

Diasporas scientifiques et co-développement des pays d'origine et d'accueil. Une approche par étude de cas.

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Afin de contribuer au débat proposé dans cet atelier, je prendrais tout particulièrement appui sur les données récoltées dans le cadre du projet de recherche Géosciences (Prof. D. Vinck) qui regroupe plusieurs dizaines d'entretiens semi-directifs réalisés dans une ville universitaire française avec des doctorant·e·s, des docteur·e·s et des post-doctorant·e·s venus notamment d'Asie, d'Afrique, d'Amérique latine et ayant effectué tout ou partie de leur thèse à l'étranger. Ma contribution pourra également mobiliser des éléments recueillis sur les parcours universitaires migratoires plus couramment effectués du Nord au Nord (dans le cas des bases de données Garcia et Pocarim). Nous verrons que la problématisation des mobilités Sud-Nord vs Nord-Nord (et-ou l'emploi de méthodologies différenciées en écho à cette distinction) soulève elle-même des interrogations.

Ma participation pourra plus particulièrement s'appuyer sur des études cas qui permettront de problématiser des questions en lien avec les diasporas scientifiques et d'imaginer collectivement des méthodologies de récolte de données pertinentes pour les résoudre.

J'imagine partir de trois cas variés pour nourrir le débat collectif.

D'abord celui d'un iranien ayant immigré en France afin de réaliser sa thèse en Sciences des techniques et coupé de son pays d'origine sur le plan professionnel et scientifique.

Ensuite celui d'un chercheur chilien en Sciences sociales, installé durablement en France, mais très engagé dans la collaboration scientifique avec son pays d'origine.

Enfin celui d'une doctorante tunisienne en cotutelle de part et d'autre de la mer Méditerranée, dont l'activité simultanée dans deux institutions/laboratoires de génétique en France et en Tunisie participe d'une coopération organisationnelle (partage de matériel, délégation de diagnostics...) étroite entre les milieux hospitaliers et universitaires de ces deux pays, et qui envisage un retour vers son pays d'origine.

“Transnational mobility and social capital of early-career academics: A network approach”

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Paper abstract

Today, transnational mobility is often presented as an indispensable element in the career trajectories of young academics. In many countries, stays abroad at other universities are considered a necessary part of an academic career, the rationale being that, in order to be successful, academics must establish transnational scientific networks and broaden their academic horizons by experiencing different academic contexts.

Using the network data from the qualitative network and biographical interviews carried out with academics at three universities – Zurich (CH), Cambridge (UK), and UCLA (USA) – we are currently working on a paper which we intend to submit by the end of November 2016: M. Schaer, C. Jacot & J. Dahinden, “Transnational Mobility and Social Capital of Early-Career Academics: A Network Approach”.

At the core of this paper is the question of the link between transnational mobility and academic social capital. In a first step, the network data are used to uncover the salient links between key aspects related to our core question. The network data show that academics with a higher degree of transnational mobility (i.e. more stays abroad) have indeed a more transnational network (i.e. a higher number/proportion of transnational ties). However, this network transnationality does not translate into an increase of ‘academic social capital’; and nor does a higher degree of mobility enhance academic social capital. Further analysis shows that academic social capital is linked to the level of academic position: academics holding a stable position have more academic social capital than fixed-terms academics. Likewise, academics experiencing an upwards mobility in terms of level of academic position also experience an increase of academic social capital. In a second step, qualitative data are used to gain a better understanding of the mechanisms at play behind the uncovered relations (of lack of thereof).

Language and Migration: Heirlooms from the Motherlands

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When people move to a new country, one thing they always carry with them is their mother tongue. Many will continue to speak their language at home or with other immigrants from their home country. Their children might speak the parental language at home, but are likely to speak the dominant language of their new land at school and in their adult lives. Their grandchildren, growing up as natives of the new land, will generally have just a passing relationship to their linguistic heritage.

Many migrants maintain an ambivalent relationship to the language they grew up with. On the one hand, it is the "hearth" language (as expressed in Kabyle (Berber)), which ties them to the families and communities they left behind. It can also mark an in-group in the new land, a club of people with evidently similar experiences who can provide social or professional support. On the other hand, it is useless for communicating with their new neighbors and colleagues, and will not advance them or their children in the new lives they are facing.

