UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Defining and Measuring Circular Migration

Prepared by
the Task Force on Measuring Circular Migration

United Nations
New York and Geneva, 2016

NOTE

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontier or boundaries.

Acknowledgments

Preface

Circular migration is a topic of growing importance, for which information is needed for policy development at both the European and global level. However, the scale of circular migration is difficult to estimate. As comparisons between different countries and their policies regarding circular migration are becoming more relevant for policy development and evaluation purposes, there is a need to establish an international definition of what circular migration is and how it can be measured and compared between different reporting countries.

Recognizing these needs, in February 2013 the Bureau of the Conference of European Statisticians (CES) created a Task Force on Measuring Circular Migration with an objective of preparing a proposal for a common international statistical definition of circular migration and further clarifying the concepts of measuring circular migration. This publication presents the results of the work of the Task Force, including a proposal for a common international statistical definition of circular migration.

A consultation on the draft report with all members of CES was conducted in February-March 2016. In April 2016, the CES plenary session reviewed the results and requested the Task Force to reflect the comments from the consultation in the publication. In October 2016, the CES Bureau endorsed the present publication.

UNECE is grateful to all experts who were involved in the preparation of this publication.

Contents

List of Tables

List of Figures

1.   Introduction

1.   Circular migration is a topic of growing importance, on which information is needed for policy development. The Global Forum on Migration and Development (GFMD)[1] sees the promotion of circular migration as one of the key ways to increase the contribution of international migration to development. It has also become a priority for many countries of origin as a way of ensuring the temporary nature of their citizens' emigration.

2.   Circular migration is often seen as a win-win-win proposition, providing gains to countries of both origin and destination, as well as to the migrants themselves. In countries of destination, it can alleviate labour needs and increase economic production. In countries of origin, it can provide unemployment relief and both financial and human capital (in terms of skills and resources brought back to the country), as well as counteract population loss due to emigration. Individual migrants also often benefit via increased income, greater work experience, and the development of their human capital. However, circular migration may also be associated with high social costs and with difficulties to integrate in the labour market or to find adequate training.

3.   Given the increased topicality of circular migration, there is a growing need to establish tools to measure the extent to which existing international migration patterns become more (or less) circular over time and to evaluate policies aiming at facilitating (or restricting) such migration. Comparisons between different countries and their policies regarding circular migration, both countries of destination and of origin, are also becoming more relevant for policy development and evaluation purposes. There is therefore a need to establish an international definition of what circular migration is and how it can be measured and compared between different reporting countries.

4.   The European Migration Network (EMN) synthesis report "Temporary and circular migration: empirical evidence, current policy practice and future option in EU Member States" (2011) expounds the benefit of developing a common understanding of temporary and circular migration, as a first step towards a common definition for the purpose of data collection. The report details the lack of comparable statistics and a common statistical definition on temporary and circular migration across the European Union and the inadequacy of current data collection methods for capturing these forms of migration. In particular, it notes the general lack of longitudinal data that would allow individual migration patterns to be tracked over time.

5.   An important challenge in measuring circular migration is that it is frequently related to short-term residence that may be subject to little or no administrative recording, particularly if a residence permit has already been granted in the context of a previous stay or if a migrant is a citizen of the countries he or she migrates to/from (double or multiple citizenship). Another considerable challenge related to defining and measuring circular migration is that by its very nature, circular migration is not a single event taking place at a particular point of time, but rather a series of several events happening within a specific period. National statistics on temporary and short-term moves remain largely incompatible due to different definitions of duration of stay (UNECE, 2012). There is also considerable variation among definitions of circular migration. To produce comparable statistical information and to analyse the developmental impact of circular migration, countries need to have a common definition.

---

[1] The Global Forum on Migration and Development (GFMD) was founded in 2007 as an initiative of the United Nations Member States to address connections between migration and development. It has acted as an informal, non-binding, voluntary and government-led process, acknowledging the limits of a strictly national approach to migration issues. Civil society representatives as well as governments have been involved in the GFMD process. For more information, see www.gfmd.org.

6.   Operationalization of this concept would include duration of stay in destination country and frequency of movements at a minimum. For producing quality statistics on circular migration, the definition, reference period, standards and sources for its measurement need to be established. There is thus a strong need to develop better standards and definitions related to circular migration, and position it clearly with respect to the related concepts of short-term, temporary and return migration.

7.   In 2012, the Bureau of the Conference of European Statisticians (CES)[2] reviewed the final report of its Task Force on the Analysis of International Migration Estimates Using Different Length of Stay Definitions (UNECE, 2012), which recommended, among others, to prepare a proposal for a common international statistical definition of circular migration. The Bureau welcomed the report and conducted a further review of statistical concepts of short-term, return and circular migration (UNECE, 2013). Based on this, the CES Bureau set up a new Task Force on Measuring Circular Migration in February 2013, to prepare a proposal for a common international statistical definition of circular migration. This publication presents the results of the Task Force.

8.   Chapter 2 provides the key definitions of international migration statistics and looks at how circular migration has been framed and defined in different contexts. In the context of scarce statistical data on circular migration, the chapter provides an example of operationalizing the concept of circular migration in Sweden. Chapter 3 examines the following five dimensions of circular migration: repetition of move (frequency), directionality, duration, purpose or reason for move, and developmental impact. Chapter 4 proceeds to lay out the key issues and present proposals for a statistical definition of circular migration. Practical application of the proposed definitions is shown in chapter 5 with testing examples from Italy and Sweden, followed by conclusions.

---

[2] The Conference of European Statisticians is composed of national statistical organizations in the UNECE region (for UNECE member countries, see http://www.unece.org/oes/nutshell/member_states_representatives.html) and includes in addition Australia, Brazil, Chile, China, Colombia, Japan, Mexico, Mongolia, New Zealand and Republic of Korea. The major international organizations active in statistics in the UNECE region also participate in the work, such as the statistical office of the European Commission (Eurostat), the Organization for Economic Cooperation and Development (OECD), the Interstate Statistical Committee of the Commonwealth of the Independent States (CIS-STAT), the International Monetary Fund (IMF) and the World Bank.

2. Existing Concepts and Definitions

2.1. Different types of migration

9.   The terms **temporary migration** and **circular migration** are not defined by the United Nations Recommendations on Statistics of International Migration (1998), but they provide the following definitions of long-term, short-term and return migrants:

> **Long-term migrant** is *"a person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence. From the perspective of the country of departure the person will be a long-term emigrant and from that of the country of arrival the person will be a long-term immigrant."*

> **Short-term migrant** is defined as *"a person who moves to a country other than that of his or her usual residence for a period of at least 3 months, but less than a year (12 months) except in cases where the movement to that country is for purposes of recreation, holiday, visits to friends or relatives, business, medical treatment or religious pilgrimage."*

> **Return migrants** are *"persons returning to their country of citizenship after having been international migrants (whether short-term or long-term) in another country and who are intending to stay in their own country for at least one year"*.

10.   Another definition posited by OECD (2008) for return migration is one where the migrant's country of destination is the same as their original country of origin. This differs in its focus on using country of birth as opposed to country of citizenship as a criterion of defining return migrants.

11.   EMN (2011) defines **circular migration** as *"a repetition of legal migrations by the same person between two or more countries"*. According to GFMD (2008), circular migration can be understood as "*the temporary, recurrent movement of people between two or more countries mainly for purposes of work or study"*. GFMD sees circular migration as different from concepts like permanent or temporary migration since these concepts are understood in a more linear and static way.

12.   According to EMN, temporary migration is limited to a single back-and-forth movement, with a limited stay in the country of destination (or in their case the EU), while circular migration is repeated back-and-forth movement between the destination and countries of origin. Circular migration is viewed as a type of temporary migration, in which the temporary stay in a destination country is repeated. Circular migration overlaps also with the concept of return migration, as return is part of the circular movement.

2.2. Definitions and conceptualizations of circular migration in selected literature

2.2.1. Typologies and dimensions

13.   Agunias and Newland (2007) put forward a typology of circular migration, which can serve as an example for a rather broad and all-encompassing approach to the phenomenon. The authors distinguish between permanent and temporary migration as well as between temporary and permanent return. According to this matrix, four broad types of circular migration can be identified:

> a. Permanent migration and permanent return: Migrants who spend a lengthy period abroad and then return to stay in their country of origin.

      b. Permanent migration and temporary return: Migrants who have emigrated for good but who return for temporary stays.

      c. Temporary migration and permanent return: Migrants who only stay abroad for a short period and then return for good.

      d. Temporary migration and temporary return: Migrants who regularly shuttle between two or more countries.

14. According to this typology, all migration movements that include at least two cross-border moves could be categorized as circular migration – a rather inclusive and broad conceptualization.

15. A more narrow and precise definition is proposed by Fargues (2008), according to whom migration that meets the following six criteria can be characterized as circular:

      a. temporary residence (time-limited permit),
      b. renewal option (possibility of multiple entries into the destination country),
      c. circularity (freedom of movement between country of origin and destination during the period of residence),
      d. legality of stay,
      e. protection of migrants' rights, and
      f. satisfaction of a (temporary) demand for labour in the destination country as a central purpose.

16. Fargues' definition is thus much more restrictive than the one proposed by Agunias and Newland. By emphasizing, for example, the protection of migrants' rights, it also contains normative elements in addition to more "neutral", descriptive elements, such as temporariness.

17. The METOIKOS study[3] examined the links between different types of circular migration in addition to the processes of integration in the country of destination and reintegration in the source country. As part of this study, Triandafyllidou (2010) proposed four dimensions for circular migration: space, time, repetition and scope. The space dimension pertains to the crossing of a border, while in terms of time, circular migration involves stays of limited duration that can vary from several weeks to several years but does not apply to stays of a decade or more. With regard to repetition, the author specifies at least two-time back-and-forth movement between a country of origin and a country of destination as a minimum requirement for circular migration. The scope of circular migration does not refer exclusively to dependent employment but primarily to economic activities such as employment, trade or investment.

