



## Big Data for Migration Alliance (BD4M)

### Harnessing the potential of new data sources and innovative methodologies for migration

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#### *Joint Concept Note*

IOM's Global Migration Data Analysis Centre (GMDAC)  
and  
the European Commission's Knowledge Centre on Migration and Demography (KCMD)

#### I. Project rationale

It is often argued that there is a paucity of data on migration. While this is broadly true, there is in fact an abundance of data being produced which could inform migration policy but which has yet to be fully utilized. Vast amounts of data are generated through the use of mobile phones, internet-based platforms and other digital devices in real time, at very little cost. These “digital crumbs” can offer important insights into societal phenomena, including migration, as shown by an increasing number of studies and initiatives.

For instance, some studies<sup>1</sup> suggest that Facebook could potentially be used as a “real-time census,” as data obtained from the Facebook advertising platform, at little or no cost, can provide information on the number of “expats” (defined by Facebook as users stating to be living in a country other than their self-reported “home country”) in a specific country or globally at a certain point in time. Based on such data, there would be approximately 273 million “expats” around the world who are monthly active users of Facebook – a figure that is remarkably close to the 2017 estimate of international migrants globally provided by the UN Department of Economic and Social Affairs, equalling 258 million.<sup>2</sup>

Still, the vast potential of new sources of data on migration remains largely untapped due to a number of challenges, ranging from access and analytical difficulties to privacy and security risks. This project aims to address a number of them, in particular:

- **Data access:** Big Data are largely collected by the private sector, so issues of ownership, technological sustainability and costs may create obstacles to harnessing the potential of such data for public policy. New forms of public-private partnerships are necessary to enable this.

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<sup>1</sup> See <https://onlinelibrary.wiley.com/doi/abs/10.1111/padr.12102>.

<sup>2</sup> See [https://publications.iom.int/system/files/pdf/issue\\_5\\_big\\_data\\_and\\_migration.pdf](https://publications.iom.int/system/files/pdf/issue_5_big_data_and_migration.pdf).

- **Confidentiality, security and ethical concerns:** since most of these data are generated automatically by users of mobile devices and internet services, risks of breaches of individual privacy, security, and unethical use of data require the creation of adequate regulatory and legislative frameworks. Fostering a dialogue between regulators, data producers and data users should be the starting point to tackle this challenge.
- **Limited awareness and fragmented information on Big Data:** while a growing number of Big Data applications exist, including in the field of migration, these are scattered across sectors and localities, and no systematic information is offered in this area. There is a clear need to bring existing practices together to identify what works best for specific policy purposes.
- **Methodological difficulties,** including sampling bias (users of digital devices and platforms are not necessarily representative of the population at large), difficulties in making sense of complex amounts of data, and the need for advanced analytical capacities to process and filter the data. Addressing these issues is essential to unlock the potential to generate insights that cannot be gained via traditional methods.

Further, despite the numerous initiatives on big data for sustainable development, at the international and national levels, no dedicated network of different stakeholders currently exists to investigate the potential of new data sources for the analysis of migration-related aspects.

## II. Proposed response

In November 2017, the European Commission's Knowledge Centre on Migration and Demography (KCMD) and IOM's Global Migration Data Analysis Centre (GMDAC) co-organized the expert workshop *Big Data and alternative data sources on migration: from case-studies to policy support* in Ispra (Italy). The workshop gathered academics and experts, policymakers and representatives from the private sector to discuss the state-of-the-art in data innovations in the field of migration, and identify practical steps to overcome obstacles towards more widespread use of big data for migration analysis and policymaking. It emerged from the workshop that big effort is particularly needed in the following areas:

- a) The establishment of an **adequate regulatory and legislative framework** for the collection, analysis, and sharing of big data; an **international dialogue** between regulators, big data users and providers should be the starting point.
- b) The **upgrading of infrastructure and security systems** at the **national level**.
- c) The creation of incentives towards the **development of** cooperative arrangements between public and private bodies for data exchange and collaborations.
- d) **More research** on ways to capitalize on innovative data sources in the field of migration, and systematic ways to take stock of existing applications and collate existing knowledge.

As a way to facilitate these investments, the EC's KCMD and IOM's GMDAC propose to create a **Big Data for Migration Alliance (BD4M)**. By promoting collaborations across sectors and active dialogue with

policymakers, the Alliance aims to harness the potential of big data sources for migration analysis and policymaking, while addressing issues of confidentiality, security and ethical use of data. As conveners of BD4M, the EC's KCMD and IOM's GMDAC would welcome the participation of representatives from international organizations and non-governmental organizations, members of national statistical offices, private sector representatives, researchers and data scientists interested in contributing, in various capacities, to realizing the potential of data innovation in the field of migration.

The BD4M would be global in scope, and would aim to make progress in the field of big data and migration through **3 main areas of work**:

- a) **Awareness-raising and knowledge-sharing**: this would involve taking stock of existing and new applications of big data in the field of migration, and promoting the sharing of knowledge, including through dedicated publications and conferences.