Newly added to this picture, however, are ICTs that open up ubiquitous communications possibilities with people back home, and with people from the homeland who have migrated to other places with other new languages. For SMS, Facebook, or Skype, the mother tongue retains its centrality in relationships with family and friends who they may never visit, but "see" every day. The communications may not match current linguistic norms, for example mixing in words from new languages, or shifting spellings because of space or keyboard constraints, or the migrants using old forms while the language evolves among its home population, but the technology keeps the language alive for the migrants in ways that were never before possible. Not only can the migrant talk regularly with Mom back home, but the children can grow up video-conferencing with Grandma and watching media on YouTube in the ancestral tongue. To some extent, shifting locations may involve less language displacement than in years gone by, as people keep a virtual foot in the social groups they grew up with even if they are physically far apart.

With these factors as prelude, we are at the early stages of a project that seeks to engage diasporic populations in producing resources for the languages they grew up with. Migrants often have better access to technology (equipment, network reliability, bandwidth, connection speeds...), more time or lower opportunity costs for participating in voluntary activities, and potentially a greater sentimental pull to keep the hearth fire burning through attention to their language. The Kamusi Project is building resources for numerous languages that rely on their speakers to share their linguistic knowledge. While the past few years have been largely devoted to building the community participation systems, we are now technically (but not financially) ready to open the gates for contributions for at least 100 languages. We posit that diasporic communities, especially those that can be mobilized by online social networks, will often take a leading role. People will have various motivations, whether to give something back to the communities they left behind, to keep themselves connected to the lives they grew up with, or to produce something that can help keep the language and the culture it represents alive with their children. It is too early to say what we will learn from our participants, but not too early to discuss how we are geared to do so. The proposed presentation for this workshop, therefore, will focus on the linguistic situations that migrants face and the prospects that digital technologies offer to engage their languages constructively, with actual behavior as an open question for the ongoing research.

Mobility in the development of human resources within science in Mexico

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The task of producing indicators for scientific and technological production (S&T) has played an important role within the field of science and technology policy as well as social studies of science, technology and society. Among the academic literature, one can find studies within the areas of bibliometrics and scientometrics that propose various methodologies for the production of such indicators. The new dynamics of science, such as internationalisation and globalisation, represent new challenges for the production of indicators that reflect the systems that are being assessed. Furthermore, the emergence of new fields, scientific collaboration networks and the concentration of skills are new characteristics that the methodologies for S&T indicators can include. Within this framework, several works have sought to map the geographical profile of science and technology from the perspective of various entries and focusses: a) the spatial distribution of research and citations, b) the existence of spatial biases in collaborations, citations and mobility, and c) the citation impact of national and international collaborations (Frenken, Hardeman and Hoekman, 2009). In some of the works that fall within these studies, we can see the presence of the spatial dimension in the production of new S&T indicators (Leidesdorff and Persson, 2010; Bornmann et al., 2011).

The mobility of human resources and the spatial dimension of science have also been relevant issues in the social studies of science, technology and society. In Latin America, these themes have been approached from the perspectives of the internationalisation of science (Vessuri, 2003), brain drain (Didou and Gerard, 2009; Özden, 2005), scientific diasporas (Meyer and Brown, 1999), and scientific collaboration networks (Robles-Belmont 2014). Most of these works have been characterised by their qualitative nature, and some have confined themselves to making descriptive statistical analyses. Indeed, the lack of data on the mobility of highly-skilled human resources has made it difficult to carry out precise and comparative studies (Didou, 2009; Özden, 2005). In the case of Mexico, several questions regarding the mobility of scientists have remained unanswered. What are the main countries for the training of Mexican researchers outside Mexico itself? How is mobility distributed? What is the evolution and tendency of this mobility? etc.

Therefore, this work concerns itself with describing the mobility of Mexican researchers during the time that they undertake their doctoral studies overseas. Public information from the National System of Researchers in Mexico up to 2013 contains useful data for mapping and studying the mobility of human resources within the context of scientific training through doctoral studies. On the one hand, these data are analysed with

descriptive statistics tools to identify trends for different indicators; on the other hand, with the help of an analysis of social networks and the geographical location of the places where the doctorates were obtained, the results obtained represent geographic maps of the mobility of researchers during their doctoral training. These results provide us with elements that help define and assess their mobility and their paths. Moreover, it is possible to draw up temporary maps to show the evolution of mobility over time, and also how to produce them for different areas of knowledge. These results can lay the groundwork for the formulation of new questions, and the identification of scientific actors that have mobilised themselves during their training could prove useful for qualitative surveys.