2.2.2. *Spontaneous and managed migration*

18. A general distinction is sometimes made between circular migration as a migratory phenomenon occurring within organized and controlled regulatory frameworks (such as bilateral agreements on labour migration between specific countries), and between more "spontaneous", "naturally occurring" and uncontrolled cross-border moves.

19. EMN (2011) looked at the empirical evidence, current policy practice and future options in 24 European Union member States regarding temporary and circular migration. It found that there is a regulated type of circular migration taking place, for example, in the form of migrants entering an EU Member State for temporary, seasonal work, and a more "spontaneous" type of circular migration. "Spontaneous circular migration" refers to people who decide themselves whether or not to migrate to a different country, about the length of their stay, and whether or not, and when, to return to their country of origin, and eventually migrate again. Such circular migration thus takes

---

[3] In 2010-2011, the METOIKOS Research Project at the Robert Schuman Centre for Advanced Studies of the European University Institute in Florence looked into circular migration patterns in three European regions: South-eastern Europe and the Balkans, South-western Europe and the Maghreb, and Central Eastern Europe.

place outside organized frameworks, such as seasonal workers schemes or other temporary migration under bilateral agreements between states.

20.   Newland (2009) uses the term "de facto circular migration", thus distinguishing between spontaneous circular migration and circular migration that occurs within the parameters of official programs.

2.2.3.   National definitions

21.   According to EMN (2011), the EU Member States do not differentiate between the concepts of temporary and circular migration. Countries also approach these phenomena very differently.

22.   The EMN study found that, while most countries could provide some form of data on temporary migration, for circular migration, the situation was much bleaker. Only a handful of countries (Australia, Austria, Germany and Sweden) could provide some statistical evidence on circular migration, though each country measured this concept differently. The study could not find any harmonized approach across the EU member states in defining circular migration.

23.   EMN listed some of the definitions used by selected EU Member States. The Netherlands, for example, described circular migration as "*migration in which the migrant resides in one country after another, including his/her own country for a longer period*". Germany proposed the following, more complex, definition:

> "*Circular migration [is defined as] multiple migration, in which a person enters the destination country at least once (or is born there), then moves to the country of origin, the country of nationality or a third country, and then returns to the destination country. The time-based dimension is also considered, although it is not possible to define an exact duration of stay. Short stays of just a few months are excluded, as such stays do not generally involve a change in […] principal residence. Neither should circular migration be used to describe movements of people who have resided in the country of destination for many years or even decades and who then (once and without returning) migrate back to their country of origin.*"

24.   Poland described circular migration as a "*migration intended to be temporary, of a repetitive and/or cyclical nature, but not necessarily seasonal, which is driven by economic factors, whilst retaining links to the country of origin*".

25.   Sweden, as another example, wrote that circular migration is regarded as "*temporary or more long-term and usually recurring legal movements between two countries*", and added:

> "*Movement can occur either through migrants moving from their countries of origin or residence to a country of destination and then returning, or through migrants moving to their countries of origin for a shorter or longer period.*"

26.   A problem of these national definitions is that circular migration is not always clearly separated from other types of migration, such as return migration. Only the German and the Polish definitions require more than two cross-border moves. Both the Dutch and the Swedish definitions remain vague about the minimum number of moves. The Netherlands and Portugal were the only countries with formal/legal definitions for circular migration, while only Spain and Sweden had working definitions for this concept.

27.   EMN (2011) also found that the few countries that were able to produce statistics on circular migration followed their own methodologies.

28.   Austria collected information on registrations and de-registrations from the Central Register of Residence, and used this to calculate temporary and circular migration on the basis of three cross-border moves.

29.   Germany analysed statistics from the Central Register of Foreign Nationals (AZR) for information on individual migrants' exits and re-entries. In Germany, at least 10.7% of all resident non-EU foreigners (third-country nationals) could be said to have effected 'circular' migration, as they had moved away from Germany at least once and subsequently returned. The share of resident third-country nationals who exhibit a circular migration pattern varies considerably between different nationality groups. Circular migration patterns seem to be most frequent among foreign nationals who migrate for employment purposes.

30.   The Netherlands identified individual migrants, using the unique citizen's service number (BSN) provided to them after residing in the Member State more than four months. Using the BSN, a migrant can be tracked through national and local authorities' databases; hence exits and re-entries can be monitored to provide information on circular migration.

31.   Sweden counted migrants who had been resident for at least 12 months. Their definition of circular migration also covers own nationals who are not included in the definitions of other member States. The Swedish statistical definition of 'circular migration' prescribes that one needs to have moved at least twice across the national border.

32.   The EMN country studies emphasized the difficulty differentiating temporary and circular migration, as all forms of circular migration start out as temporary, but can become more permanent over time. Some countries highlighted the need to agree first upon a standard definition of circular migration in order to improve data collection methods. The EMN definition is limited to legal migrants, as irregular migrants are not included in regular data sources.

33.   The EMN study also found that the development and promotion of policies on temporary and circular migration in the EU Member States were at a very early stage. While most Member States had accommodated elements of temporary or circular migration into their policies, legislation and practices, this was rarely with the explicit aim of promoting circularity. Nonetheless, reports of initial evaluations of existing programmes and policies had confirmed positive results for migrants.

Table 1
Definitions used in literature for circular migration

Author	Definition used for circular migration
W. Zelinsky (1971)	Circulation denotes a great variety of movements, usually short-term, repetitive or cyclical in nature, but all having in common the lack of any declared intention of a permanent or long-lasting change in residence.
J. A. Bustamante (2002), Instituto de Investigaciones Juridicas, UNAM	A process through which a migrant, legally or not, alternates his/her place of residence between origin or destination country, until eventually settling down in either of them due to age or family reunion." Based on the notion of a migrant's "migration career (history)" defined as a sequence of loops, complete or not.
K. O'Neil (2003), Migration Policy Institute	Migrants returning to their sending country, once or many times over a period of time.
Council of the European Union (2007)	Temporary, legal movement of people between one or more member states and particular third countries, whereby third country nationals take up legal employment opportunities in the EU or persons legally residing in the EU go to their country of origin.

Author	Definition used for circular migration
European Commission (2007)	The two main forms of circular migration most relevant in the EU context are: a. that of third‑country nationals residing in the EU, such as business people from third countries working in the EU and wishing to start an activity in their country of origin or in another third country; b. that of third‑country nationals established outside the EU, such as nationals wishing to engage in seasonal or temporary work within the EU or to study there before returning to their country.
A. Constant and K. F. Zimmermann (2007), The Institute for the Study of Labour (IZA)	Guest workers who have left Germany (at least once).
D.R. Agunias and K. Newland (2007), Migration Policy Institute	a. Permanent migration and (generations later) permanent return; b. permanent migration and temporary return; c. temporary migration and temporary return; d. temporary migration and permanent return. The term 'permanent migrants' refers to those who have permanent residency or citizenship in their adopted countries.
P. Fargues (2008), CARIM	Temporary, renewable, circulatory, legal, respectful of the migrants' rights, and managed in such a way as to optimize labour markets at both ends, in sending and receiving countries.
Global Forum on Migration and Development (2008), International Organization for Migration (2011)	The fluid movement of people between countries, including temporary or long-term movement which may be beneficial to all involved, if occurring voluntarily and linked to the labour needs of countries of origin and destination.
F. P. Vadean, and M. Piracha (2009), IZA	The repeated back and forth movements between the home country and one or more countries of destination.
Swedish Committee on Circular Migration and Development (Statens offentliga utredningar 2010/2011)	Back-and forth mobility, which can promote development in both countries of origin and destination, as well as benefit migrants themselves.
European Migration Network (EMN, 2011) / European Commission	A repetition of legal migration by the same person between two or more countries.
P. Wickramasekara (2011) and The Global Union Research Network (GURN) / ILO	Repeated migration experiences involving more than one emigration and return. It should be distinguished from 'one-shot' migration involving one emigration and permanent return, which is better termed as 'return migration'.
F. Constant, O. Nottmeyer and K. F. Zimmermann (2012), The Institute for the Study of Labour (IZA)	The systematic and regular movement of migrants between their homelands and foreign countries typically seeking work. Circular migration should be differentiated from the one-time emigration or out-migration and the eventual permanent return migration.
D. Posel and C. Marx (2013)	Having dual household membership.
J. Schneider and B. Parusel (2015)	A flexible form of repetitive movement between different destinations.

2.3. Circular migration in national and international policy discourse

2.3.1. Benefits and developmental impact of circular migration

34.   The Global Forum on Migration and Development (2008) describes circular migration as "*a fluid movement of people between countries, including temporary or more permanent movement which, when it occurs voluntarily and is linked to the labour needs of countries of origin and destination, can be beneficial to all involved*". This definition highlights the "triple-win" assumption and links circular migration to both voluntariness and the purpose of work. The same definition is also used by the International Organization for Migration (IOM) in its "Key migration terms" glossary.[4]

35.   The benefits of circular migration have been highlighted by others as well. According to the European Commission (2007), the advantages of circular migration lie above all in the transfer of skills between the countries in question and in the reduction of the permanent outflow of knowledge and skills from developing countries ("brain drain"). They state that *"Circular migration is increasingly being recognised as a key form of migration that, if well managed, can help to match the international supply of and demand for labour, thereby contributing to a more efficient allocation of available resources and to economic growth."* IOM and other members of the Global Migration Group state that, from a country of origin's perspective, circular migration "*can allow for the acquisition of new ideas, technologies or land-use practices that can then be replicated in the community of origin through the transfer of ideas, training and capacity building activities*" (GMG 2010).

36.   Newland (2009) explores the human development implications of circular migration – both where it occurs naturally and where governments work to create it. She discusses various concepts and definitions of circular migration, and concludes that circular migration is not intrinsically positive or negative in relation to human development; its impact depends upon the circumstances in which it occurs, the constraints that surround it and the degree of choice that individuals can exercise over their own mobility.

