

Strategies Sectors | **Culture & Society**

# Brain Drain from the Southern Mediterranean

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The issue of brain drain has been revisited by analysts from three southern Mediterranean countries: Algeria, Morocco and Tunisia. The new view from the Maghreb is based on data published by the OECD (2014) on international migration, as well as data from the French National Institute of Statistics and Economic Studies (INSEE, 2014) and recent surveys conducted in the Maghreb. An increase has been observed in the number of highly skilled migrants flowing from central Maghreb countries abroad. What is behind this increase? Is it brain drain? If so, what can be done? The Maghrebi analysts use different approaches and methods to show that the drain is persistent and further driven by the active immigration policies of countries in the North. These analysts reveal brain waste in those countries, although brain gain is also expected in return from migrant scientists.

## Overview of Migration from Central Maghreb Countries

In 2015, the central Maghreb countries (Algeria, Morocco and Tunisia) had a combined population of just over 80 million residents, more than twice (UNDESA, 2015) the 27 million recorded in 1960. These countries are also known to be countries of emigration. According to data from the UN (UNDESA, 2015), there is a combined stock of some 5 million immi-

grants from these countries abroad – equal to 6.2% of the resident population – of which nearly 90% live in Europe. The number of highly skilled Maghrebi immigrants in OECD countries is estimated to be about 800,000, accounting for an average share of 20% in 2010 compared to 10% in 1990 (OECD, 2014).

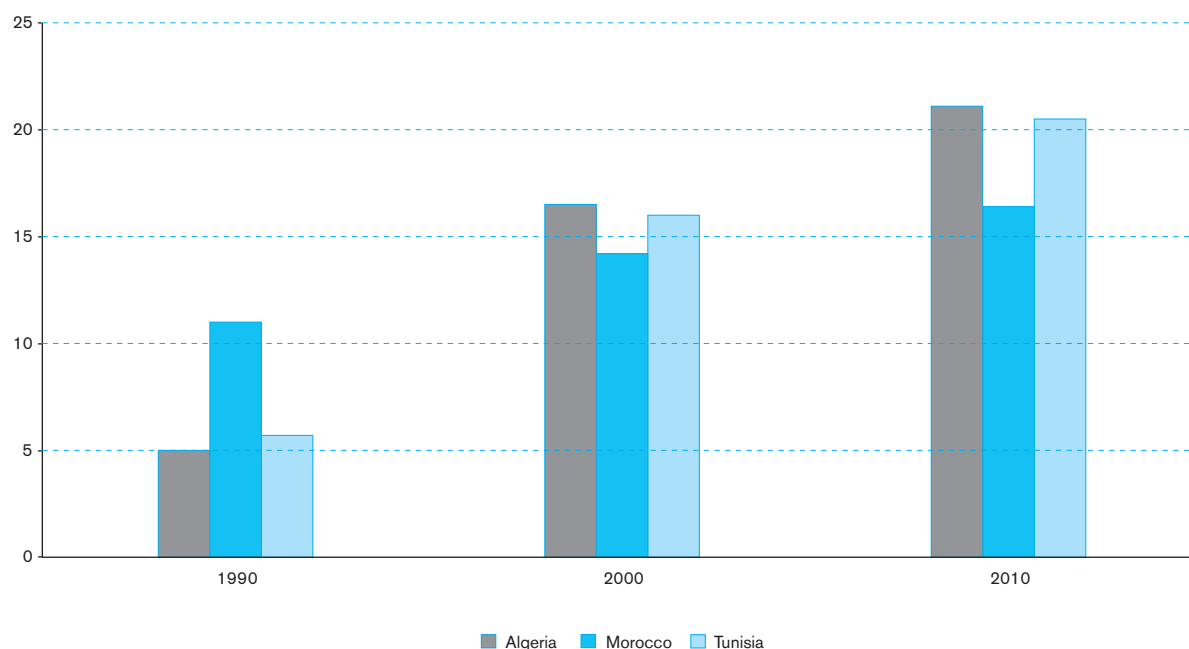
As can be seen, the rate of increase is not the same for all three countries. Algeria has seen the strongest growth, with the share of highly skilled migrants climbing from 5% in 1990 to 21% in 2010, equal to a multiplier effect of 4.2, compared to 2 for Tunisia and 1.5 for Morocco. This raises certain questions. Is this increase indicative of a drain of “trained” qualified workers from the countries of origin? If so, what rate of brain drain has been observed? The OECD data are too limited to provide the answers to these questions. French statistics will thus be used to attempt an estimate.

