment, technology assessment).

Each network showed the obvious attractiveness of the diaspora scheme to expatriates. The Colombian network drew over 800 members from 25 countries at its peak and the South African one almost 2,500 from 65. Although this was but a fraction (between 10 per cent and 25 per cent) of the total highly skilled population that had migrated at some stage, the reconnection message sounded appealing to a majority of those actually receiving it.² In terms of academic diplomas and socio-professional insertions, they revealed a higher profile than their counterparts within Colombia and South Africa. Clearly, this was less due to the so-called “selective migration” process (migration picking up “the best and the brightest”) frequently assumed in an elitist vision, than to superior abilities developed through mobility, a view corresponding to a more constructivist approach. The evidence of surveys and biographical data indeed showed that the highest qualifications acquired by these expatriates, or the skills they exerted as professionals, were linked to their learning trajectories, in educational as well as labour activities, partly and often mainly within the host country (Meyer 2001).

Conceiving the expatriate individual’s abilities as a result of migration rather than a reason for it led to a different theoretical framework than under the brain drain paradigm. Skills were obviously built through associations involving many elements of host countries and operational within their own specific contexts. Socio-professional networks enrooted these skills and their carriers in particular settings, groups, institutions, technical systems and organisational procedures through which they made sense and reached productive efficiency. As individuals accumulating constructive associations, the expatriates were themselves heterogeneous networks that the DKN totalised, in a typical actor-network theoretical configuration (Callon 1986).

Contrary to the conventional view and according to statistical information from both research projects, these people showed stability rather than volatility and a

² Data produced by both the Caldas and SANSA projects (Brown et al. 2001; Charum and Meyer 1998); on recent estimates of expatriate highly skilled personnel in OECD states per country of origin; see Dumont and Lemaitre (2004).

deep integration into a definite host country instead of a frequent re-emigration pattern.

Interestingly enough, the immersion into the host country community has not contradicted a renewed identification with the country of origin through the DKN. The call for participation by both the Caldas and the SANSA networks has often caught people who had cut off collective links with Colombia and South Africa, respectively. The networks' knowledge and development projects brought them back into the national sphere. Their identification is therefore more proactive, turned to the future, than retrospective and based on memory. They may move equally in two universes, like amphibians, but they respect this double allegiance and do not erase borders, at equidistance between *communitarism* (maintenance of separate communities) and cultural alienation. Across frontiers, they weave professional and associative ties but they keep the reference to the common origin as a pivotal centre. These features distinguish the DKN from purely transnational communities (Vertovec 1999; Portes 1999) and bring them closer to the diaspora criteria (Cohen 1997) even though their scope is limited to professional, knowledge-based activities.

The Colombian and South African networks have had an erratic life for their respective fifteen and eight years, and they both recently went through a type of evaluation process (Chaparro et al. 2004; NRF 2005). The reports point to various difficulties but also to the persistence of their activities. In the late 1990s, within the context of great pressure on highly qualified resources worldwide, DKN such as these appeared as a very promising solution, a potentially win-win situation for knowledge-intensive as well as developing economies. The search for other examples then became crucial in order to assess the extent of the initiatives, to compare their conditions of realisation and to appraise the possibilities of using them or of creating new ones. This search required an important methodological investment that deserves to be described, for it is a step along the way in which sociological knowledge may be drawn from new sources about transnational communities, beyond a definite contribution to a scientific description of DKN.

2. Systematic Enquiry: Surfing and Fishing in High Waters

Four censuses of highly skilled diaspora networks have been made in the attempt to grasp the magnitude of the phenomenon, beyond isolated case studies.

- 41 expatriate networks of “developed” and “developing” countries were identified on the occasion of the June 1999 UNESCO World Science Conference (Meyer and Brown 1999);
- 106 networks referring exclusively to developing countries, in a 2002 state of the art analysis of scientific diasporas by a panel of international experts, published in September 2003 (Barré et al. 2003),

- 61 expatriate networks of “developed” and “developing” countries, in a report prepared for the World Bank (Lowell and Gerova 2004) in September 2004;³
- finally, 158 networks referring exclusively to developing countries, in 2005, with results presented in this paper, Section 3 and Appendix 1.

As Caldas, SANSA and a few other case studies had shown, the internet was a major if not the only “universal” medium through which such networks could become visible to the general public. There was no other common space to be explored and the search naturally turned to this one, quickly showing the limits of traditional search engines and techniques, even when exploited in a systematic manner. Societal links had to be added to automatic search in a socio-technic combination, to significantly increase the productivity of the exploration.

2.1. The limits of cruising in cyberspace with search engines⁴

Today, there are about 10 billion internet pages. Finding relevant network websites among such floods of information is like navigating in an ocean to discover new islands, without much indication of proximity and localisation.