*Activities:*

- Mapping of existing big data and migration initiatives at the national and international levels and creation of a regularly-updated repository of big data and migration projects, to identify good practices and possible synergies.
- Creation of a dedicated website to promote the sharing of knowledge in this area.
- Production of bulletins about the activities of the BD4M, with contributions from its members.
- Organization of yearly workshops, particularly across the Global South, to raise awareness about the BD4M and solicit participation in the Alliance.
- Creation of a network of "data stewards"<sup>3</sup> across private and public institutions, to facilitate exchanges of good practices and identify collaboration opportunities.
- Creation of a BD4M Advisory Board to help guide the work of the Alliance.

- b) **Capacity-building**: this would entail providing support to countries interested in identifying ways to make use of big data sources to understand migration, including through specific training modules as well as need-based technical assistance and guidance, in collaboration with relevant partners and agencies.

*Activities*

- Conducting a feasibility study in a selected number of countries to identify main migration data gaps, policy needs and big data sources that could be used to fill those gaps – in collaboration with relevant partner agencies.
- Preparing a guide and training materials on using big data for migration targeted at National Statistical Offices.
- Organizing training workshops for Government representatives and NSOs across various regions on the Big Data for Migration Alliance.

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<sup>3</sup> See <http://thegovlab.org/data-stewards-data-leadership-to-address-the-challenges-of-the-21st-century-2/>.

- Organizing ‘study visits’ of members of NSOs interested in data innovation in the field of migration to countries that are already exploring big data sources in this area.
- c) **Policy-oriented analysis:** the Alliance would encourage research projects aimed at testing new applications of big data in the field of migration, as well as addressing the technical, methodological and ethical challenges associated with uses of big data and other innovative sources.

#### *Activities*

- Exploring existing frameworks (EU, global) to sponsor applied research/policy-oriented research programmes, including by issuing ‘data challenges’ and developing joint cross-national research proposals.
- Creating a working paper series about how big data can contribute to policy, particularly in relation to the SDGs and the Global Compact for Safe, Orderly and Regular Migration, with contributions from experts.
- Organizing a meeting to develop a research agenda for the Alliance.

### III. IOM and KCMD Capacity to Address the Issues Identified

The Knowledge Centre on Migration and Demography (KCMD) is a European Commission initiative that provides analysis and manages knowledge to support the work of Commission services and Member States on migration and related issues. One of the main challenges that the KCMD is tackling in support of EU policy-makers engaged in addressing migration is to capitalise on the wealth of existing but fragmented and not always easily accessible knowledge at all levels – local, national, European and global. Another equally important challenge is to better anticipate migration and population trends, and understand their impact on health, welfare, education and the economy. Data gaps are regularly discussed in dialogue with European Commission policy DGs, services and EU Agencies involved in migration issues. To this end, the KCMD has been exploring the landscape of data innovation for migration by issuing a first [Data Challenge on Integration of Migrants in Cities](#) (D4I) to stimulate research on various aspects of the integration of migrants at local level using EU Member States data. The KCMD has hands-on experience with data mining and big data for migration using air passenger data, social media and mobile phones data in order to explore the potential and identify promising services in support of evidence to inform migration policy.

IOM has been considering the potential of new data sources and innovative data methodologies to improve understanding of migration-related phenomena for a few years now. It was the first organization to comprehensively explore the potential of big data in the study of different aspects of human mobility and migration, reviewing the existing literature and publishing several pieces on the topic. Particularly since the establishment of IOM’s Global Migration Data Analysis Centre in Berlin in September 2015, IOM has built a network of contacts across various sectors, in the business, scientific and policymaking communities, which culminated in a successful [expert workshop held in Ispra \(Italy\) in November 2017, co-organized by IOM’s GMDAC and KCMD](#). IOM also has a wide network of field offices

and close relationships with governments and national statistical offices, which would facilitate the promotion of the BD4M across various regions and participation from national governments. Further, IOM's GMDAC regularly provides supports to IOM's Member States willing to enhance their migration data collection, analysis and management systems – especially across the Global South – through IOM's field missions. IOM has experience with the preparation of training materials on migration data, and the facilitation of workshops for government representatives at the national and regional level. IOM is also the first international organization to have adopted data protection guidelines for the protection of data in the context of migration, and will soon join the UN Global Working Group on Big Data for Official Statistics.

IOM and KCMD are therefore well placed to co-convene and steer work of the BD4M, given the respective knowledge of the issue, technical expertise, access to beneficiaries and other stakeholders, as well as logistical capacities.

#### **IV. Partners**

IOM's GMDAC and KCDM would jointly convene the BD4M, as announced following the expert workshop on Big Data and alternative data sources in Ispra in November 2017. The BD4M Advisory Board would be established to provide expert advice on the various strands areas of work of the Alliance, and would rely on partners from the scientific, policy and business communities. As the BD4M aims to build partnerships across sectors and disciplines, relevant partners will be identified for specific activities under the various areas as the work progresses.