37.   IOM (2013) looks at the developmental impact from the point of view of labour mobility and cross-border skill-matching. The paper provides a brief overview of recent international and regional labour mobility and establishes the linkages between labour mobility and development in both origin and destination countries as well as at the regional and global levels. The paper also looks at policies to enhance the developmental impacts of labour mobility at all levels. IOM recognizes that protecting the rights of migrant workers is integral to realizing the potential of migration for development.

2.3.2. Promoting circular migration

38.   The Global Commission on International Migration[5] (GCIM, 2005) argued that governments and international organizations should formulate policies and programmes that maximize the developmental impact of return and circular migration. While it did not propose a clear definition of the concept of circular migration, GCIM wrote that "*the old paradigm of permanent migrant settlement is progressively giving way to temporary and circular migration*" and that the Commission

---

[4] http://www.iom.int/cms/en/sites/iom/home/about-migration/key-migration-terms-1.html and IOM (2011).
[5] The Global Commission on International Migration was set up in 2003 by the Secretary General of the United Nations and the governments of Sweden, Switzerland, Brazil, Morocco and the Philippines. The mandate of the Commission was to place international migration on the global policy agenda, analyse gaps in current policy approaches to migration, examine inter-linkages with other issue-areas, and present recommendations to the United Nations Secretary-General, governments and other stakeholders.

"*underlines the need to grasp the developmental opportunities that this important shift in migration patterns provides for countries of origin*".

39.   For the European Commission (2007), circular migration means multiple migrations between a country of origin and an admitting country, normally within the context of the temporary recruitment and employment of workers. They describe circular migration as *"a form of migration that is managed in a way allowing some degree of legal mobility back and forth between two countries."* They add that circular migration exists when people residing abroad receive an immigration and residence permit for a limited period for working, studying and/or training, if they relocate their main place of residence and their main sphere of activity back to their country of origin once their permit has expired.

40.   In the European Union, circular migration has been primarily understood as a migration phenomenon that should be promoted through the creation or expansion of a specific legal framework as well as via specific projects or programmes. The European Commission (2007) has proposed various ways to promote circular migration:

> *"(...) A distinction could be drawn between, on the one hand, putting in place the legislative framework that would facilitate circular migration and, on the other, the possibility of developing circular migration schemes. Such schemes would enable migrants to enter the EU to work, study or perform other activities for a set period of time".*

41.   The European Commission acknowledged, however, that there are different definitions and forms of circular migration and that the European Union must clearly stipulate which form of circular migration it intends to facilitate.

42.   Based on the statements issued by the Commission, the Justice and Home Affairs Council of the EU proposed on the following wording of a basic definition of circular migration (Council of the European Union, 2007):

> *"Circular migration could be understood as the temporary, legal movement of people between one or more member states and particular third countries, whereby third country nationals take up legal employment opportunities in the EU or persons legally residing in the EU go to their country of origin."*

43.   In 2014, the Council of the European Union and the European Parliament adopted a directive on seasonal employment (European Parliament/Council of the European Union, 2014). It provides for, among other things, a simplified and uniform procedure for the admission of seasonal workers from third countries, a maximum stay (which shall be fixed by the Member States to be not less than five months and not more than nine months in any 12-month period), the facilitation of re-entry, and regulations on the working conditions. While the preamble explicitly refers to circular migration (Recital 34), the (non-binding) provisions on facilitated re-entry of third-country nationals to the EU as seasonal workers are the only element that actually addresses circularity. Many seasonal workers may stay in EU Member States for rather short periods of time; they may thus be seen as engaging in cross-border and/or short-term mobility, not migration in the sense of a change of their usual place of residence.

44.   Wickramasekara (2011) looks at circular migration from the point of view of the rights of migrants. The paper examines the evolving forms of circular migration and their implications for a rights-based approach to labour migration and protection of the rights of migrant workers. It reviews the challenges posed by circular migration programmes and their variants, for the trade union movement and other stakeholders concerned with protecting the rights of migrant workers. This is expected to contribute to the on-going debates within the trade union movement and civil society, the International Labour Organization and beyond.

2.3.3. Case study: Sweden

45.   In July 2009, the Swedish Government decided to appoint a cross-party Parliamentary Committee to examine the connection between circular migration and development. The Committee's task was to map out circular migration, to identify factors that influence migrants' opportunities to move between Sweden and their countries of origin, and to propose measures to remove obstacles to mobility. It published an interim report in 2010 (Statens Offentliga Utredningar, 2010) and a final report in 2011 (Statens Offentliga Utredningar, 2011).

46.   The Committee defined circular migration loosely as a form of "*back-and forth mobility which can promote development in both countries of origin and destination, as well as benefit migrants themselves*." Apart from that, the Committee stated, "*there is no uniform definition of the concept of circular migration, and the Committee sees no reason to confine itself to a narrow definition*." Instead, it was of the view that the concept could include many different forms of migration. The Committee also stated that it is spontaneous circular migration – in contrast to the managed form that takes place within specific programmes and projects – which was the most relevant for Sweden, and the form that should be promoted: "*Spontaneous circular migration takes place when there is an enabling legislative framework which facilitates mobility*."

47.   Regarding operationalization and data sources, the Committee drew on an analysis carried out by Statistics Sweden. It claimed that, of Sweden's total population (9.3 million people), 283,400 persons, roughly 3 per cent, had moved at least twice across the national border and could thus be considered circular migrants in a statistical sense. Most of the circular migrants had moved two or three times, but a small group had moved across the border with greater frequency. The main source of data used was the Swedish population registry, which includes data on all persons who have a legal right to stay and intend to stay for at least 12 months. Among much other statistical information, data from the population registry includes the citizenship, country of birth, and the previous country of residence (before moving to Sweden) of all persons living in the country.

48.   As a main result of its work, the Committee identified in particular three groups of migrants that have the potential of influencing development in their countries of origin: labour migrants, international students and entrepreneurs. It proposed several measures to facilitate circular migration, such as an exemption to the rule that a permanent residence permit is to be revoked when residence ceases. It was also proposed to further increase possibilities of labour migrants, entrepreneurs and international students to come to Sweden. Other proposals concerned an improved portability of social security benefits between Sweden and third countries and involvement of diasporas in the development in countries of origin.

49.   In 2013, the Swedish Government proposed a bill to Parliament with the aim of facilitating international mobility and circular migration to and from Sweden. Migrant workers can now be granted a temporary work permit for a total of six years (previously four years). A permanent residence permit can be granted to a person who has been working in Sweden for at least four years in the past seven years (previously four years in the past five years). This makes it possible for migrants to have longer interruptions of residency. The bill entered into force in July 2014.

3.   Dimensions of Circular Migration

50.   Based on existing literature, as summarised above, and the international policy discourse on circular migration, the following five dimensions need to be considered when defining and measuring circular migration:

    a. Repetition of move (frequency)
    b. Directionality
    c. Time
    d. Purpose or reason for move
    e. Developmental impact

3.1.   Repetition of move (frequency)

51.   One of the major questions concerning circular migration in the context of repetition is how to distinguish circular migration from return migration and if this distinction even needs to be made. Circular migration is a form of return migration; however, return migration is not necessarily circular. To distinguish the two concepts, the concept of "circular" could be replaced with "pendulum", which illustrates the back and forth nature of circular migration. An additional consideration is whether or not an individual who has made only two moves (Country A → Country B → Country A), but who intends to move again, can be called a circular migrant. Here the concept of "loop" is defined to describe the movement of a migrant.

52.   A migration loop is defined as a sequence of crossings of international borders that begins and ends in the same country (figure 1). If the full migration history of a migrant is comprised by only one loop (e.g., A→B→A) that person is defined as a return migrant rather than a circular one. Therefore, more than one loop is necessary to qualify as a circular migrant. Moves not considered to be part of migration are excluded (e.g. tourism, cross-border workers, business travel).

Figure 1
Return migration and full migration loop
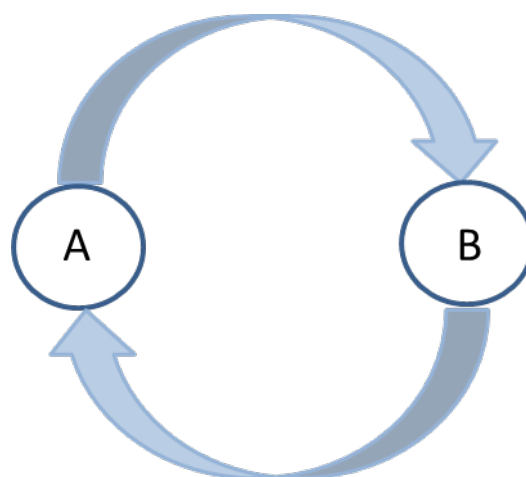
53.   Figure 2 illustrates a simple case of circular migration. Here the migrant has left country A twice and returned twice, creating the sequence A→B→A→B→A. This sequence consists of at least four moves and completes at least two "loops": at least two distinct moves away from and two distinct returns to a country of origin.

Figure 2
A simple depiction of circular migration
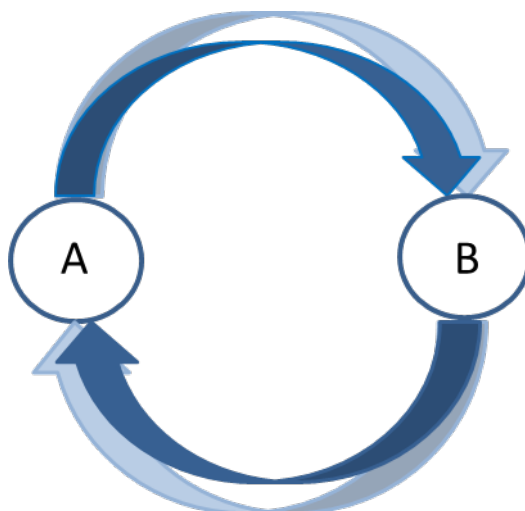
54.   Depending on the country perspective, what is defined as circular migration from the point of view of one country may not be circular migration from the point of view of another country. For example, a sequence A→B→A→B→A would lead both countries to consider the individual a circular migrant (see figure 2). However, the sequence A→B→A→C→A, composed again of two full loops, would leave country A counting the migrant as a circular one but neither country B nor C would define the person as a circular migrant (see figure 3). In fact, many countries may only record sequences (OUT)-IN-OUT-IN-OUT.