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MONITORING DIASPORA: AN APPROACH BASED ON SCIENTIFIC TRAJECTORIES OF COLOMBIAN RESEARCHERS

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ABSTRACT

The increasing international mobility of professionals from various latitudes (World Bank, 2016 and UIS-UNESCO, 2014) clearly shows many questions associated with the insertion of this migration in the target countries and the ties with the country of origin. To date, studies addressing the relationship between mobility, migration and diaspora lead to different conceptual and methodological approaches that require analysis regarding with empirical evidence to understand this issue.

CONCEPTUAL ISSUES: TRANSNATIONAL COMMUNITIES

The divergent approaches to brain-drain or brain-gain defines the study of diasporas as a complex phenomenon, which long ago, has had various avenues of approach and academic analysis as well as the public policy, with has important effects in both recipient countries and countries of origin.

This study conceives the diaspora as a vector of development and recognizes the potential of mobility of human resources of high level under the logic brain-gain; where the implemented initiatives might provide learnings to the teams involved in different countries.

In the attempt to strengthen the diaspora's studies based on the notion of knowledge communities (Foray, 2004) and transnational communities (Faist, 2008; Wickramasekara, 2010, Tejada, 2012, 2016), this proposal provides a case study with the intention of evidencing as diasporas play a key role in the processes of society's construction related to experiences of whom are gaining international knowledge.

In developing countries, the international mobility of human resources with postgraduate training at doctoral level, offers various dimensions and opportunities of expandability and definition of academic projects which are performed in universities and research centers.

In the specific case of some countries in Latin America as Colombia: (1) the expansion of higher education systems and (OECD, 2012; OECD, 2016) and (2) increased cooperation in scientific and technological production represents at least two dimensions, where the diaspora can play a significant role in strengthening of knowledge communities which can be more open and inclusive.

But this social construction requires a favorable context and the efforts of heterogeneous actors. Therefore, It involves the configuration of individual and institutional capabilities that may converge on initiatives in the countries of origin and destination, affecting in a long term the consolidation of these knowledge communities.

In recent decades, new ideas on migration and international mobility of human capital has oriented different studies' perspectives and research topics. According to Tejada (2012), there is a diversity of conceptual and methodologic approaches in the academic level and in the design

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of public policies and programs regarding with complex issues, which was previously argued by Logue (2009).

MONITORING DIASPORAS

The difficulty of the monitoring mechanisms for the international mobility and diaspora involve the recognition of the attachment with the home country. The monitoring suits a brain-gain vision type of the diaspora and it may stimulate the contact between the people in the diaspora and their home country, reflecting an identity and belonging to a transnational community, according to the report in Tejada (2012).

How is it possible to identify this phenomenon? who are part of it, what are its characteristics, what are the aspects which represent mainly its state and dynamic?

Some works move towards the mapping of the human resource flows in science and technology (UIS-UNESCO, 2014) or on the identification of Careers Doctoral Holders (Gokhberg et al 2016; OECD 2012) that allows to identify interest groups; other works deal with the mobility of human capital linked to science process, technology and innovation and the relationship with the scientific production.

In the case of diaspora in developing countries, some works analyze experiences of co-developing projects, considering the international mobility, the collaboration on the country or by oriented networks towards knowledge communities.

The increase on the international mobility of professionals coming from diverse countries (World Bank, 2016 and UIS-UNESCO, 2014) puts on evidence several questions associated to the insertion of this population in the host countries and the bonds that these population holds with their home country. In the light of these problems, the works that deal with the relationships between mobility, migration and diaspora brings up several conceptual and methodological approximations, which require an analysis based on empirical evidence that contributes to understand this situation.

A recent work on this direction, proposes the analysis of the scientific production collaborations between Argentina, Colombia and Uruguay in order to identify and establish contact with the researchers that are found in a diaspora group, in the framework of the project CIDESAL (Meyer et al, 2016).

These works and the current discussion propose the necessity of monitoring the diaspora, which implies to consider their scope. In the view of the availability of different sources of secondary information, the possibility of establish mechanisms of contact and monitoring of the diaspora is opened. This with the purpose of identify and characterize the interests of the researchers and define future action lines that allows to build a transnational community, a place for encounter and dialogue.