## Analyses of Maghrebi Skilled Workers in France

According to data from the *Emploi* (Employment) survey (INSEE, 2012), there are an estimated 324,000 active, highly skilled Maghrebi migrants aged 25 and over in France.

These data shed light on certain hitherto largely unknown details. Of particular interest are the engineers and doctors. The stock of these two professions is quite similar overall. Once again, Algeria seems to be the exception, with three times as many doctors and two times as many engineers as its neighbouring countries. While knowledge of Maghrebi engineers is fairly well documented,<sup>1</sup> the second profile, i.e. doctors, calls for more in-depth analysis.

<sup>1</sup> GOBE, Eric et al. *Les ingénieurs maghrébins dans les systèmes de formation : Systèmes de formation. Filières coloniales et pratiques professionnelles. Professionnalités contemporaines*. Institut de recherche sur le Maghreb contemporain de Tunis. No commercial publisher, 225 p., 2001. <https://hal-mnhn.archives-ouvertes.fr/halshs-00120303/document>



Source: Prepared by the author based on data from the OECD.

TABLE 19

Breakdown of Maghrebi Migrants in France by Qualification Held

Qualification	Morocco	Algeria	Tunisia	TOTAL
Higher than a baccalaureate + 2 years	87,294	95,630	26,782	209,706
<i>Of which, doctors of medicine</i>	5,106	17,658	5,106	27,870
<i>Of which, bachelor degrees</i>	4,961	21,034	4,961	30,956
<i>Of which, engineering degrees</i>	6,787	14,115	6,787	27,689
Baccalaureate + 2 years	52,407	44,255	17,325	113,987
<i>Of which, advanced vocational training certificates</i>	8,891	17,762	8,891	35,544
<b>Total (1) population with a university-level education</b>	<b>139,702</b>	<b>139,885</b>	<b>44,107</b>	<b>323,694</b>
Total (2) employed immigrant population (25-46 y.o.)	640,046	453,395	230,402	1,323,843
Share of university-educated migrants out of total immigrant population (1/2)	21.8	30.9	19.1	24.5

Source: Prepared by the author based on data from the Emploi survey (INSEE, 2012, France).

What types of doctors are in greatest demand in mainland France?

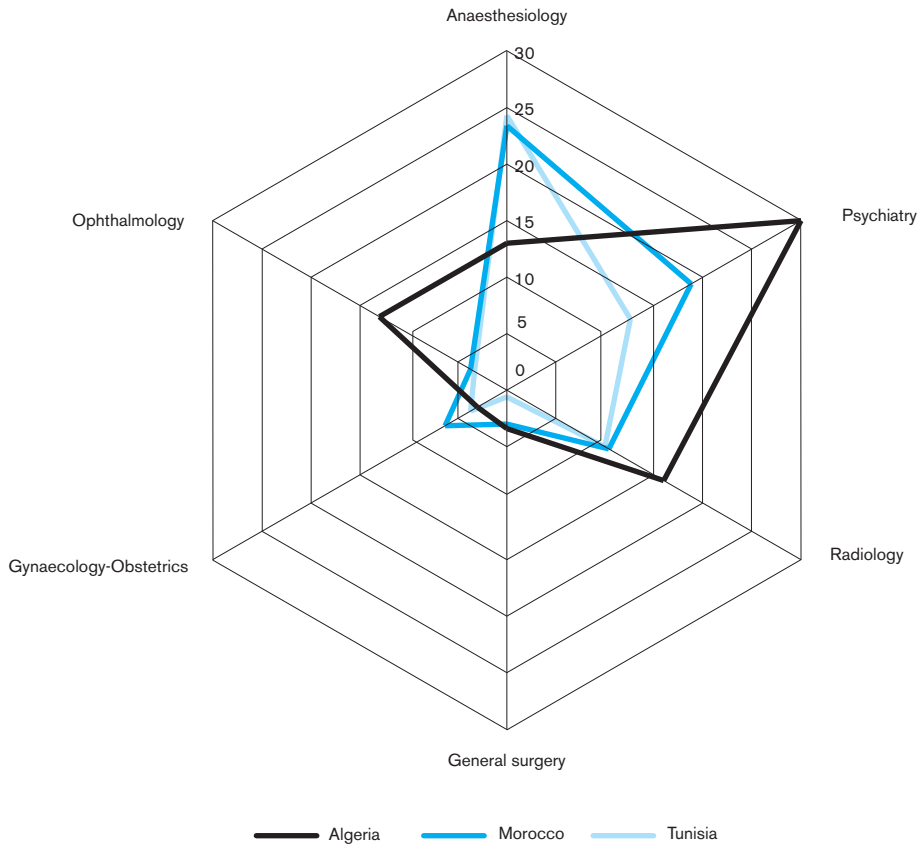
Data from the French Medical Association (2014) enable an initial analysis. The rate of brain drain<sup>2</sup> can be estimated for certain specialities based on the population of practising physicians in the Maghreb, according to data from the World Health Organization (WHO).