Figure 3
Alternative depiction of circular migration
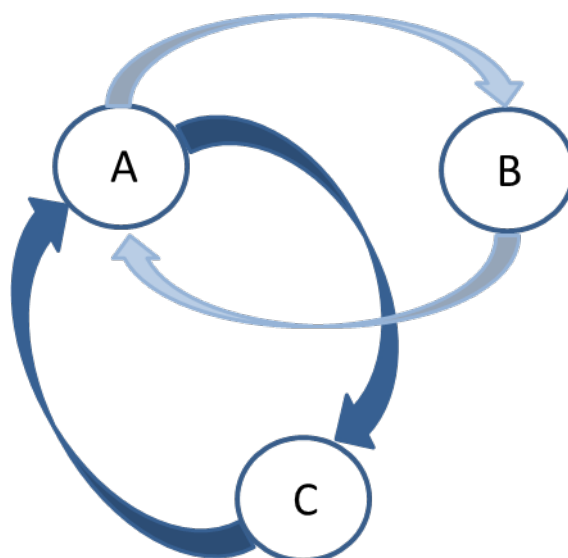
55.   This problem relates to the challenges with differentiating circular migration from return migration. For example, in the case of a migrant moving from Tajikistan (A) to Kazakhstan (B) to the Russian Federation (C) to Kazakhstan (B) (A→B→C→B), from the point of view of Kazakhstan this person should be counted as a circular migrant (immigrated to same country more than once) (see figure 4). However, this person is simply a return migrant, having only completed one migration "loop". He/she has not lived in at least two countries more than once.

Figure 4
Example of return migration
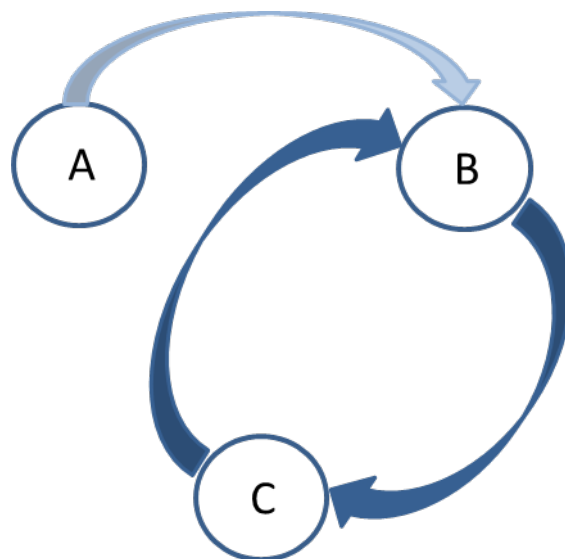
3.2. Directionality

56. Directionality is related to the direction of moves and it would require the identification of a country of origin; however, directionality is not a necessary consideration for the definition of circular migration. Repeated movement from a specific country of origin is not central in the definition of circular migration, as this would create too much complexity. Repetition of movement and completed loops are more important.

57. There are several ways to define the country of origin. It could be the country of birth, or the country of citizenship, or the country of (previous) usual residence of a migrant who may never return to his/her birth country but crosses international borders enough times to be classified as a circular migrant anyway.

58. Directionality determines circular migration in scenarios where circular migration depends on the country perspective, as discussed above. Moreover, when considering the developmental impact of circular migration, it makes sense to make the country of origin explicit. While it may not be possible to include directionality in the statistical definition, the developmental impact suggests that directionality should be an important aspect of the conceptual definition.

3.3. Time

59. 'Time' refers to both the duration of stay of the circular migrants and to the time period over which the circularity is assessed.

60. The time dimension of circular migration adds complexity to the definition. On the simplest level, the duration of stay abroad or in the country of origin is not considered. Thus, any move of any duration would meet the simple criteria. Complexity can be increased by setting criteria for duration of stay or setting a limit for the time period during which moves are counted. While time limits and minimum periods of stay may make any definition somewhat more complex, they facilitate the analysis of statistical sources, as many countries may not capture short visits statistically, especially within areas of free movement such as the EU.

61.   The time threshold for duration of stay is perhaps less relevant for the conceptual definition, but critical for the statistical definition. Short-term migrants are deemed policy relevant, thus separate types of circular migration should be proposed for the statistical definition.

62.   To distinguish from short-term visits, a criterion for duration should be set. A minimum stay of three months (or an intention to stay for three months) in a country of destination (or away from a country of origin, if split among several countries) fits the United Nations definitions of a short-term migrant. Therefore, it is a natural minimum stay criterion for circular migration. In order to provide further precision on this duration, 90 days is used in the definitions in this publication. The duration dimension is also important when distinguishing between short-term and long-term migration.

63.   Moves should be restricted to a period of observation as a maximum threshold. To analyse how this possible restriction would affect the number of circular migrants, it is included in the country tests covered in section 5.2.

64.   While the 3-month minimum stay criterion coincides with the United Nations recommendations for short-term migrants (3 to 12 months), it does not correspond with the 12-month criterion used for internationally comparable migration statistics ("long-term" migration by the United Nations definition)..

3.4.   Purpose of move

65.   Difficult-to-measure dimensions such as purpose of move should be excluded from a statistical definition of circular migration, though the conceptual definition could refer to them.

66.   Purpose of move can be a very important piece of information for policymaking. For example, to understand the acquisition of human capital, countries may wish to collect information on whether circular migration is for work, study, training or for other purposes. Thus, if available, the "purpose of move" could be included in tabulation of circular migration data.

3.5.   Developmental impact

67.   Circular migration may have several benefits. It may provide gains to countries of both origin and destination, as well as to the migrants themselves. Circular migration can alleviate labour shortages in countries of destination and increase their economic production. In countries of origin, it can provide unemployment relief and both financial and human capital (in terms of skills and resources brought back to the country), as well as mitigate population loss due to emigration. Individual migrants also benefit via increased income, greater work experience, and the development of their human capital.

68.   These "multiple layers" of impact of migration – macro-level, meso (or community) level and individual migrant level – make capturing data on the developmental impact through a single estimation method particularly challenging. Some attempts to describe the developmental impact of migration have been made in the past, though most of them required conduction of complex multiple surveys[6].

69.   Furthermore, these developmental benefits of circular migration are conditional on the legality of migration and its temporary character: if migrants are moving irregularly and work informally, they expose themselves to high risk of labour exploitation and trafficking and receive

---

[6] See, for instance, IPPR's report on their work in 2009 available from http://www.ippr.org/publications/development-on-the-move-measuring-and-optimising-migrations-economic-and-social-impacts

much smaller financial gains from migration than expected. Further, as time goes by and migrants continue working abroad for protracted periods, they may start bringing their families to the destination countries, turning circular migration into a more permanent form. Alternatively, migrants may start losing ties with their families back at home, stop sending remittances, and even start new families in destination countries, which results in a phenomenon of "families left behind or abandoned" and related high social cost of migration. In sum, it depends on a number of enabling conditions in both origin and destination countries whether circular migration can act as a positive factor of development.

70.   Developmental impact of circular migration is difficult to measure. By expanding the "purpose" dimension to include all types of moves, not just employment-related, parts of this dimension could be indirectly included. It would be too restrictive to include legal migrants only. Therefore, all circular migrants should be included in the statistical definition irrespective of status. It is acknowledged, however, that irregular migrations are not normally captured in official databases, which makes a differentiation between legal and irregular migration difficult or impossible.

4. Key Issues for a Statistical Definition of Circular Migration

4.1. Conceptual and statistical definitions of circular migration

71.   The majority of definitions concerning circular migration can be called "conceptual definitions", meaning that their main objective is to describe circular migration within a broader policy context and in terms of its impact on the various parties involved, not necessarily to promote comparability across countries or over time.

72.   To overcome drawbacks of conceptual definitions when developing frameworks for statistical observation, other types of definitions, which would allow consistent monitoring of circular migration and measuring of its progressive evolution – or what are known as "statistical" definitions – need to be developed. Unlike conceptual definitions, the statistical definitions clearly stipulate the parameters of human mobility, which have to take place for it to be counted as a case of circular migration.

73.   Table 2 presents key differences between conceptual and statistical definitions of circular migration, based on the criteria used to differentiate among the various possible types of international migration. As emerges from this comparison, conceptual definitions primarily focus on the qualitative parts of circular migration, such as its purpose or development impact. The statistical definition prioritizes criteria, which have been stipulated in the United Nations Recommendations on International Migration Statistics, in particular through the notion of change of residence and duration of residence.

Table 2
Conceptual and statistical definitions of circular migration[7]

Criterion	Conceptual definition	Statistical definition
Change of residence and its duration	– The assumption is that migrants keep their primary residence in one country while temporarily going to another country (excluding short visits)	+ "Migration" is taken literally to mean a change of usual residence of at least 3 months (short-term) or of at least 12 months (long-term)
Periodicity and repetitiveness of movement	+ To distinguish from return or temporary migration, at least two loops have to take place (out-in and out-in) in the country for which circular migration is being calculated (i.e. the reporting country)	+ To distinguish from return or temporary migration, three or more border crossings have to take place in the country for which circular migration is being calculated (i.e. the reporting country)

---

[7] International Organization for Migration (2015)

Criterion	Conceptual definition	Statistical definition
Directionality	+ Importance of link to the country of origin (CO): either leaving from and returning to the CO, or leaving for the CO and returning back to the country of destination	− Can take place between any two countries and countries may change over time
Purpose	+ Primarily economic, such as employment, study, business	− No specification
Development impact	+ Important to be mentioned	− Not included as hard to count
Legal status	−/+ Not the key focus, but legal migration has higher potential for bringing positive impact	−/+ Not the key focus but has been identified in some contexts (EMN)
Spontaneous/ facilitated	−/+ Can be differentiated by this criterion but not a key one	−/+ Can be differentiated by this criterion but not a key one

Note: The plus and minus signs indicate whether the dimension should be included in the definition. Plus means it is necessary to include the dimension, minus means it is not necessary. Plus/minus refers to the dimension being optional.