For the initial systematic search, in 1999, the exploration relied upon repeated queries with a number of keywords deduced from the case studies (Caldas and SANSA) that had given some clues. Such terms as “expatriate”, “knowledge”, “abroad” and so on were then used extensively and applied to various country names. After weeks of enquiries with pre-Google search engines, the harvest of forty-one networks was collected. Although this result materialised a number of intuitions that the isolated case studies had provided before, the “natural” method used so far also showed its limits. The analysis indeed pointed at two specific difficulties: the tremendously diverse vocabulary of network names and the technical limits and biases of the search engines.

2.2. A method based on socio-technical assumptions

How to find these websites that are not to be found by querying web search engines individually? The answer lay in defining an alternative strategy that does rely primarily on human competence and knowledge, instead of search engines. Four techniques/methods were used:

- (1) To surf the Web in an alternating movement, visiting diasporic association websites, from which were found “links” web pages, where new diasporic association website addresses were discovered, and so on.

³ A new and as yet unpublished report by the same authors expands these findings to 97 “e-diaspora” organisations.

⁴ A full description of the methods used is provided in Meyer (2006, Appendix 1).

- (2) Having exhausted the links, websites that were cited in the literature, or given by the expert panel of the 2002–2003 state of the art, were explored.
- (3) Google or Copernic queries with a combination of specific keywords, which were selected not so much with the aim of finding many networks but for picking up at least one diasporic association. For example, such keywords as “physician”, “association”, “*host country*”, “*origin country*” could bring up the name of the association of physicians from a given origin and working in a given country – as it appeared that physicians were more likely than other professionals to constitute diasporic professional associations.
- (4) Some Usenet forums named after the scheme “*country.soc.culture*” are a classic meeting point for expatriates trying to speak with compatriots, and the relation of the diaspora with the origin country are commonly a matter of discussion. Google offers the archives of these forums, where a few website addresses have been discovered, which by any other means would have remained unknown.

In other words, sociological assumptions were made and effective links used (professional corporations, ethnic communities and the like) to serve as structural axes in a heuristic process. In an incremental manner, as the list of websites discovered expanded and the vocabulary enriched, and while geographical holes appeared more clearly, the focus of the search improved and each exploration became more efficient, especially for the 2005 enquiries, the results of which are presented in the next section.

As a conclusion to this methodology of tracking transnational networks through the internet, the mix of automatic information tools and human knowledge should be emphasised. Previous generation search engines were very effective in daily use allowing us to dig into an enormous amount of documentation with tremendous speed. But however sensitive they may be for general enquiries, when turning to specific targets they need to be fed, oriented, guided and completed by expert knowledge. For DKN studies, such a particular mix of human and technical mediations provides abundant evidence and gives very precise answers to doubts and critiques about the existence and stability of this new research object.

3. Facing the Critiques

As soon as they appeared, the diaspora knowledge networks raised as many doubts and critiques as they did enthusiastic expectations. As new social objects with potential economic – among other – advantages, they still are unfamiliar epistemic entities whose substantial reality and power would apparently need to be firmly established. At the moment, the scepticism and critiques essentially focus on two aspects: the consistency and the efficiency of the networks. This section mainly

addresses the former and leaves the latter for an economic set of arguments to be developed elsewhere. However, it is worth mentioning briefly here before going on to answer the consistency questions.

The second type of criticism relates to the effectiveness of these networks on the development front. Some analysts have found that the countries with more active diaspora knowledge networks are precisely those in the “emerging economies” category, many of them located in Asia and enjoying an incomparably better academic and industrial environment than most developing countries. As an illustration of this, expansion in the Indian computer industry is often attributed to the crucial input provided by associations of Indians working in Silicon Valley (see for example Saxenian et al. 2002), yet this factor would appear to count for less than the presence of local labour that is cheap and highly skilled (Lucas 2004). Hence some fundamental questions about the direct or indirect link between expatriate initiatives and local development. While a direct link does seem hard to establish – as it is in general for any knowledge input (educational or R&D) into the economy – there are some striking coincidences that bear it out. Diasporas help, at the very least, to create positive externalities that can be used by their networks to boost markets, which become more buoyant (Meyer 2005). The evidence on the impact should thus be conceived and analysed in a larger socio-economic framework than a limited cause and effect relationship.

3.1. Doubts on DKN consistency

In a recent report to the World Bank, Lindsay Lowell and Stefka Gerova called into question the findings of the analysis on the occasion of the 1999 UNESCO World Science Conference referred to in Section 2.