The highest rate of brain drain (at 30%) is found amongst Algerian psychiatrists; the rates for professionals with this profile from the other two countries are likewise high. Algeria also has the highest rate of brain drain for radiologists and ophthalmologists. For doctors from both Morocco and Tunisia, the most popular speciality in France is anaesthesiology, at around 24%.

<sup>2</sup> This rate is calculated based on doctors *born and trained* in the country of origin and living in the host country compared to the total number of practising physicians in the country of origin. See: ZEHNATI, Afcène. *La démographie médicale en Algérie : formation, activité et brain drain*, in MUSETTE, Mohammed Saïb. *De la fuite des cerveaux à la mobilité des compétences ? Une vision du Maghreb*. Algiers: CREAD/BIT, p. 171-190, 2016.

CHART 22

Rate of Brain Drain of Maghrebi Doctors by Specialty in France



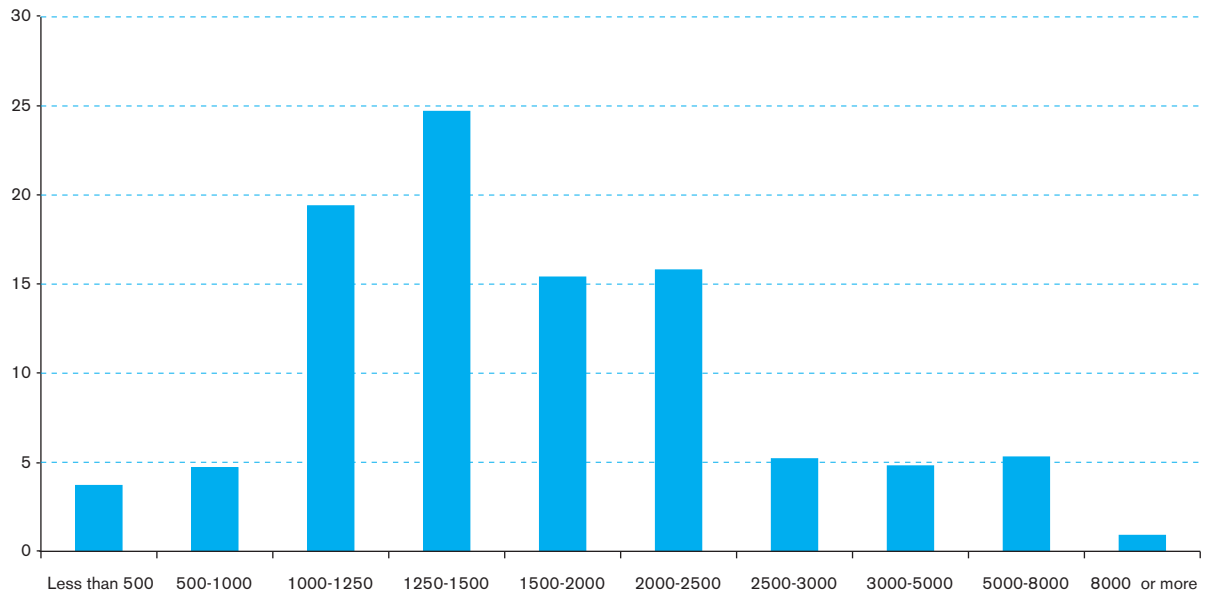
Source: Prepared by the author based on data from Ahcène Zehnati, CREAD, 2016.