4.2.   Proposals for a definition of circular migration

74.   The distinction between conceptual and statistical definitions stems from the need to describe accurately what we would like to measure on the one hand, and on the practicalities of such measurement, on the other hand. It is clear that a country may have specific policy purposes that would translate in an *ad-hoc* definition of conceptual migration. However, it has been considered appropriate to identify a single conceptual definition that is as close as possible to policy needs and, at the same time, not far from a realistic statistical implementation. Such a definition should also be able to capture both "managed" and "spontaneous" circular migration.

4.2.1.   Conceptual definition

75.   The definition proposed by the European Migration Network (EMN) in its Glossary[8] can be considered a suitable candidate for a common conceptual definition of circular migration:

"*[a] repetition of legal migration by the same person between two or more countries.*"

76.   As described above, some dimensions of circular migration are difficult to measure, which may hinder a wide use of the concept and thus its international comparability. The EMN definition is simple and well known to European policymakers. However, it still requires additional steps to become a statistical definition. For this, an analysis of the EMN definition by its components is provided below.

---

[8] See EMN Glossary at : http://ec.europa.eu/dgs/home-affairs/what-we-do/networks/european_migration_network/glossary/index_a_en.htm

77.   The first word, "repetition", indicates that the phenomenon must repeat over time. However, such definition does not give guidance about the time period of reference. Are few repetitions of migratory events spread over the lifetime of a person enough to qualify that individual as a circular migrant? A common-sense interpretation would rather refer towards a higher frequency, given by the number of migratory events within a time period shorter than a lifetime. A period of ten years has been considered long enough to allow the deployment of circularity and short enough to exclude cases of no interest from a policy perspective, such as persons whose repeated migrations are quite distant in time. The time period should be rolling, in the sense that it should refer to the latest ten years from the reference time.

78.   The second word of the EMN definition, "legal", introduces one of the dimensions considered for circular migration. While this qualification meets the requirement of "managed" migration, i.e. migration organized in a legislative and/or policy framework, it would neglect some spontaneous forms of circular migration, which may even occur outside a legal framework. The restriction to legal migration would also complicate statistical measurement, because migrants are not always surveyed by their legal status. Furthermore, the international definition of migration does not include any qualification of legality. For these reasons, the statistical implementation should not include such a requirement.

79.   The use of the word "migration" instead of "moves" or "mobility" implies that any change of country must satisfy the requirement of duration of actual and/or intended stay defined in the international recommendations. These identify international migration as a change of the country of usual residence with duration of stay of at least 12 months in the country of destination, and exclude travels related to recreation, holiday, visits to relatives or friends, business, medical treatment or religious pilgrimage. However, international recommendations also allow for changes of residence of shorter duration, namely for periods between 3 and 12 months, labelling them as "short-term" migrations.

80.   Inclusion of short-term migration in the definition of circular migration is supported by the policy interest in short-term international moves. On the other side, such inclusion would complicate the nesting of circular migration in the ordinary international migration statistics that cover moves of at least 12 months. If circular migration would only consist of moves whose duration abroad is at least 12 months then it would be possible to tabulate it as a subset of overall international migration and to assess its weight.

81.   There is a latent confusion between "circular" and "seasonal" migration. The latter is defined in international recommendations only with reference to work as the purpose, identifying seasonal migrant workers as "*persons employed by a country other than their own for only part of a year because the work they perform depends on seasonal conditions*". Therefore, to be qualified as "seasonal", a migration must be short-term (i.e. a stay abroad of 3 to 12 months), done for the purpose of work and during a specific period of the year (most likely recurrent). Repeated seasonal migration could then be seen as a special case of circular migration if short-term migration is accepted as form of circularity.

82.   The words "by the same person" in the EMN definition suggests that a migration must be linked to an identifier of the corresponding migrant and stored over time. Although collecting individual migration trajectories would provide the ideal information, this is hardly achievable. From a statistical perspective, a compromise must be reached between fulfilling data needs and the cost and burden of the related data collection.

83.   The last part of the EMN definition, "between two or more countries", gives enough flexibility to deal with the complexity of migration trajectories in practical cases. On the one hand, specifying "two or more" does not limit circular migration to simple pendulum migration (back-and-forth migrations) between two countries and allows the frame to be enlarged to more composite migration patterns. On the other hand, it opens the challenge to define the borderline of circularity.

Again, the statistical implementation must find an equilibrium between the completeness of the set of migration patterns and the feasibility of data collection.

4.2.2. Statistical definition

84.   Following the considerations expressed on the conceptual definition, the **general** statistical definition proposed for circular migration is the following:

> *A circular migrant is a person who has crossed the national borders of the reporting country at least 3 times over a 10-year period, each time with duration of stay (abroad or in the country) of at least 12 months.*

85.   To meet the policy needs for information on shorter durations of stay, the **extended** statistical definition allowing for short-term migrations is as follows:

> *A circular migrant is a person who has crossed the national borders of the reporting country at least 3 times over a 10-year period, each time with duration of stay (abroad or in the country) of at least 90 days*.

86.   This latter definition encompasses both short-term and long-term migrations, as well as any of their combination. As such, it is not strictly compliant with international recommendations that define a change of country of residence based on at least 12 months of stay. In reporting statistical data on circular migration, it is therefore of paramount importance to clarify to which definition the data refer – general or extended.

87.   This statistical definition of circular migration identifies all persons with migration patterns such as immigration-emigration-immigration and emigration-immigration-emigration. It has minimum requirements, as it only needs to link migratory events to the persons. In its general form, it is tied to the international definition of migration, which looks at durations of stay of at least 12 months, and thus allows assessing the share of circular migrants in the total number of international migrants. It does not limit the circularity to closed sets of countries: a trajectory A→B→A→C is as circular as the trajectory A→B→A→B, when seen from the perspective of the reporting country A. What is relevant here is the perspective of the reporting country only: circularity is meant to be a repeated stay in the same place (the reporting country), regardless of which is/are the other place(s) lived.

88.   In principle, three migratory events do not necessarily identify circular migration behaviour, as it may be commonly understood. Closer to the intuitive idea of circularity may be the concept of loop, intended as a sequence of migrations originating from and returning to a specific country. Under this conceptual framework, circular migration would then be a series of at least two international migration loops made by the same person.

89.   Translating this definition based on loops into statistical practice would mean simply adding one migratory event to the three already considered in the proposed statistical definition. For instance, from the perspective of the reporting country A, a series A→X→A→X→A[9] shows two completed loops and it is based on the sequence emigration-immigration-emigration-immigration, thus four migratory events; likewise, series X→A→X→A→X also shows two completed loops and is based on the sequence immigration-emigration-immigration-emigration, thus again four migratory events. Considering that the measurement of circular migration is in its infancy and there is still much uncertainty about the size of the phenomenon, it has been preferred to propose a wider definition and possibly to infer a stricter one (based on loops) from the tabulated data.

---

[9] Meaning leaving from A to X, returning to A, then again going to X and returning to A, X being an unknown country.

90.   The broadness of the proposed statistical definitions is a potential source of inconsistencies in mirror statistics referring to circular migrants. For instance, the sequence A→B→A→C identifies a circular emigrant for country A, but no circular immigrant for countries B or C. Again, the perspective of the single reporting country has been prioritized.

5.   Operationalization of the Definition

5.1.   Data sources

91.   Circular migration is often understood as a form of temporary migration, albeit repeated temporary migration, given that circular migration is often *de facto* included with the definition of temporary migration used by countries. From a measurement perspective, temporary migration is measured using temporary residence permits or (long-term) visas, while no such single data source is applicable to circular migration. International coordination and agreements on migration are important for collecting these data.

92.   In the ideal situation, the complete migration history of a person would be available. This would make it easy to determine whether a person qualifies as a circular migrant. However, it is not always possible to obtain all historical data. In the absence of full records, administrative sources can be used to measure migration. Among administrative sources, population registers, border controls, visas, and work or residence permits are the most used. In the following paragraphs these sources are analysed, focusing on the advantages and the limitations of each source.

5.1.1.   Population registers and similar databases

93.   Population registers can serve as sources of information, if repeated moves in and out of the country are registered consistently and continuously. Registration dates are useful for measuring the number of moves and the duration between repeated moves in and out of the country. If the population register in a country has a wide coverage and events have been recorded over a sufficiently long period, it is possible to form a picture of the migration history of individuals given the availability of personal identification numbers (PINs) for linking data, keeping in mind the legal restrictions related to privacy. Data in population registers is usually disaggregated.

94.   The usefulness of population registers as sources of information on circular migration depends on their quality. It may not always be possible to know where a person moved to or where he/she came from in between entries. People do not always notify authorities when they leave or when they come back, particularly if the move is originally of a temporary nature. Recent immigrants may not be asked to register until after a defined period that varies across countries. Population registers do not cover undocumented migrants, resulting in a possible undercount in the case of non-registered aliens in general.

95.   Another drawback of population registers is that they do not provide any information regarding the purpose or reason for move, thus making it difficult to assess developmental impact using only population registers. It may be possible to link data from population registers with visa or work permit systems to gain some insight regarding the purpose of migration, but this would not help in determining the developmental impact.

96.   Some countries have databases on foreign nationals that include, among others, entries and exits, personal data and data on visas or residence permits. They may follow a similar logic as a population register while confined to people who are not nationals of the country. An example of this is the German Central Register of Foreign Nationals (Ausländerzentralregister, AZR). Such databases can also provide useful sources for measuring circular migration (for an example, see Schneider & Parusel 2015).