(Our work) ... updates Meyer and Brown’s (1999) list of 41 web-based diaspora networks and adds 20 additional organizations, as well as assesses the level of activity and involvement that a particular organization or network maintains. ... As [it] shows, since 1999, only 5 new networks – 9 if counting the ones established in 1999 – have been established, which does not suggest a proliferation of expatriate organizations and communities. And of those networks listed, 20 percent (12 out of the 61) do not have a website, suggesting a high rate of underutilization of available technology. In addition, many diaspora organizations are formed sporadically or on an ad-hoc basis. The inactivity rate in our sample is 34 percent (21 out of 61), defined either as lack of a website or any online information about the network, or as a website not updated in the past two years. Only 44 percent (27 out of 61) of the networks we examined are updated regularly, while just 56 percent (34 out of 61) have been updated recently within the last year (Lowell and Gerova 2004: 23).

In order to address systematically each of these statements they can be summarised successively:

- there is no DKN proliferation, with such a moderate number and slow increase;

- the internet is underutilised and does not represent a major factor of DKN expansion;
- activity is highly questionable as many networks seem dormant or no longer alive.

These observations lead the authors to the following conclusion:

The way in which these samples have been collected should give most researchers pause in strongly touting them as evidence of success, although it should be admitted that neither is such a sample conclusive evidence of a lack of success. Nevertheless, it appears that very few diaspora networks remain stable and manage to serve the needs of their membership or the home country for long periods of time. However reasonable it may be for optimism when evidence for diaspora networks is confirmed, especially as it corroborates loosely framed expectations about transnational activities, the evidence on their activity does not inspire the same confidence as to their effectiveness or impact (Lowell and Gerova 2004: 24).

The question of measured impact and effectiveness are not dealt with here, as explained in the introduction to this section. On the other hand, the existence of numerous networks as well as their visible ongoing activity are very specifically proven below. Without any doubt, the evidence brought by the Lowell–Gerova report was too weak to cover the real dimensions of the phenomenon.

3.2. Overwhelming evidence on the current existence and activity of DKN

Through the various methods presented in Section 2, the evidence for DKN has been gradually constituted in three successive steps: in 1999, 2002 and 2005. The results are displayed in Appendix 1, listing all the diaspora knowledge networks whose activity is confirmed as of 1 June 2005. Synthesising these results in addressing the issues raised in the World Bank study discussed above can be done on the same axes: network census figures, current activity, internet visibility and use.

3.2.1. A high number of networks and always increasing

The Lowell–Gerova report of September 2004 works on figures from the 1999 first census (Meyer and Brown 1999) and ignores those produced in 2002, published and widely disseminated in 2003 (Barré et al. 2003). In the latter, the number passed from 41 identified networks referring to all kinds of countries of origin – “developed” as well as “developing” – to 106 exclusively selected for their link with and orientation to development of so-called Third World countries. This increase was due to the systematic search techniques used and presented in Section 2. The results were made available as an appendix to the state of the art on scientific diasporas with URLs available for further enquiry (Barré et al. 2003). A new effort in 2005 increased the number to 158 identified DKN. If the Lowell–Gerova search figures are added to these – omitting the few duplicated networks –

the total of identified DKN amounts to 173 and concerns forty different developing nations plus four specific regional groupings. The fact that few duplications occurred among several enquiries, made at different times by different teams, with different techniques, as well as the ever-increasing list, increases the likelihood of finding even more networks in the future. Considering that some areas with high diasporic potential have so far remained rather in the shadow (Caribbean, Middle East) it would not be surprising that an exhaustive list of DKN would be over 300 and cover a majority of non-OECD countries. This evaluation is confirmed by recent figures from Asia (Meyer 2006).

3.2.2. A fragile though durable activity

The last census exercise, in 2005, checked the activity of every network. This was done by systematically collecting traces of very recent events (under one month) or, in the absence of such a trace, calling the coordinators, administrators or webmasters. In cases where no sign at all was emitted by the DKN and received by the research team, the network was not included in the confirmed active list. The result thus leaves no room for doubt: at least 101 of the 158 networks are definitely active today, representing almost two-thirds of the total (see Appendix 1). Their lifespan varies considerably from one network to another but is roughly ten years on average, judging by their reported history. Some are old associations that decided to go on air (set up a website) and others are just pure and fresh emanations from the internet.

More than half of DKN identified in 1999 (and relevant in the following lists) are still active today even if and when they reported difficulties (see Section 1.1 on the evaluation processes of Caldas and SANSA). These percentages are not far from those of the Lowell–Gerova study but the interpretation naturally differs considering the modest size of their sample, compared to the one here. There is no slow erosion of a small stock of DKN, but rather a lively forest of sometimes precarious, sometimes durable, organisms. In any case, this normal mortality rate should be considered in the light of the corresponding high-tech background. For example, in the United States, on average, three out of five new business start-ups fail within their first five years. No one would, however, infer from this figure that investing in technological innovation is a mistake ... Nonetheless, the question of the viability of the networks should certainly be examined through comparative analysis of failures and success stories, in order to understand their conditions of realisation. The list in Appendix 1 offers a large sample for such sociological and historical enquiries.