### From Brain Waste to Brain Gain? Crossing the Diaspora Network

These findings call for an examination of the various approaches to brain drain. The first approach focuses on remittances; it is the approach advocated by analysts at the World Bank (Bollard, 2009). This approach holds that migrant scientists living abroad can contribute to the development of their countries of origin not only by sending home their savings, but also through their knowledge, know-how, etc. A second approach highlights the potential for “brain gain” (Stark, 2005). Under this view, the higher the demand for a given profile abroad, the more demand there will be in the country of origin for training in it. Thus, over time, if migrants return, it will lead to a gain in experienced personnel able to contribute to the economic development of the country of origin. Finally, a last approach focuses on the formation of “diaspora networks” (Meyer & Brown, 1999; Gaillard & Meyer, 2005) that bring migrants together within

the context of professional and scholarly associations. These networks can serve as links to the skilled population in the home country. As a result of the rise of information and communications technology, there has been a shift from associative movements to online social networks. The verification of these three approaches on the ground has yielded mixed results. With regard to remittances, empirical studies conducted in the Maghreb show that highly skilled workers contribute little in the way of remittances (MIREM, 2008). The working conditions of highly skilled workers moreover point to brain waste. These workers are often “underpaid” and, thus, over-qualified.

The results of the Emploi survey (INSEE, 2012) show that the level of remuneration of skilled workers from Algeria ranges from less than 500 euros to 8,000 euros or more. Some 35% earn less than 1,500 euros, 25% between 1,500 and 2,500 euros, and 37% more than 2,500 euros. This remuneration does, of course, include a category of underpaid



Source: Prepared by the author based on data from the INSEE in Musette (Algiers: CREAD/BIT, 2016).

people, but it also depends on the number of hours worked and, thus, on the nature of the migrants' employment contracts.

The economist Aomar Ibourk (2016) has reported a similar skills mismatch amongst Moroccan workers. A sense of over-qualification can be found, in particular, amongst young, highly skilled workers living abroad. There is also another unequivocal finding: the non-recognition of qualifications earned in the country of origin by the labour market, especially in Europe.

Ibourk also looked at the expected gains of skilled migration. In this regard, the incentive to increase one's human capital is higher for young people with low levels of education interested in trying to emigrate.

The work of the Tunisian economists Mohamed Kouini & Mohamed Boughzala offers interesting insights into the incentivizing effect of brain drain (El Jafari, 2012) with regard to increasing human capital. One of their most striking findings was the low level of return migration, especially amongst highly skilled Tunisians. This finding also holds true for the other Maghreb countries.

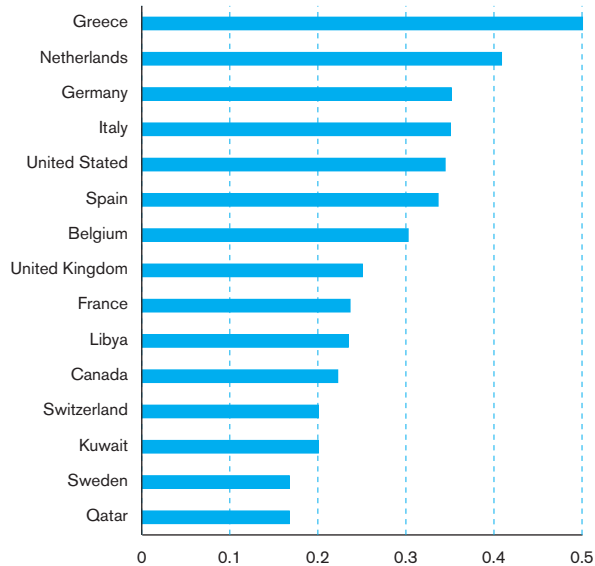
The final thesis regarding the "diaspora network" has yet to be confirmed in the Maghreb countries.

There is certainly a wide variety of Maghrebi networks abroad, which are currently further encouraged and facilitated by the Internet and other new media. The list compiled by ANIMA<sup>3</sup> for the southern Mediterranean countries offers an initial overview of the formation of networks. They are quite varied and not exclusive to scientists.

Briefly, one might say that migration of Maghrebi scientists has almost the same make-up in Europe. The living and working conditions of these migrants, trained in their countries of origin, reflect forms of discrimination resulting in brain waste, whether in terms of their remuneration, the recognition of their qualifications or even their professional standing. As for gains, the number of skilled workers who send remittances is low compared to the total number. However, the few who do send them provide a fairly substantial amount (Musette, 2012). The scientific networks in the diaspora have not yet managed to establish themselves as true conduits for investment in the country of origin. This brings us back to the work of the analysts from the IPEMED (Beckouche, 2011) on the shift from migration to mobility in the context of Mediterranean countries of different means.