PROPOSED APPROACH

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This propose analyzes the academic and scientific careers of a group of Colombian professionals who have reported international mobility with financial help by agencies to perform doctorate studies. Furthermore, these professionals have been part of diaspora or returned to Colombian institutions.

Some of these researchers are located abroad or have returned to the country of origin and demonstrate knowledge production through scientific publications, and ongoing participation in science, technology and innovation projects.

METHODOLOGY AND NFORMATION SOURCES

In the first phase, there is a integration of entities information which are funding research, giving scholarships to further studies abroad in agencies and universities. This process is done with data of researches curriculums which are available on the ScientI COLCIENCIAS platform is integrated.

To date, one limitation associated with the recognition of the diaspora is that researches information is not updated. It includes training, professional formation, mobility and research projects participation.

The initial information obtained in the second phase may allow to define the research target that has shown mobility for academic purposes; however, it is necessary to use other sources of information to supplement the trajectory of researchers (Bozeman, 2005).

The study of Meyer et al. (2016) uses international collaborations included in ISI-WoS as a starting point. This contribution is significant; however, ISI-WoS limits the movement of certain research results, for countries like Colombia. The table 1 show the differences between authorship practices in papers published by authors affiliated to Colombian Institutions according to where the journal is indexed, 2005 to 2014 (OCyT,2015).

Author		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Web of science core collection ¹	Single authorship	116	87	139	249	337	376	358	422	389	284
	National collaboration	229	365	502	864	1 090	1 155	1 325	1 282	1 328	1 384
	International collaboration	718	829	1 082	1 435	1 420	1 738	1 910	2 314	2 544	2 460
Web of science SciELO CI ²	Single authorship	373	528	634	765	827	983	1 153	1 126	1 093	983
	National collaboration	510	811	998	1 370	1 602	1 802	1 961	2 060	2 105	2 134
	International collaboration	179	219	298	396	404	497	636	626	646	649
Scopus	Single authorship	135	231	289	364	464	554	621	749	822	839
	National collaboration	503	724	903	1 535	1 732	2 136	2 299	2 705	3 073	3 314
	International collaboration	956	1 158	1 363	1 752	2 103	2 343	2 595	3 144	3 252	3 561

Source: Web of Science, Scopus (OCyT - 2015)

¹ Includes de Science Citation Index Expanded, Social Science Citation Index and the Arts & Humanities Citation Index.

² Existed differences between Web of Science's core collection and SciELO CI included in the Web of Science to highlight differences among them.

Table 1 Differences in authorship practices in papers published by authors affiliated to Colombian institutions according to where the journal is indexed, 2005 - 2014

In the second phase, this proposal uses queries from Scopus. This collection extends the spectrum of collaboration of the diaspora of Colombian professionals in different areas of knowledge and complements the corpus used with unstructured information from sites like ResearchGate or Academy, which can establish verifiable links.

With respect to the initial repository, it is proposed to complement the integration of secondary information with a survey to validate part of the academic career of professionals included in the study, as well as investigate the aspects that favors or limits the construction of a transnational community from the distance or as part of the doctors who have returned to the country.

This task is feasible, thanks to similarity algorithms that allows the integration of existing data (sometimes inaccessible) and research agents, allowing a continuous identification and download of the information.

In this sense, the use of bigdata tools analytics can help to monitor the trajectory of human resources, from the identification and characterization of the professionals who are part of the Colombian diaspora, in terms of mobility and collaboration in science, technology and innovation in an open and globalized environment.

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Asylum seekers and refugees' access to HE in Europe:
Comparative insights on a new public issue

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While only 1% of refugees access Higher Education, (Sampaio, 2016), it has become a hot topic of European higher education actors' agenda since 2015, as testified by the flourishing number of position statements at European, national, and institutional higher education levels, through various medias such as websites, press release, journals or conferences. Amongst the actors pushing this issue on the political agenda, actors in charge of migration issues cohabite at international level with higher education actors. The United Nations hosted several conferences¹ on the topic, as the British Council². In June 2016, the European Association for International Education (EAIE) is organising a seminar³. The European University Association (EUA) has developed a website, the "refugees welcome map", centralising information on policies developed by HEI in Europe. At higher education national level, national conferences of higher education institutions⁴ have taken position for an "adapted access of refugees to HEI" (SwissUniversities, 2015). HEI themselves, such as in France and Germany are widely publishing information on their websites regarding their brand new refugees access programs. Academics are individually and collectively taking position and developing local access policies (see for example resome.org).