3.2.3. A definite reliance on the internet

As explained in Section 2, all 158 identified DKN have an internet window, as their existence has been essentially pinpointed through this medium. Even the 15 Lowell–Gerova items counted in the total of 173 networks mentioned above (see

Section 3.2.1) are all internet-based. There is no more convincing proof of this medium's importance. For some of these networks (12 of them, classified "type A" in Appendix 1) their very existence is on the internet, as they are pools of human resources mainly linked by the website artefact. The more general networks (38, classified "type B" in Appendix 1) are large associations for which only a part of their activities are explicitly turned towards knowledge and development issues with the country of origin. The specialised networks (48, classified "type C" in Appendix 1) focus on such actions, often in a very similar fashion to the Caldas or SANSA networks.

During the 2003 state-of-the-art analysis of scientific diasporas, a few networks with limited scope were found with a purpose definitely corresponding to the DKN characteristics included in Appendix 1 (origin a developing country, explicit development goals, highly skilled members, knowledge transfer and circulation) but without any website address or visible internet presence (Barré et al. 2003). The experts pointing them out happened to know about their existence by other means (personal knowledge, familiarity with specific diasporas). This tends to reinforce the hypothesis that a number of additional networks may still be found and that the list provided so far is not exhaustive.

There is a converging set of comments on use of the internet by the DKN at this stage, emphasising the fact that their use of information and communications technology has so far been limited compared with their potential in terms of interactive and effective distributed collective practice (Teferra 2003; Turner et al. 2003; Chaparro et al. 2004). Therefore, the DKN ICSSD/UNESCO project aiming at new developments in this area opens a field of useful insights and perspectives (Turner 2005).

4. Perspectives

Evidence, when gathered in a systematic manner through the internet, convincingly shows that there is a high and increasing number of diaspora knowledge networks. It also proves that a majority of them are still alive after some years of operation. This result gives a clear indication for policy as well as for further research.

DKN are substantial, consistent, initiatives of international cooperation, which states and intergovernmental agencies, as well as NGOs, may now consider seriously, beyond initial doubts about their existence and stability.

The content of the activities developed by these numerous networks is beyond the scope of this paper. A wide field of investigation thus remains open, as the few case studies so far have only scratched the surface of a deep and diverse sample. It is time to expand our knowledge about the conditions, representations, socialisation processes, modes of organisation and developmental impacts that DKN have (or not) through these activities. Recent Asian case studies do provide positive evidence on these aspects (Meyer 2006)

The findings presented do not prejudge the long-term viability of the networks and the intensity of their activities. But they do confirm their potential and provide precise materials to work on, both for cooperation as well as for research projects.

By way of conclusion, it is important to return to the individuals constituting these networks and to the potential development they represent. Case studies, especially on Africa, show that these highly skilled professionals identify themselves to their home country, much less because of the past than for the future and less because of an abstract memory than for specific development purposes. They feel that their higher cognitive, technical and social capacities may collectively be made available to their country and the expatriation situation exacerbates such feelings. Motivated by a contribution to the future through knowledge activities, these expatriates forge a diasporic identity in a projective rather than retrospective manner. Their common origin becomes more metaphorical than geographical, as can be seen with some networks whose members refer to the regional/cultural proximities cutting across national borders. African networks, for example, often exhibit a neo-pan-African approach, less ideologically or institutionally oriented than during decolonisation times and based rather on technical and pragmatic perspectives.

The diaspora must therefore not be perceived as a reaction to *communautarism* but rather as a creation of identity on a larger, inclusive, base. As a Latin American scientist in New York stated: “in Manhattan, as a Colombian expatriate researcher and member of the Colombian Caldas network, we used to organise AIDS prevention campaigns in Spanish for all the *latinos* in the area.” The linguistic community associated with the expatriate situation constitutes an opportunity for an identity expansion, in construction around a common project of contribution to the development of the place of origin and its population. This energy may appropriately be used by traditional nation-states for their own development as well as for their soft and progressive replacement by cosmopolitan citizenship (Beck 2006). This is where governance – facilitation of civil society initiatives – makes great sense: expatriate associations of scientists’ and engineers’ contributions can definitely be enhanced by public support and promotion.