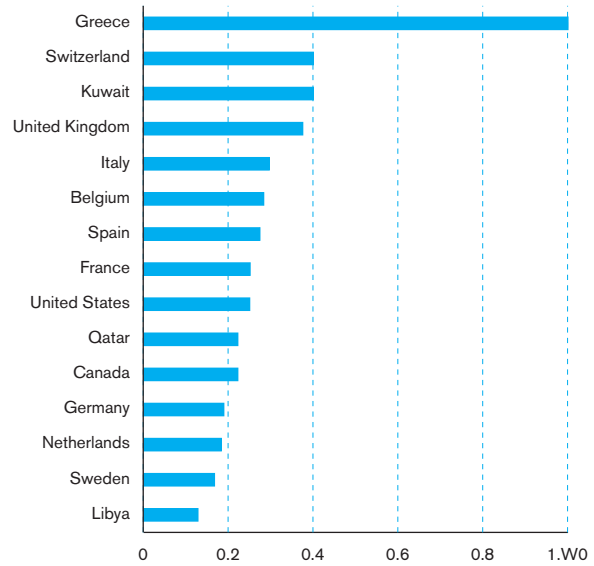
<sup>3</sup> ANIMA Investment Network is a multi-country cooperation platform for economic development in the Mediterranean. [www.animaweb.org/fr/missions#sthash.jsw117wb.dpuf](http://www.animaweb.org/fr/missions#sthash.jsw117wb.dpuf)

CHART 24 Rate of Non-Recognition of Qualifications



Source: Prepared by the author based on data from Aomar Ibourk (2016).

CHART 25 Share of Overqualified Workers



Source: Prepared by the author based on data from Aomar Ibourk (2016).

## Future Avenues of Research

Some aspects of brain drain have yet to be explored. Three questions in particular have received little attention to date and require further examination: return migration, dwindling remittances and, finally, investment by the Maghrebi diaspora.

- (i) The Maghrebi diaspora is not comprised solely of “scientists,” but rather encompasses all the elites (political, economic, social and cultural), as well as talent (artists, athletes). A closer examination of the diaspora networks would offer insight into their real potential to contribute to the development of their home countries.
- (ii) The idea that remittances are on the decline is a strong assumption based on the demographic profile of migrant senders. In fact, not all migrants send remittances, nor – as can be seen – are all senders of remittances migrants. They may be the children of migrants or relatives of migrant families. The example of Algeria is telling in this regard: more than 90% of the remittances sent through bank channels come from “retirees.” This generation can be expected to disappear in the short term.
- (iii) Recent studies on remittances by the UNECA show that investment by the diaspora remains

quite low; a greater mobilization of resources is expected by the countries of origin. The shift from remittances to investment remains to be seen.

Overall, brain drain and the eventual decline in remittances raise new questions regarding the relationship between migration and development, which remains one of the most important issues on the UN’s agenda. The crises (political, economic, social) affecting the region are likewise giving rise to new forms of migration, to the forced displacement of populations not only between Maghreb countries but also from countries in the subregion to the North.

## References

- BECKOUICHE Pierre, LE BRAS, Hervé. *Méditerranée. Passer des migrations aux mobilités*. IPAMED. [www.ipemed.coop/adminIpemed/media/fich\\_article/1315907212\\_IPEMED\\_PasserdesMigrationsauxMobilités\\_fevrier2011.pdf](http://www.ipemed.coop/adminIpemed/media/fich_article/1315907212_IPEMED_PasserdesMigrationsauxMobilités_fevrier2011.pdf)
- BOLLARD, Albert et al. *Remittances and the Brain Drain Revisited: The Microdata Show That More Educated Migrants Remit More*. WP 718876 The World Bank Review, Vol. 25, No. 1, p. 132-156, 2009.