Still, differences appear amongst countries. First, in the discourses held. Various rationales cohabit between and within countries that frame access policies – such as solidarity and social responsibility, job markets' needs and refugees' economic integration, social integration, or the training of elites that could later participate to the reconstruction of their country. Second, regarding the actors involved in the development of local access policies (HE administration, academic profession, student's associations, states institutions, associations, etc.) as well as the policies implemented and their targeted populations.

Existing research document the effect of specific access programs for refugees (e.g. Mestan, 2008, Hek, 2009), as well as the resources, barriers and aspirations of refugees in access (see for example Stevenson J., Willott J., 2007, Morrice, 2009, Gateley, 2015) or the role of homeland education on refugees' economic position (Hartog and Zorlu, 2009). But little is known about access policies in national contexts. As shown by Stevenson and Willott (2007), addressing refugees' access, and thus transforming it into a public issue, supposes the development of specific policies targeting the asylum seekers/refugees group.

¹ For example the "International conference on Higher Education in Emergencies", in Brussels, December 2014, organised by the Council of Europe, the British Council, the League of Arab States, the Institute of International Education and the Global Platform for Syrian Students; or the conference "Ensuring the Inclusion of the Right to Education in Emergencies in the post-2015 Development Agenda", hold in New York in September 2015).

² has organised a "conference for leaders of international education" entitled "Higher Education in emergency environments" in June 2015, attended by 70 countries representatives amongst which 130 university presidents and government ministers.

³ Conference on "integrating refugees into higher education: solutions for a generation on the run." Held in Amsterdam.

⁴ e.g. the French Conference of University presidents (CPU), along with the CROUS, French body in charge of coordinating university student social services; Swiss Universities, the conference of Swiss HEI rectors

This presentation aims at exploring the rationales and policies of refugees' and asylum seekers' - understood as meta categories nationally and administratively defined - access as a diverse public issue in different national settings. It does so by comparing three countries, France, Germany and Switzerland. The first two countries have a large number of HEI developing systematic asylum seekers/refugees access programs while the latter appears in the early 2015 characterised by HEI proceeding more on an individual, case-to-case basis than through specific admission policies.

Comparing the discourses and practices⁵ in these three countries allows documenting how the issue is tackled by different' actors with regard to the definition of a targeted population (age-group, country of origin⁶, prior degrees and professional experience, language skills) and the instruments developed (type of admission criteria, access programs and funding programs, administrative student status category used, etc).

It also serves to identify the contextual dimensions weighting on the development of access policies for refugees and how they articulate in configurations that facilitate or impinge on access policies. Through secondary analysis of data collected on the various actors' websites as well as a case study (interviews with local actors) of one HEI in its context, this research proposes to unveil and discuss these configurations. The website systematic analysis is a particularly appropriated mean to document the policies implemented by HEI. It features access policies, sometimes in a dozen of refugees' languages, and Internet has become an important source of information for refugees (Maitland, 2015).

The comparison shows, at a first level, that in 2015-2016, in response to an emergency situation, refugees' access policies challenge the administrative categorisation by the States of migrants and the social rights these categories comprehend, as well as the refugees prior education and thus education system and institutions: HEI's tend to prioritise educational characteristics over the administrative status of the individual in access policies, but the latter determine social rights such as access to funding for educational and training purposes.

At a second level, access policies are embedded in intertwined dimensions such as the country demography, immigration history and economy in which immigration laws are framed; but they also depends upon the role allocated to HE in society - Refugees' access being perceived as more legitimate in societies where HE is massified and thus accessible to a large share of population – and facilitated by the pre-existence of access policies and programs targeting international non-European students as a resource for national economy.

These preliminary results call for a societal approach confronting three sectors of the societal organisation, the immigration sector, the higher education (of both countries, of origin and current) and the labour market ones, which encounter in access policies, to understand what is at stake in the local organisation of asylum seekers and refugees access to higher education. This advocates for research that analyses access to higher education in the broader frame of social policies.

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⁶ For example, the country of origin is a strong determinant of access, depending on the characteristics of its education system: "Refugees from Syria, Iraq, and the Kurdish areas are perceived to be better educated and therefore, potentially easier to integrate into society and the labor market in the receiving countries." (De Wit H., Altbach P., 2016).