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155 networks identified at 15 March 2005

Activity: N – inactive; R – return after test; Y – active; blank – no return
Type: A – pool of human resources; B – generalised network; C – specialised network
Year of identification: 1 – 2000; 2 – 2002; 3 – 2005

Geographical Zone /

Country

(37 countries + 4 areas)

Geographical Zone / Country	Name of Network	Website Address	Activity	Type	Origin
AFRICA (51)					
Africa (5)	International Society of African Scientists (ISAS)	http://www.dca.net/isas/	R	B	2
Africa	African Community International (The African Center)	http://www.africancommunity.net/	Y	B	2
Africa	International African Students Association (IASA)	http://www.iasaonline.org/		B	2
Africa	African Distance Learning Association	http://www.physics.ncat.edu/~michael/adla/	Y	A	2
Africa	Africa in the Netherlands	http://www.africaserver.nl/africadirectory/		A	3
Algeria (2)	Association Internationale des Chercheurs Algériens AICA	http://www.mygale.org/09/aica	N	C	2
Algeria	Association pour le Développement des Sciences Biologiques fondamentales et appliquées, en faveur de l'Algérie	http://www.algebio.org/		C	2
Cameroon (1)	Cameroon Society of Engineers (CSE), USA	http://www1.stpt.usf.edu/njoh/cse/cseusa.htm	R	C	2
Ethiopia (12)	Federation Ethiopian Organizations for the Spread of Knowledge (FEOSK)	http://www.physics.ncat.edu/~michael/vses/genet/ees/	Y	B	2
Ethiopia	Society of Ethiopians Established in the Diaspora	http://www.ethioseed.org/	Y	B	2
Ethiopia	Ethiopian Professionals Association Network (EPAN)	http://www.ethiotrans.com/epan/	Y	C	2
Ethiopia	Ethiopian Professors	http://www.angelfire.com/de/EthiopianProfessors/index.html	Y	A	3
Ethiopia	Ethiopian Students Association International	http://www.esai.org/	Y	B	2
Ethiopia	Ethiopian Distance Learning Association	http://www.physics.ncat.edu/~michael/edla/	Y	A	2
Ethiopia	Ethiopian Chemical Society in North America	http://ourworld.cs.com/ecsna1/index.htm?f=fs		C	3
Ethiopia	Ethiopian North American Health Professionals Association	http://www.enahpa.org/	Y	C	2
Ethiopia	Addis Ababa University Alumni Association	http://www.aau.edu.et/alumni/president.php	Y	B	3
Ethiopia	Ethiopian Economic Policy Research Institute (EEA/EEPRI)	http://www.eaecon.org/news.htm		C	2
Ethiopia	Ethiopian Scientific Society (ESS)	http://www.his.com/~ess/	???		2
Ethiopia	Gesellschaft zur Förderung der Medizin, Ingenieur und Naturwissenschaften in Äthiopien	http://www.emenssg.de/	???		2
Kenya (1)	Kenyan Community Abroad (KCA)	http://www.kenyansabroad.org/	Y	B	2
Mali (2)	Malinet, the Malian World Network	http://callisto.si.usherb.ca/~malinet/	R	B	2
Mali	MaliLink Discussion Forum	http://www.malilink.net/	Y	B	2
Morocco (12)	Moroccan Association of Researchers and Scholars Abroad (MARS)	http://www.ee.pdx.edu/~nadir/marsI.html	N	C	1