- [www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/05/29/000442464\\_20130529150727/Rendered/PDF/718870JRN0v25000Box377323B00PUBLIC0.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/05/29/000442464_20130529150727/Rendered/PDF/718870JRN0v25000Box377323B00PUBLIC0.pdf)
- BRZOZOWSKI, Jan. Brain Drain or Brain Gain? The New Economics of Brain Drain Reconsidered. 2008. <http://ssrn.com/abstract=1288043>
- EL JAFARI, Mahmoud (dir). *Determinants and Impacts of Migration and Remittances: The Case of Palestine and Tunisia*. FEMISE Research Programme, 2012. [www.femise.org/wp-content/force-download.php?file=uploads/2013/12/FEM33-161.pdf](http://www.femise.org/wp-content/force-download.php?file=uploads/2013/12/FEM33-161.pdf)
- GAILLARD, Jacques and MEYER, Jean-Baptiste. "Le brain drain revisité : de l'exode au réseau." In: *Les Sciences Hors de l'Occident au XX<sup>e</sup> siècle*, Vol. 7. Coopérations Scientifiques Internationales, p. 331-348, 2005. [http://horizon.documentation.ird.fr/exl-doc/pleins\\_textes/pleins\\_textes\\_7/carton07/010008946.pdf](http://horizon.documentation.ird.fr/exl-doc/pleins_textes/pleins_textes_7/carton07/010008946.pdf)
- IBOURK, Aomar. "Analyse des effets de la migration des compétences : incitation et déclassement professionnel – cas du Maroc," p. 267-288, in MUSETTE, Mohammed Saïb. *De la fuite des cerveaux à la mobilité des compétences ?* CREAD/OIT, Algiers, 2016.
- INSEE. *Enquête Emploi en continu 2012*, 2014. [www.insee.fr/fr/themes/document.asp?ref\\_id=irsoceec12](http://www.insee.fr/fr/themes/document.asp?ref_id=irsoceec12)
- ISMAILI IDRISSE, Boutaina. *Transferts de fonds des marocains résidant à l'étranger (MRE) : Contexte, évolution et perspectives de renforcement*, UNECA Report, 2015.
- LE BRETON-LEROUVILLOIS, Gwénaëlle. *Les flux migratoires et trajectoires des médecins*. Paris: Conseil National de l'Ordre des Médecins (CNOM), 2014. [www.conseil-national.medecin.fr/sites/default/files/flux\\_migratoires\\_trajectoires\\_des\\_medecins\\_2014.pdf](http://www.conseil-national.medecin.fr/sites/default/files/flux_migratoires_trajectoires_des_medecins_2014.pdf)
- MEYER, Jean-Baptiste and BROWN, Mercy. *Scientific Diasporas: A New Approach to the Brain Drain*. 1999. [www.unesco.org/most/meyer.htm](http://www.unesco.org/most/meyer.htm)
- MIREM. *Migrants de Retour au Maghreb*. Réintégration et enjeux de développement. Directed by Jean-Pierre CASSARINO. General Report, 2007. [http://cadmus.eui.eu/bitstream/handle/1814/7720/MIREM\\_RAPPORT\\_GENERAL\\_2007\\_10.pdf?sequence=1](http://cadmus.eui.eu/bitstream/handle/1814/7720/MIREM_RAPPORT_GENERAL_2007_10.pdf?sequence=1)
- MOULAY, Samir. *Transferts de fonds des tunisiens résidents à l'étranger - Etude préliminaire*, UNECA Report, 2015.
- MUSETTE, Mohammed Saïb. *De la fuite des cerveaux à la mobilité des compétences ? Une vision du Maghreb*. Algiers: CREAD/BIT, 2016.
- MUSETTE, Mohammed Saïb. *Étude sociologique des transferts entre migrants et non migrants d'Algérie (1962-2008) : Analyse des comportements des remiseurs algériens*. Doctoral thesis, University of Algiers 2, 2012.
- OECD. *Database on Immigrants in OECD Countries (DIOC)*, 2013. [www.oecd.org/els/mig/databaseonimmigrantsinoecdcountriesdioc.htm](http://www.oecd.org/els/mig/databaseonimmigrantsinoecdcountriesdioc.htm)
- STARK, Oded. "The New Economics of the Brain Drain." *World Economics*, Vol. 6, No. 2, April-June 2005, p. 137-140. Reprinted from *World Economics*. [https://mpra.ub.uni-muenchen.de/30939/1/MPRA\\_paper\\_30939.pdf](https://mpra.ub.uni-muenchen.de/30939/1/MPRA_paper_30939.pdf)
- UNDESA. Trends in International Migrant Stock: The 2013 Revision – Migrants by Destination and Origin, 2013. [www.un.org/en/development/desa/population/theme/international-migration](http://www.un.org/en/development/desa/population/theme/international-migration)
- ZEHNATI, Ahcène. "Démographie Médicale en Algérie. Formation, Activité et Brain Drain ?" in MUSETTE, Mohammed Saïb, *De la fuite des cerveaux à la mobilité des compétences ?*, Algiers: CREAD/OIT, p. 171-190, 2016.