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Challenges in Social Media Analytics

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Analysing Social Media bears the potential to obtain insights on the public perception of issues of global interest, such as the perception and implications of migration. We see today a large number of commercial tools providing basic, statistical analytics capabilities for Social Media and a plethora of research papers reporting results from applying advanced data mining and machine learning techniques to Social Media data sources.

We have been working on the use of Social Media analytics in various global issues such as climate change and nutrition. From the experience gained in this work we could identify key challenges that we summarize in the following:

1. *Commercial tools* generate only limited insights due to lack of use of advanced data analytics methods. Standard commercial tools apply basic statistical operations to social media data sources, as generally known in business analytics. They do not employ advanced data mining, machine learning or text analytics methods and as a result do not reveal latent structures in the data. For example, to perform influencer analysis the use of social network mining methods is essential in order to identify topic-specific influencers and their surrounding communities.

2. *Research approaches* lack methods and platforms to perform social media analytic processes in a repeatable and work-efficient fashion. Most work reported in today's research literature are one-time analysis, starting from a specific research question and then performing the analytics process in an ad-hoc approach. The different steps of data harvesting and denoising, the application of advanced analytics methods and the visualization of the results are executed and integrated as manual operations or using simple scripting solutions and as such not efficiently automated.

3. Social Media Analytics has to integrate *expert knowledge*. The analysis of Social Media needs to be driven by background knowledge of experts in order to formulate the right questions, to select the relevant terminology, choose relevant data and analytics methods, define the analysis dimensions and select the important insights. The critical problem is of how to imply the expert in an efficient manner into the analysis process in order to obtain a maximum of knowledge with a minimum expert effort.

4. The coverage of the same topic can vary largely in *different sources of media*. We could show that the same issues, e.g., climate change or crisis situations, are quite differently covered in different types of media. As an example, we could see that Social Media has a stronger bias towards personal experiences and stories, whereas news media pay more attention to official information sources. Blogs have been identified to carry more relevant information when it comes to health issues than the mainstream Social Media such as Twitter. Thus for each analysis those biases should be considered in the choice of data sources and interpretation of results.

5. Social Media is severely *noisy and information-scarce* for more specialized domains. Social Media is perceived as providing vast amounts of information on any type of subject. While this is partially true for mainstream topics, such as global issues or politics, for more specialized domains, e.g. less popular geographic regions or languages or on more narrow topics, the density of available information rapidly decreases and becomes increasingly difficult to separate from noise and mainstream topics. This calls for sophisticated filtering mechanisms exploiting both human input and automated analysis techniques.

6. Most of the existing tools and platforms focus on English and a few other *popular languages*. Advanced text processing and analytics techniques are rarely available for a wide range of languages within a common framework. For topics of global interest, multi-lingual analysis is however essential to obtain an unbiased (or less biased) view of the public perception. For obtaining insights at more regional levels the corresponding languages need to be mastered by the analysis tools.

In our work we have developed a Social Media analytics platform that addresses the above mentioned challenges. It allows to seamlessly integrate the different steps of a Social Media Analytics process - harvesting, structuring, analysing and visualizing. In order to enable experts to infuse their contextual knowledge, we pursue an ontology-driven approach. Expert input is captured as an ontology and the ontology is used throughout the analysis process as a backbone for information structuring. We integrate in the platform many types of advanced analytics methods, including automated ontology extraction, based on text analytics, topic and social network clustering, and issue and event detection. The automated extraction of hidden structures helps both to identify and structure the relevant data and to bulk filter noisy data. We support and exploit in the analysis not only Social Media contents, but also the referenced Web and any other form of related document sources, like news outlets or open data resources. Finally, we support text analytics for a growing range of languages.

The platform has been successfully employed for analysing questions related to global issues such as climate change, nutrition, health and humanitarian action, as well as for commercial aims such as marketing and reputation management.

In the context of migration we see the potential for investigating a number of relevant questions of interest to the community of this workshop, such as:

1. The public perception of the migration issue from a political perspective, in particular in countries strongly affected by migration
2. The communication among migrants on issues of daily live, their perspectives and their perceived opportunities.
3. The role of digitization in a globalized world with an increasingly mobile workforce

Scientific *e*-diaspora networks: online mobilization, transnational agency and globalization of domestic policies in the Romanian case

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Based on a *netnographic* study of diasporic dynamics related to a website (www.ad-astra.ro) and associated networks of Romanian scholars abroad, this paper analyses the process of a scientific *e-diaspora* emergence and the mechanisms that led to its recognition as a transnational actor within the Romanian civil society. Besides, it studies the impact of the *Ad-astra e-diaspora* network on the education and research reform process in Romania, the credibility and legitimacy of this de-territorialized network within Romanian institutions and authorities, as well as its contribution to transnationally enable local change.