Morocco	Initiativgruppe Marokkanischer Ingenieur-Studenten für Regenerative Energien	http://www.imir.org/	R	C	2
Morocco	Savoirs et développement	http://www.savdev.org/asso.php		C	3
Morocco	Moroccan American Business Council	http://www.usa-morocco.org/	Y	B	2
Morocco	L'Association des Biologistes Marocains	http://www.biomatec.org/		C	2
Morocco	Association des Biologistes Marocains en Belgique	http://alize.ulb.ac.be/biomatec/		C	2
Morocco	MABIOL Forum des Biologistes Marocains dans le Monde	http://www.epita.fr:8000/~mabiol/		C	2
Morocco	Regroupement des Biologistes Marocains au Canada (RBMC)	http://www.rbmc.qc.ca/	Y	C	2
Morocco	Association des Physiciens Marocains en Belgique	http://www.ulg.ac.be/phymabel/	Y	C	2
Morocco	Vereinmarokkanischer Studierender und Absolventen in Bochum e.V.	http://www.ruhr-uni-bochum.de/vmsa/			
Morocco	Groupe Interdisciplinaire de Recherche sur l'Éducation au Maroc (GIREM)	http://www.fse.ulaval.ca/fac/href/girem/index.html			
Morocco	Association Scientifique Marocaine (ASMA)	http://web.archive.org/web/19980214082939/http://www.ift.ulaval.ca/~asma-net/Menu_principal.html	R		2
Nigeria (5)	Association of Nigerians Abroad	http://www.ananet.org/	Y	C	1
Nigeria	Nigerian American Public Service Professionals Association	http://www.nappas.org/	Y	C	2
Nigeria	Nigerian Business Forum (NBF)	http://www.nbfonline.org/	Y	B	2
Nigeria	Igbo Cultural and Support Network	http://www.igboesn.com/	Y	B	2
Nigeria	Association of Nigerian Physicians in the Americas (ANPA)	http://www.anpa.org/	Y	C	2
South Africa (1)	South African Network of Skills Abroad (SANSA)	http://sansa.nrf.ac.za/	Y		1
Sudan (1)	Sudan-American Foundation for Education, Inc.	http://www.sudan.com/safe/	Y		2
Tunisia (8)	Tunisian Scientific Consortium		R	C	1
Tunisia	Association des Tunisiens des Grandes Écoles (ATUGE)	http://www.atuge.org/	Y	B	2
Tunisia	Association des Chercheurs Enseignants Tunisiens de France (ACETEF)				2
Tunisia	Cercle de Recherche Interdisciplinaire Tunisien de Toulouse (CRITT)	http://www.chez.com/lecritt/			
Tunisia	Rassemblement des Étudiants Tunisiens de Nice (RETUN)	mailto:jaidane@caramail.com			2
Tunisia	Tunesische Wissenschaftliche Gesellschaft	http://www.uni-karlsruhe.de/~twg/	Y		2
Tunisia	Tunesische Akademiker Gesellschaft	http://www.thinktank.de/news/index.htm	Y		2
Tunisia	Association Scientifique Tunisienne à l'Université Laval (ASTUL)	http://www.ulaval.ca/astul/			2
Togo (1)	Communauté Togolaise au Canada (CTC)	http://www.diaistode.org/ctc/index.html	Y	B	2
ASIA (80)					
Asia (2)	Asian American Manufacturers Association (AAMA)	http://www.aamasv.com/	Y	B	2
Asia	Asia-Silicon Valley Connection (ASVC)	http://www.asvc.org/	Y	C	2
ASIA Middle East (10)					
Arab States (5)	Network of Arab Scientists and Technologists Abroad	http://www.asta-net.org/asta.html	M	C	1

Arab States	Islamic Medical Association of North America	http://www.imana.org/	Y	C	2
Arab States	National Arab American Medical Association (NAAMA)	http://www.naama.com/	Y	C	2
Arab States	Association of Muslim Scientists and Engineers (AMSE)	http://www.amse.net/	Y	C	2
Arab States	Union Arabischer Mediziner in Europa e.V. (Arabmed)	http://www.arabmed.de/	Y	C	2
Iran, Islamic Rep. of (1)	Iranian American Medical Association	http://www.iama.org/index1.php	Y	C	2
Iraq (1)	International Society of Iraqi Scientists	http://www.issiraq.org/Default.asp	Y	C	2
Lebanon (1)	American Lebanese Medical Association	http://www.almamater.org/index.htm	Y	C	2
Palestinian AT (1)	Palestinian Scientists and Technologists Abroad (PALESTA)	http://www.palesta.net		C	1
Turkey (1)	Society of Turkish American Architects, Engineers and Scientists, Inc. (MIM)	http://m-i-m.org/	Y	C	2
ASIA South (40)					
Bangladesh (11)	EB2000: Expatriate Bangladeshi 2000	http://www.eb2000.org/	Y	C	2
Bangladesh	TechBangla for transferring to and developing indigenous technology and products in Bangladesh	http://www.techbangla.org/			
Bangladesh	Bangladesh Environment Network	http://www.ben-center.org/	R	C	2
Bangladesh	Bangladesh Medical Association, North America	http://www.bmana.com/	Y	C	2
Bangladesh	American Association of Bangladeshi Engineers and Architects, NY-NJ-CT, Inc. (AABEA Tristate, Inc.)				2
Bangladesh	Bangladeshi-American Foundation, Inc. (BAFI)	http://www.bafi.org/	Y	B	2
Bangladesh	Association for Economic and Development Studies on Bangladesh (AEDSB)	http://www.aedsb.org/index.htm	Y	C	2
Bangladesh	Alochona	http://www.alochona.org/	Y	B	2
Bangladesh	North American Bangladeshi Islamic Community (NABIC)	http://www.nabic.org/	Y	B	2
Bangladesh	North America Bangladesh Statistics Association	mailto:mali@gw.bsu.edu			2
Bangladesh	Bangladesh Chemical and Biological Society of North America (BCBSNA)	mailto:kamal.das@netl.doe.gov			2
India (16)	India Network Foundation	http://www.indnet.org/	Y	B	1
India	Silicon Valley Indian Professionals	http://www.sipa.org/	Y	C	1
India	Worldwide Indian Network	http://theory.stanford.edu/people/arjun/WIN.html	R		2
India	GOPIO Global Organisation of People of Indian Origin	http://www.gopio.net/	Y	B	3
India	International Association of Scientists and Engineers and Technologists of Bharatiya Origin				1
India	Interface for Non-Resident Indian Scientists and Technologists Programme (INRIST)	http://sunsite.sut.ac.jp/asia/india/jitnet/csir/tokten.html			1
India	The Indus Entrepreneurs (TiE)	http://www.tie.org/	Y	B	2
India	Indian CEO High Tech Council (ICEO)	http://www.indianceo.com/			2
India	Network of Indian Professionals	http://www.netip.org/	Y	B	2
India	American Association of Physicians of Indian Origin (AAPI)	http://www.aapiusa.org/	Y	B	3