5.1.2.   Border control (entry-exit systems)

97.   Border control data provides data on the times and dates of when people arrive and exit a country. These data could help measure time between entrances or exits (given the existence of PINs), but other information would be difficult to extract from these data. As with other sources, disaggregation by nationality, sex or age is possible.

98.   Border control data do not usually contain data on country of origin or destination, when that country is different from the bordering one. The purpose of move (unless accompanied by border survey) or developmental impact are also not recorded. Incomplete coverage is a distinct possibility given the presence of border free regimes and unmanned land border crossings in many parts of the world. These data are produced for control/monitoring purposes, not for statistical purposes, and are therefore usually outside the control of NSOs.

99.   In order to be useful in the measurement of circular migration, border-crossing data must contain information consistent enough for individual migrants to be uniquely identified. For instance, since names may be recorded differently or even change, and since passport numbers may also change upon renewal, using them for the above stated purpose may pose a risk. Universally accepted PINs could prove useful in the future.

5.1.3.   Visas and permits

100.   Visa, work and residence permit systems are a popular source for measuring migration, particularly labour migration. They provide information on visas or work/residence permits applied for and granted/denied, as well as renewals or cancelations of such visas/permits and the nationality of applicants. These may also be the only sources with clearer information on the different purposes or reasons to move, but they do not include information about developmental impact.

101.   Although different permit systems record a variety of information, it may not always be accurate. For example, the issuing, renewal or cancelation of a permit may not always coincide with an actual move. In addition, even if the nationality of applicants is recorded, their country of origin or previous residence may not be. In addition, in visa-free regimes this type of information is not recorded, although in some cases migrants are asked to register their stay. It is also possible that in some cases, new residence permits cannot be linked to earlier permits a person might have had.

5.1.4.   Household surveys

102.   When a suitable registration system is not yet in operation, an ad-hoc household survey may fill the gap for the measurement of circular migration, alone or in combination with other sources. Surveys may provide information on circular migration with limitations similar to those of a population census, including the respondents' challenges of recall over longer periods. Possible questions to include in such surveys would be, for example, asking the year of first entry and the year of most recent entry as well as asking if a person's most recent entry into a country is their first time entering the country in the past 10 years.

5.1.5.   Demographic surveys

103.   Demographic surveys, in particular, lend themselves naturally to include questions regarding migration histories since many already do so for other historical information. Surveys could even be made migration specific. In this case, they can ask about reasons for individual moves and even provide information on the developmental impact by gathering information on remittances sent and/or received, use of remittances, characteristics before first move compared to now (such as education, occupation, income, marital status etc.), skills brought back to country of origin, skills brought to country of destination, etc.

104.   Specialized migration surveys are normally not collected regularly. Sampling issues to identify circular migrants (who are likely to be a rare population) may be present; thus they also may need a relatively large or specialized (over/targeted) sample and even non-probabilistic methods may need to be used. As with a census, recall issues or issues relating to question sensitivity (especially if moves were unauthorized) may have to be dealt with. As with household surveys, recall over longer periods could be difficult and similar questions could be included to identify circular migrants.

5.1.6.   Census

105.   Population censuses have been used in the past to study international migration through questions regarding country of birth or citizenship, year or period of (first or last) arrival in the country and, in some cases, country of residence at a specified date in the past. Given their universality, small subpopulations such as migrants may be accurately measured and even disaggregated by nationality, age or sex.

106.   However, under the above circumstances information about at most two entries in the country by a resident can be obtained. When a suitable indirect respondent is found, questions such as the above could be asked about emigrants but they are expected to be under-enumerated. An undercount of non-registered aliens is also to be expected. In addition, the infrequent collection of census information may lead to an undercount of circular migrants. It is clear that many more questions have to be added to obtain a complete migration history with dates of arrival/departure, country of origin/destination, purpose and others. Even if they were included, problems of recall by direct and, possibly worse, by indirect respondents may have to be faced. As described in the previous sections for surveys, specific questions could be included to identify circular migrants, noting again that recall over longer periods could be difficult.

5.1.7.   Big data

107.   National and multinational statistical agencies are looking into newer information sources, which may prove useful in the production of official statistics in general, and for circular migration in particular. The term "Big Data" encompasses these data sources.

108.   Information about cell-phone use or about geo-located tweets on both sides of a border or from two or more countries may prove useful to follow short- and long-term migrants. Location information provided by cell phones could be used to determine the location of the user at any point in time (assuming the device is not shared between people or not using a different SIM card). That information could be used to determine that person's movements.

109.   Since only usage is followed, purpose of move or developmental impact cannot be determined. In addition, there are limitations in the form of undercoverage (limited to users) and of privacy concerns. The mobile data may follow devices rather than individuals and individuals could have more than one electronic device (e.g. different SIM cards for different countries). In all cases, the data are not under the control of the NSO, but produced by others, meaning that accessing the data would require an agreement between the data producer and NSO. Negotiating agreements may prove to be expensive and difficult. In the Twitter case, a free of charge 1 per cent sample of Twitter's global stream of tweet data matching some parameters[10] pre-set by the user may be obtained through a Streaming API[11]. The data gathered in this fashion may however amount to several gigabytes over a short period. Even if it does not measure residency, but just physical

---

[10] A Mexican study of cross-border mobility patterns looked at geo-referenced tweets posted from within a set of rectangular regions that covered the Mexico-US border.

[11] API: Application Programming Interface; see https://dev.twitter.com/streaming/overview

presence, thus "change of (country of) usual residence" may be all we can measure. It is also unclear whether the use of big data allows differentiation between migration and short-term mobility of e.g. tourists, business people, migrants in transit, and other travellers.

Table 3
Data sources for measuring circular migration

Data source	Date of move		Origin	Destination	Purpose of move	Income	Area of qualifica-tion	Education level
	in	out						
population censuses, once every 5 or 10 years	limited	limited to 1 if ade-quate re-spondent found	limited	limited to 1 if adequate respondent found	hard but could be added	available in some censuses	available in some censuses	available in most censuses
population registers, con-tinuous, no "irregular"	based on re- and de-registration if compulsory		limited	hard to get	from visas	no (may be available through linkages)	no (may be available through linkages)	no (may be available through linkages)
border con-trol, continu-ous	yes if electronic		no or ad-ditional form	no or addi-tional form	no or addi-tional form	no or ad-ditional form	no or ad-ditional form	no or additional form
visa, work or residence permit	yes		yes	yes	yes	no	no	no
household survey, fre-quent	yes, approx. if ade-quate respondent found		yes	yes	yes	yes	yes	yes
Big data:								
mobile con-tinuous if line is kept	yes, approx.		yes same conditions		no	no	no	no
Twitter con-tinuous ac-count is same, all postings public	yes, approx. if cell phone used and GPS location ena-bled		yes same conditions		no	no	no	no
Facebook con-tinuous ac-count is same, not all post-ings public	no		?	?	no	no	no	no

5.2.   Testing of definitions: Italy

5.2.1.   Description

110.   Normally, Italian data on immigration and emigration flows do not include the duration of move, either intended or actual. Furthermore, Italy does not produce any statistics that allow the identification and analysis of the migration history of a person. In order to get this information, Italy conducted a data linkage procedure using the population register as a data source. Individual data from 2005 to 2014 concerning immigrations and emigrations were taken into account. The aim was to select the individuals with at least three international moves by linking all the migration flows that took place during the above-mentioned period. The underlying hypothesis is that if a person had moved at least three times, it would mean that the same person has taken up temporary or permanent residence in Italy more than once, regardless of whether the first recorded move is emigration or immigration.

5.2.2.   Data

111.   In Italy, official statistics on international migration flows are based on local population registers, which are under the responsibility of the Ministry of Interior. The Ministry is in charge of supervising local administrations and national security.

112.   Population registers are used to produce migration statistics and the data collection is based on two forms. The first one is under the direct control of the National Institute for Statistics (ISTAT) and is sent to all municipalities. Municipalities are obliged to deliver aggregated data on the demographic balance of the resident population. The second form concerns individual data on changes of residence that are transmitted to ISTAT, which is responsible for data correction and validation. Individual data include a personal identification number that can be used to link the movements referred to the same person over a period of ten years. Change of residence data provide information on internal and international migration flows, on both the origin and destination of a single movement as well as the main socio-demographic characteristics of migrants. Since 2010, the international migration statistics produced by these two sources (individual and aggregated) are consistent.

113.   ISTAT collects individual data from more than 8,000 municipalities yearly. The number of changes of residence (internal and international) is about 1,800,000 per year. The data collected are not directly usable because of errors in data entry, missing information or other invalid data. Therefore, the first data cleaning activity is the detection and the deterministic removal of errors and inconsistencies. With regard to missing information, a donor method is used to impute missing values. The validated data are cross-checked against the aggregated data (demographic balance) and the inconsistencies are removed in order to produce unique, more accurate and consistent migration statistics as required by Regulation EC No 862/2007 of the European Parliament and of the Council.

5.2.3.   Results

114.   The result was that 42,768 persons undertook at least three international migrations from/to Italy. Not all the migration histories of these individuals were found consistent, which in this case means that the event of immigration is followed by emigration and vice versa. Of the records, 29,171 were fully consistent (…emigration – immigration – emigration …) and 13,597 records were not consistent (at least two emigrations or two immigrations in a row). For the analysis below, only the consistent records were taken into account. According to the definition of circular emigrant and circular immigrant, the 3,665 migrants that undertook at least 4 movements would have been considered either "circular emigrants" or "circular immigrants" in migration flow statistics at

27

different points over this period, since they both immigrated and emigrated at least two times during the period 1 January 2005 – 31 December 2014.