As a result, we argue that ICTs generate new transnational public spheres in which migrant and not-migrant populations mobilize on the subject of common public issues in new spaces of collective action. In this process, knowledge transfer and collective expertise are carried out through overlapping online and offline practices, as well as transnational and local agency. Moreover, *e-diaspora* networks such as *Ad-Astra*, by connecting skilled emigrants with their peers, the civil society and political actors back home, become vectors of globalization of domestic policies. On the one hand, they challenge retention and return schemes, long time conceived by the origin countries as valuable strategies to reverse brain drain phenomena; on the other hand, they constitute an alternative to such strategies, collective expertise created through *e-diaspora* networks representing a solution to efficiently capitalize the resources incorporated by eminent scholars abroad.

Enhancing diaspora engagement: Lessons from the CIDESAL project

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Note: The European Commission funded the CIDESAL project. Its mission was to identify and mobilise Latin-American knowledge diasporas through innovative levers. Using the web, CIDESAL reached to create sophisticated methods of identifications of diasporans, and gained a better understanding of diaspora engagements spaces and mechanisms. The CIDESAL project focused in highly skilled Latin-American migrants from a selection of countries (mainly Argentina, Colombia and Uruguay). However the outcomes were made available to other Latin-American countries.

Diasporas engage in different fields of interest from remittances, philanthropy, knowledge transfer, business creation and investments etc. Enhancing diasporas' contributions must take into account this diversity. In this workshop I will present the research methods used to identify the diaspora in the CIDESAL project. I will also discuss diaspora engagement policies design and suggest these should be built according to its interests, its needs, its situation and sensibilities.

Knowledge networks have become a target of development policies. In response to pessimistic views towards skilled emigration and more specifically the « brain drain », knowledge transfers through diasporas have been considered as a solution in scientific development policies. This is how the CIDESAL project was framed: getting back the talent through diaspora engagement policies.

In this workshop I will briefly present the way diasporas were identified and discuss diaspora engagement policies through its actors, flows, networks and nodes.

My work in the CIDESAL project of diaspora incubators demonstrated how the diaspora had become a space in conflict. Indeed my fieldwork in the diasporic space of Latin-American migrants in Europe, revealed tensions between highly skilled migrants' associations and institutional infrastructures. Therefore, I will describe the way transnational actors are competing in the diasporic space and will show how institutional-led digital spaces enter in conflict with grassroots initiatives through the analysis of Andean diaspora knowledge networks.

Challenges for connecting Colombian schools with water scientists around the world

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Scientific mobility is a social reality in the contemporary a globalized world. The emergence and development of new information technologies have transformed the scientific diasporas into potential promoters of international cooperation and knowledge and resource transfer between countries of origin and host countries [1, 2]. In this paper, we will expose the technological challenges encountered by a diaspora-driven cooperation project in which children from Colombian schools will interact through digital media with Colombian water scientists based all around the world.

Colombian scientific diaspora has been a pioneer in the creation of mechanisms allowing researchers to actively participate in the progress of education, science and technology in Colombia. The project "Red Caldas" (1991 - 2006) remains a reference in the creation of networks of scientific diasporas, both for its initial success and subsequent failure [2, 3]. Despite the extensive participation of scientists working in different countries and the birth of new collaborations among academic institutions, the lack of supporting tools and technical experience for data sharing and effective communication between distant partners were some of the reasons that triggered the end of this network. Additionally, Red Caldas was founded when Internet and personal computers were starting to reach their first early adopters, social media and cloud computing services did not exist yet, and the development and maintenance of novel software solutions required considerable financial support and advanced technical expertise [4].