India	Association of Kerala Medical Graduates	http://www.akmg.org/	Y	C	3
India	Society of Indian Scientists Abroad (SISAB)	http://www.sisab.net/default.asp	Y	C	2
India	Japan-India Technology Network (JITNET)	http://sunsite.sut.ac.jp/asia/india/jitnet/	Y	A	2
India	Enterprising Pharmaceutical Professionals from the Indian subContinent	http://www.eppicglobal.org/			
			Y	C	3
India	National Federation of Indian-American Associations	http://www.nfia.net/	Y	B	3
India	Indian Professionals Network	http://www.ipnatlanta.net/ipn/	Y	A	3
Nepal (8)	Network of Nepalese Professionals	http://www.netnp.org/index.html			2
Nepal	Association of Nepalis in America	http://www.anaonline.org/index.php	Y	B	2
Nepal	Nepalese Entrepreneurs Group (NEG)	not yet			2
Nepal	Nepal United States Educational Network	http://nusf.homestead.com/			2
Nepal	America Nepal Medical Foundation	http://www.anmf.net/	Y	C	2
Nepal	Empower Nepal Foundation	http://empowernepal.hypermart.net/			2
Nepal	Sajha Career Network	http://www.sajha.com/sajha/html/network.cfm	Y	A	3
Nepal	Society of Ex-Budhanilkantha Students	http://sebsonline.org/	Y	B	2
Pakistan (4)	Return of Qualified Expatriate Nationals to Pakistan	http://www.rpi.edu/dept/union/paksa/www/html/pakistan/TOKTEN/html			1
Pakistan	Association of Pakistani Physicians of North America (APPNA)	http://www.appna.org/	Y	B	2
Pakistan	Association of Pakistani Scientists and Engineers of North America	http://www.apsena.org/		C	2
Pakistan		http://www.apcep.org/			2
Sri Lanka (1)	Lanka Academic Network (LAcNet)	http://www.lacnet.org/lacnet/	Y	B	2
ASIA Central (1)			Y		
Armenia (1)	Armenian Volunteer Corps	http://www.armenianvolunteer.org/		A	2
ASIA South East (14)					
Lao PDR (2)	United Laotian Americans (ULA)	http://www.theula.org/main.html	Y	B	2
Lao PDR	Association de Soutien au Lycée de Vientiane	http://aslvte.online.fr/		B	2
			Y		
Malaysia (1)	Malaysian Scientist Abroad Search	http://www.mastic.gov.my/masticlink/stm/sctdlm.asp		A	2
			Y		
Philippines (4)	Brain Gain Network	http://www.bgn.org/		C	1
Philippines	Society of Filipino-American Young Professionals (SFAYP)	????????			2
Philippines	Society of Philippine Surgeons in America	???????	Y		2
Philippines	Association of Philippine Physicians in America	http://www.aboutappa.org/index.html		C	3
			Y		
Thailand (5)	Association of Thai Professionals in America and Canada	http://www.atpac.org/		C	1
Thailand	Association of Thai Professionals in Europe	No website			1
Thailand	Association of Thai Professionals in Japan	http://owl.fedu.uec.ac.jp/ATPIJ/	Y		1
Thailand	Reverse Brain Drain Project – Thailand	http://rbd.nstda.or.th/		C	1