Table 4
Migrants with at least three movements by number of movements (from 1 January 2005 to 31 December 2014)

Number of	Migrants	
movements	Number	%
3	25,506	87.44
4	3,026	10.37
5	518	1.78
6	103	0.35
7	13	0.04
8	4	0.01
9	1	0.00
Total	**29,171**	**100**

115.   A period of 10 years has been used as a threshold. During that period, 29,171 migrants moved at least three times. However, it is possible to reduce the period and work with a different number of years.

Table 5
Migrants with at least three movements by years of observation

Years of observation	Migrants
10 years (2005-2014)	29,171
9 years (2006-2014)	26,250
8 years (2007-2014)	23,016
7 years (2008-2014)	17,585
6 years (2009-2014)	12,314
5 years (2010-2014)	8,322
4 years (2011-2014)	4,502
3 years (2012-2014)	2,100
2 years (2013-2014)	571

116.   The comparison between the number of migrants during the first five years (2005-2009) and the second five years (2010-2014) shows that the number of individuals with at least three international migrations (within the corresponding five-year period) has increased from 3,767 (2005-2009) to 8,322 (2010-2014) (see table 6). The quality of the data source improved in the last five years and this increase might reflect the better possibility to link the migration flows related to the same individuals in that period.

Table 6
Migrants with at least three movements by years of observation

Years of observation	Migrants
from 2005 to 2009	3,767
from 2010 to 2014	8,322

117.	In terms of variables, the source includes variables related to the flow, such as date of migration and country of emigration/immigration; and variables related to the person, such as sex, date of birth, citizenship, country of birth, civil status and educational attainment (only for nationals). Of course, it is also possible to compute the duration of stay once the linkage is performed. Considering the duration of the first three moves, circular migrants can be divided into three categories: (1) two short and one long-term migration, (2) two long and one short-term migration, and (3) tree long-term migrations.

Table 7
Migrants with at least three movements by duration of the first three moves (from 1 January 2005 to 31 December 2014)

Duration of stay	*Migrants*	
	Number	*%*
Two short and one long-term migration	3,054	10.5
Two long and one short-term migration	13,398	45.9
Three long-term migrations	12,719	43.6
Total	**29,171**	**100**

118.	The majority of migrants with at least three moves are non-nationals (73.1%). Of the 7,831 nationals with at least three moves, 1,854 were foreign born (23.7%).

Table 8
Migrants with at least three movements by duration of the first three moves (from 1 January 2005 to 31 December 2014)

Citizenship	*Country of birth*		*Total*
	Native-born	*Foreign born*	
National	5,977	1,854	7,831
Non-national	702	20,638	21,340
Total	**6,679**	**22,492**	**29,171**

119.	With regard to the origin and destination of the migrants with at least three international moves, we need to distinguish between two categories: (a) migrants who did not choose the same country for immigration and emigration during the 10 years of observation (different countries); and (b) migrants who moved back and forth between Italy and only one foreign country (same country). The data show that 24,314 people have immigrated from and emigrated to the same country (83.3%) while 4,857 people have chosen different countries of residence (16.7%). The percentage of people that move from and to one country is obviously higher if we consider foreigners (92.3%) because of their bonds with their country of citizenship.

Table 9
Migrants with at least three movements by citizenship and country of origin and destination (1 January 2005 to 31 December 2014)

Citizenship	*Countries of origin and destination*		*Total*
	Different	*Same*	
National	3,210	4,621	7,831
Non-national	1,647	19,693	21,340
Total	**4,857**	**24,314**	**29,171**

120.　　Considering the 24,314 migrants that moved back and forth between Italy and only one foreign country, the data show that Italian nationals have chosen to move to Germany, UK and Brazil, while non-nationals have mainly moved back and forth between Romania, China and Morocco.

Table 10
Italian migrants with at least three movements by citizenship and country of origin/destination (when it is the same country) and sex (from 1 January 2005 to 31 December 2014)

Country of origin/ destination	Sex		Total
	Male	*Female*	
Germany	400	277	677
United Kingdom	244	174	418
Brazil	207	156	363
United States	194	167	361
France	149	115	264
Switzerland	152	108	260
Spain	86	87	173
Argentina	64	58	122
Venezuela	59	57	116
China	74	36	110
Other countries	978	779	1,757
Total	2,607	2,014	4,621

Table 11
Foreign migrants with at least three movements by citizenship and country of origin/destination (when it is the same country) and gender (from 1 January 2005 to 31 December 2014)

Country of origin/ destination	Sex		Total
	Male	*Female*	
Romania	2,494	4,232	6,726
China	720	710	1,430
Morocco	737	562	1,299
Ukraine	186	1,045	1,231
Republic of Moldova	292	677	969
Bangladesh	492	444	936
Albania	504	370	874
India	404	267	671
Poland	165	426	591
Pakistan	314	216	530
Other countries	2,049	2,387	4,436
Total	8,357	11,336	19,693

5.2.4.　Conclusions from the test

121.　　Linking individual data from population registers allows measuring circular migration. The "at least three moves" rule seems to identify a quite large number of migrants even though it is likely that some migrants were not included, mainly because people do not always communicate where they are living or do not de-register when emigrating. In some cases, data on emigrations

have been estimated using the information from the de-registrations ex-officio, which means that the recorded duration of stay in Italy since previous immigration may be unreliable.

122.   There are many possibilities to measure sub-groups of migrants (i.e. nationals/non-nationals, native born/foreign born) and to include or exclude the migrants with a different duration of moves. The quality of the data source allows us to consider ten years at the maximum (from 1 January 2005 to 31 December 2014), which seems a reasonable threshold, but shorter periods can be taken into account. It is also possible to compute the duration of stay once the linkage is performed and to distinguish the circular migrants depending on the duration of the migrations. The following breakdowns are also possible: sex, country of citizenship, country of birth, date of birth, country of origin and destination, date of migration and actual length of stay.

5.3.   Testing of definitions: Sweden

5.3.1.   Set-up

123.   For the purposes of this exercise, Sweden identified circular migrants as persons who have immigrated more than once or emigrated more than once over the past 10 years.

124.   The population of a country changes over time as people are born or die, immigrate or emigrate. The population can also be described as a pool with inflows and outflows of people. This pool can be divided into subsets of the population that are characterised by different attributes (e.g. country of birth, age, gender, place of residence, previous country of residence, among other attributes).

125.   The best source for statistical information on the Swedish population and its evolution over time is the population register. The register is kept by the Swedish Tax Agency (Skatteverket). As a general rule, any person who moves to Sweden and intends, or can be expected to, stay in the country for one year or longer, is required to notify the Tax Agency. When a person is registered (or de-registered), the information to be entered into the register includes the following:

   a.   name, address in Sweden, personal identity number
   b.   country of birth
   c.   citizenship
   d.   civil status
   e.   spouse, children, parents, guardian(s) and adoptions (if any)
   f.   property and municipality in which a person is registered
   g.   immigration to and emigration from Sweden (dates)
   h.   address abroad (previous and next country of residence respectively)
   i.   death and municipality in which a person was registered at time of death

126.   The dates of any entry into, or change made in the register, such as date of marriage, are also registered.

5.3.2.   Data

127.   Based on the register, Statistics Sweden (Statistiska centralbyrån) can provide stock and flow data on persons who have moved to and from Sweden. This includes information on a person's previous (or, in case of emigration, next) country of residence and country of birth. Cross-classifications between different statistical variables are possible. For the purpose of this study, a flow-data approach was taken. This means that all migrations between two cut-off dates were used. The question was how many individuals had immigrated to Sweden more than once during the

period 1 January 2000 – 31 December 2009. This means persons that have at least been registered, de-registered and registered once again between these cut-off dates.[12] The same period (cut-off dates) was used for measuring repeated emigration from Sweden. In a second step, the number of migrations was also measured. For all people who immigrated or emigrated more than once, the number of migrations they had made was counted.

128.   One of the limitations of the Swedish population register as a data source is that people who are not considered residents in Sweden, e.g. people with shorter stays than one year (e.g. tourists, seasonal workers, some short-term students, business travellers, cross-border workers) or preliminary statuses (e.g. asylum seekers) are not part of the register. There can also be under-coverage when it comes to emigration. Although everybody is required to de-register their stay when moving abroad for one year or longer, not all migrants follow this requirement.

129.   Despite these limitations, the population register is regarded as the best available data source for analyses of circular migration to and from Sweden. As an alternative, administrative data on residence permits (from the Swedish Migration Agency) could also be used. This would however exclude all persons who do not need a residence permit to stay in Sweden (Swedish nationals and EU-/EES-nationals).

5.3.3.   Results

130.   The data shows that 12,873 people have immigrated to Sweden two or more times within the period 1 January 2000 to 31 December 2009 to take residence there. Of them, 2,874 were born in Sweden, 4,114 were born in one of the other Nordic countries, and 1,949 were born in other EU Member States (excluding Croatia). Of the total, 1,936 were born in Asian countries. The number of circular migrants was bigger for men (6,925) than for women (5,948). The number of persons who emigrated from Sweden two times or more was 10,733.

Table 12
Persons who have immigrated to Sweden more than once during the period 1 Jan 2000-31 Dec 2009

Region of birth	Women				Men				Both sexes
	Age by 31 Dec 2009			Total	Age by 31 Dec 2009			Total	
	0-18	19-64	65+		0-18	19-64	65+		
Sweden	279	1,145	18	1,442	288	1,116	28	1,432	2,874
Nordic countries	229	1,595	71	1,895	221	1,866	132	2,219	4,114
EU27 except Nordic countries	166	606	24	796	169	958	26	1,153	1,949
Rest of Europe	55	240	4	299	40	319	10	369	668
Africa	34	138	1	173	39	253	6	298	471
Asia	182	742	8	932	150	846	8	1,004	1,936
North America	71	150	3	224	57	172	2	231	455
South America	34	106		140	32	96	1	129	269
Oceania	13	28		41	11	73		84	125
Other	1	5		6		6		6	12
Total	**1,064**	**4,755**	**129**	**5,948**	**1,007**	**5,705**	**213**	**6,925**	**12,873**

---

[12] The Swedish study only included migrants whose first migration took place after 1 January 2000. This means that there is an undercoverage regarding circular migrants who had their first migration before 1 January 2000 but otherwise met the conditions.