More recently, in 2015, ACIS (the Colombian Association of Researchers in Switzerland) was the cradle of two complementary initiatives that mobilize the Colombian scientific diaspora for cooperation and knowledge transfer between Colombia and Switzerland: iNVESTIGA and SieNi. iNVESTIGA¹ aims to connect scientists of the Colombian diaspora with Colombian secondary schools in order to promote exchange about the importance of science in the society through interactive experiences between students, school teachers and researchers using existing software services for distance communication. SieNi² works towards educating children and their communities to protect water while guiding public policy decisions regarding water issues in Colombia. iNVESTIGA provides SieNi with the technological guidance, experience and support to connect Colombian water scientists from around the world with the children who participate in the project, and who act as mentors in the process.

SieNi's pilot project is due to start in January 2017. Organized in water teams (10-20 children) led by their school teacher, the children will diagnose water issues in their local water basin, develop and implement an action-research project. The mentor scientist who is an expert in water issues will meet with the teams once a month via digital media. The results of the

¹ Website: <http://investiga.co>

² Website: <http://sieni.co>

children's research will contribute to regional water observatories, whose aim is to guide public policies. The project responds to the need, identified by the Colombian scientific community, of an accurate diagnostic of the current water condition at a local level in order to take pertinent political action [5]. Through technological means, Colombian scientific diaspora will thus be directly involved in contributing to the advancement of scientific knowledge, to Colombian children's scientific education, and to the formulation of public policy on water protection. Nevertheless, connecting the scientists and the children through digital media in this context involves a certain number of technological challenges.

The first set of challenges concern synchronous communication between the water scientists and the children. Current improvements in telecommunications, as well as the accessibility to this technology at a lower cost, allowed iNVESTIGA to organize and support, up to now, six interactive sessions between Colombian scientists around the world and secondary schools in Colombia [6]. Several conclusions were drawn out on the technical and communication aspects: 1) supporting both the scientists and the schools throughout the complete process allow both actors to focus entirely in the social interaction and exchange; 2) training sessions, guidelines and tutorials are necessary for relieving technical difficulties and to enhance face-to-face communication during the videoconference; 3) involvement of school teachers and directors during the process was a motivation to improve locally their infrastructure and Internet connectivity in the school; and 4) platforms based on cloud-computing services are a good alternative for both the public schools and the scientific diaspora who usually lack of full-time technological and financial support. With respect to the last point, choosing a communication platform usually depends on a tradeoff between technology costs, extended functionalities available, integration with third-party tools, and user experience. iNVESTIGA uses Google Hangouts after rating the previous considerations on a set of similar tools. Despite its multiple advantages, such as free access to a full stack of web-based extended functionalities for videoconferencing, easy installation and use, tools to moderate multiuser communication, possibility to record the sessions, the face-to-face communication experience could be sensitive to technical limitations, e.g. the inability to share information in full screen while watching the distant audience at the same time. Training for all users is thus very important to surpass these limitations.

Additional to the synchronous communication tools, scientists and water teams require asynchronous supporting tools that help them to share information without any geographical or temporal restriction. Nowadays, social networking platforms integrate the best of previous solutions such as mailing lists, forums, wikis and blogs, and they have reduced the learning curve, maintenance and support costs. Moreover, niche social networks such as LinkedIn, ResearchGate, and Edmodo merge valuable tools for specific communities into cloud-oriented platforms that are becoming the foundations for innovative projects gathering people together around the same objectives. For instance, Edmodo, a platform originally designed to connect school teachers, students and parents for the follow-up of activities in the school, has been used in Venezuela to connect scientists in Hispanic countries, providing them with means to share their research publications, as well as a medium to start discussions and promote collaborations [7]. Using these tools jointly with other freemium services such as Google Drive, Office365, Dropbox and Trello, relieve the project management burden, especially when integration capabilities have been implemented between platforms.

On the basis of this analysis, technology available today provides the required supporting tools to ensure the communication of water teams and scientists during the implementation of SieNi, under some considerations. In order to avoid problems encountered in the 90s with previous initiatives, training and follow-up of all users is essential along SieNi's implementation phase. This process will be directed according to the experience gathered by iNVESTIGA. SieNi's pilot project will take advantage of existing technology, thus the selection of the technological platforms must give high importance to usability and interactivity trying to avoid most of the

technical and usability difficulties. Technology must be transparent and fluid for end-users allowing them to concentrate on their exchange and their research projects. This pilot project will be an opportunity to explore the pros and cons of current asynchronous and synchronous communication tools and will bring important conclusions for the design and development of a custom platform that integrates the communication aspects as part of SieNi's processes for supporting a nation-wide project connecting scientific diasporas with schools.

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