Thailand	Thai Physicians Association of America	http://www.geocities.com/tpaa1/index.html			2
Viet Nam (2)	Vietnamese Professionals Society (VPS)	http://www.vps.org/sommaire_en.php3	Y	C	2
Viet Nam	Association Odontologique France VietNam	http://www.aofv.org/		B	2
ASIA East (15)				Y	
China (9)	Society of Chinese Bio-scientists in America	http://www.scba-society.org/	Y	C	1
China	Chinese Scholars Abroad	http://chisa.edu.cn/		C	1
China	American Association of Chinese Physicians	http://ourworld.compuserve.com/homepages/aacp/	Y		2
China	Oriented (online network for Taiwan's global community)	http://oriented.org/	Y	A	2
China	Overseas China Physics Association	http://www.ocpaweb.org/ocpa/	Y	B	2
China	Chinese Association for Science and Technology, USA	http://www.castusa.org/	Y	C	3
China	Association of Chinese Scientists and Engineers	http://www.acse.org/index.php	Y	C	3
China	Association of Chinese Professors of Social Sciences in the United States	http://www.kennesaw.edu/acpps/ ; http://www.sicet.org/		Y	C
China	Chinese Economists Society	http://www.china-ces.org/		C	3
Rep. Korea (6)	Global Network of Korean Scientists and Engineers	http://www.kosen21.org/english/kos11.html	Y	C	1
Rep. Korea	Korean-American Scientists and Engineers Association (KSEA) (ex-Korean Scientists Engineers Association of Sacramento Valley)	https://www.ksea.org/		Y	C
Rep. Korea	Society of Korean-American Scholars (SKAS)	http://www.skas.org/	Y	C	3
Rep. Korea	Association of Korean Physicists in America (AKPA)	http://www.akpa.org/		A	3
Rep. Korea	International Association of Korean Lawyers (IAKL)	???			2
Rep. Korea	International Network of Korean Entrepreneurs (INKE)	http://www.inke.org/			2
LATIN AMERICA & CARIBBEAN (24)				Y	
Latin America (4)	Association Latino-americaine de Scientifiques (Latin American Association of Scientists) – ALAS	http://www.unesco.org/		Y	A
Latin America	Consejo Latinoamericano De Biomedicina Experimental Network CLABENET	http://169.237.95.4/clabenet.html		B	2
Latin America	Sociedad de Biofisicos Latinoamericanos (SOBLA)	????	Y		2
Latin America	Interamerican College of Physicians and Surgeons (ICPS)	http://www.icps.org/intro.html		B	3
CENTRAL AMERICA & CARIBBEAN (4)				Y	
Cuba (1)	Medical Education Cooperation with Cuba	http://www.medicc.org/		C	2
El Salvador (2)	Conectandonos al Futuro de El Salvador (Connecting to El Salvador's Future)	http://www.conectando.org.sv/			1
El Salvador	Salvadoran American Medical Society	http://www.samsdoctors.com/			2
Haiti (1)	Association of Haitian Physicians Abroad (AMHE)	http://www.amhe.org/	Y	C	2
SOUTH AMERICA (16)					
Argentina (7)	Asociación Argentino-Norteamericana para el Avance de la Ciencia, la Tecnología y la Cultura	http://www.anacitec.org/		R	2

Argentina	Profesionales Argentinos en el Exterior (PROAR)	http://www.anacitec.org/proar/index.html	Y		2
Argentina	Asociación de Profesionales Argentinos en el Reino Unido (APARU)	http://www.aparu.org.uk/index.php	Y	C	3
Argentina	Argentinos en Red (AER)	http://argentinosenred.org.ar/modules/news/	Y	B	3
Argentina	Red de Estudiantes y Graduados Argentinos en Estados Unidos	http://www.red-argentina.net/red-argentina.htm	Y	B	2
Argentina	Alumni Foundation de Argentina	http://www.fundacionalfa.com.ar/	Y	B	2
Argentina	Raices (Red de Argentinos Investigadores y Cientificos en el Exterior)	http://www.raices.secyt.gov.ar/		C	3
Colombia (4)	Profesionales y Estudiantes Colombianos en el Exterior	http://pecx.com/index.pl		B	1
Colombia	Colombian Network of Researchers Abroad – Brazilian node	http://www.mat.unb.br/~ayala/nodobrasil.html			1
Colombia	Colombian Network of Researchers Abroad – Italian node	http://www.pg.infn.it/redcaldas/	Y		1
Colombia	Red Caldas (Red Colombiana de Cientificos e Ingenieros en el Exterior)	http://www.colciencias.gov.co/redcaldas/index.php		C	3
Peru (2)	Red Cientifica Peruana (Peruvian Scientific Network)	http://www.rcp.net.pe/peru/peru_ingles.html	Y	B	1
Peru	Peruvian American Medical Society (PAMS)	http://members.aol.com/PAMS1996/			2
Uruguay (1)	Red Academica Uruguaya (Uruguayan Academic Network)	http://www.rau.edu.uy/	Y	B	1
Venezuela (2)	El Programa Talento Venezolano en el Exterior (Program of Venezuelan Talents Abroad – TALVEN)	http://www.embavenez-paris.com/divers/talven.htm			1
Venezuela	Venezuelan American Medical Association	http://www.vama.org/			



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**“Transnational Knowledge
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