Table 13
Number of migrations for persons who have immigrated to Sweden more than once during the period 1 Jan 2000-31 Dec 2009

Region of birth	Women			Total	Men			Total	Both sexes
	Age by 31 Dec 2009				Age by 31 Dec 2009				
	0-18	19-64	65+		0-18	19-64	65+		
Sweden	1,206	4,844	80	6,130	1,257	4,782	128	6,167	12,297
Nordic countries	834	5,655	245	6,734	784	6,647	444	7,875	14,609
EU27 except Nordic countries	539	1,964	75	2,578	542	3,104	87	3,733	6,311
Rest of Europe	176	751	13	940	121	1,028	38	1,187	2,127
Africa	104	447	3	554	124	823	18	965	1,519
Asia	590	2,383	27	3,000	494	2,803	27	3,324	6,324
North America	231	481	11	723	188	561	8	757	1,480
South America	103	330		433	101	306	3	410	843
Oceania	45	94		139	36	233		269	408
Other	3	19		22		22		22	44
Total	**3,831**	**16,968**	**454**	**21,253**	**3,647**	**20,309**	**753**	**24,709**	**45,962**

131.   The Swedish data also shows that the number of migrations in the given time period was greater than the number of migrants. Statistics Sweden asked how many migrations the people who had immigrated or emigrated twice or more times had made. While the number of persons who had immigrated more than once was 12,873, these persons had migrated 45,962 times in total. This means that a number of people had immigrated three or more times. The exact results from Sweden are displayed in tables 12 to 15.

Table 14
Persons who have emigrated from Sweden more than once during the period 1 Jan 2000-31 Dec 2009

Region of birth	Women			Total	Men			Total	Both sexes
	Age by 31 Dec 2009				Age by 31 Dec 2009				
	0-18	19-64	65+		0-18	19-64	65+		
Sweden	912	3,025	40	3,977	965	2,860	76	3,901	7,878
Nordic countries	104	673	26	803	88	809	35	932	1,735
EU27 except Nordic countries	33	112	3	148	31	184	7	222	370
Rest of Europe	10	31	1	42	1	61	5	67	109
Africa	2	25		27	7	45		52	79
Asia	34	134	2	170	31	198	3	232	402
North America	14	27	2	43	14	31	2	47	90
South America	1	12		13	4	16		20	33
Oceania	5	10		15	3	13		16	31
Other		3		3		3		3	6
Total	**1,115**	**4,052**	**74**	**5,241**	**1,144**	**4,220**	**128**	**5,492**	**10,733**

Table 15
Number of migrations for persons who have emigrated from Sweden more than once during the period 1 Jan 2000-31 Dec 2009

Region of birth	Women			Total	Men			Total	Both sexes
	Age by 31 Dec 2009				Age by 31 Dec 2009				
	0-18	19-64	65+		0-18	19-64	65+		
Sweden	3,105	10,484	146	13,735	3,288	10,014	272	13,574	27,309
Nordic countries	459	2,889	110	3,458	385	3,476	153	4,014	7,472
EU27 except Nordic countries	140	482	12	634	128	782	30	940	1,574
Rest of Europe	41	124	4	169	4	254	23	281	450
Africa	8	108		116	28	199		227	343
Asia	146	559	9	714	137	859	12	1,008	1,722
North America	60	112	8	180	59	138	8	205	385
South America	4	48		52	17	66		83	135
Oceania	21	40		61	12	53		65	126
Other		13		13		13		13	26
Total	**3,984**	**14,859**	**289**	**19,132**	**4,058**	**15,854**	**498**	**20,410**	**39,542**

5.3.4. Conclusions from the test

132.   As the example of Sweden shows, population registers can be useful sources of data for measuring circular migration. While there is a risk of under-coverage, particularly because some people do not de-register when they emigrate, both the number of circular migrants and the total number of cross-border migrations they have made can be measured. There is also a possibility to measure sub-groups, i.e. circular migration among certain nationalities, age and gender groups, countries of birth, or countries or previous residence. It is also possible to include or exclude the nationals of the analysing country, in this case Swedish nationals.

133.   The result of the Swedish testing exercise shows that the number of persons who immigrated more than once was somewhat greater than the number of persons who emigrated more than once. It is necessary to understand, however, that that these two categories overlap. A person who has moved to and from Sweden several times may appear both an immigrant and as an emigrant, as long as the underlying definition is fulfilled. Thus, the total number of circular migrants over this period does not match the sum of persons who immigrated more than once and persons who emigrated more than once.

134.   Any possible cut-off dates can be used. A ten-year period may be reasonable, but other periods are also possible. It is also possible to analyse if circular migration increases or decreases over time, when compared to other migration patterns. For this purpose, different cut-off dates could be used, i.e. 1 January 1990 – 31 December 1999, 1 January 2000 – 31 December 2009, and so on.

135.   The Swedish population register, however, only includes migrants that stay, or are expected to stay, for at least one year. Thus it cannot provide information on short-term circular migration.

6.   *Conclusions*

136.   Although intuitively clear, the concept of circular migration is challenging when it comes to finding a statistical definition that applies to the variety of migration trajectories concerned. To meet the target of statistical measurability that should allow the production of the first internationally comparable figures on circular migration, a *general* statistical definition is proposed, as follows:

> *A circular migrant is a person who has crossed the national borders of the reporting country at least 3 times over a 10-year period, each time with duration of stay (abroad or in the country) of at least 12 months.*

137.   To meet the policy needs for information on shorter durations of stay, the *extended* statistical definition allowing for short-term migrations is as follows:

> *A circular migrant is a person who has crossed the national borders of the reporting country at least 3 times over a 10-year period, each time with the duration of stay (abroad or in the country) of at least 90 days.*

138.   Two countries, Italy and Sweden, tested the proposed definitions with empirical data. While the results are encouraging, broader experimental use is needed to understand better the practical challenges and opportunities in producing the statistics. Inputs from policymakers could also help fine-tune the definitions. A publication of internationally comparable experimental statistics on circular migration may be an efficient way to improve knowledge on this topic and its measurement.

139.   Additional information can be linked to circular migration statistics to enhance their use. The work here has focussed only on the measurement of the overall size of circular migration, without entering into the details of the most appropriate cross-tabulations. This may be a task for a future expert group on circular migration.

7.   Future work

7.1.   Introduction

140.   Preparation of this publication revealed needs for further methodological work and testing, as current knowledge and experience do not allow reaching conclusive recommendations on several key aspects of circular migration. The following sections summarize such areas for future work.

7.2.   Further testing of the proposed concepts

141.   The case studies in this publication focus on population registers as the principal data source for measuring circular migration. Additional work on consistent methodology would be needed to ensure that registers allow for the possibility of analysing individual migration history, particularly in the context of a free movement of people within the EU.

142.   The concepts on measuring circular migration could also be reviewed with survey or census data since population registers are not implemented in all countries. Several countries and international organizations which use surveys or censuses to collect migration statistics have indicated that they may be willing to test these definitions. Where possible, it may prove useful to validate the applicability of the definitions through a survey in which complete migration histories are collected and the results are compared to those obtained using administrative sources. Another possible application which could take advantage or improve cooperation between countries would be to introduce questions on circular migration in cross-border surveys.

143.   The extended definition for circular migration that comprises short-term migration could be tested in countries where short-term migration is recorded in registers.

144.   In cases in which a reporting country differentiates between circular immigrants and circular emigrants, possible overlaps between these two categories should be kept in mind and addressed, depending on the purpose of the statistical analysis at hand. In statistical analyses based on flow data, persons who migrate several times may appear both as immigrants and as emigrants. While this is not necessarily a problem, for example when the main goal of a statistical evaluation is to produce an estimate of all circular migrants regardless of whether their migration trajectory started or ended with an immigration or emigration, further work could clarify how it can be determined whether a person is counted as a circular immigrant or a circular emigrant. A differentiation could either be based on a person's first immigration/emigration or on their last immigration/emigration, from the perspective of the reporting country.

145.   The definitions in this publication do not prioritize either stocks or flows of circular migrants over the other. They can be used to identify both groups. Migration flows modify the total number of immigrants already in the country (i.e., the stock) at the beginning of the period. The new immigrants are added to this number, while the number of emigrants is subtracted (taking into account the mortality of this group as well). Future work may focus on applying this concept to the case of circular migration.

146.   Lastly, further research on the selection of the length of the period for which countries should track migration events in order to identify circular migrants would be useful. As an example, some countries have suggested that an alternative period of 5 years (rather than 10 years) could be more appropriate for short-term migration. This could be investigated further through additional case studies.

7.3.   Circular migration's impact on development

147.   In response to questions from some countries about the relevance of data on circular migration, further research may help to clarify the impact of circular migration on development. This research could help to identify what information should be included in the documents to obtain visas or work permits to learn about the impact of this type of migration on development.

7.4.   Practical implementation

148.   While this publication discusses the main concepts and definitions of circular migration, further guidance could be provided on practical implementation. As noted in this publication, there are differences between countries in the collection of data on migration and on circular migration in particular. To ensure that statistics are internationally comparable, future guidance could address ways of bridging these differences through common standards and practices.

7.5.   Technical specifications and breakdowns

149.   In order to be internationally comparable, it is necessary that countries release statistical data on circular migration in a standardized way. A set of recommended tables would be helpful in guiding the countries to deliver circular migration data as useful as possible. The work on the design of recommended international tables on circular migration will require as well:

   a. To clarify the distinction between stocks and flows in circular migration data, as well as the possibilities offered by data pooled over the period of reference.

   b. To identify the relevant variables against which data on circular migration should be broken down.

References

Agunias, D. R. and K. Newland (2007). Circular Migration and Development: Trends, Policy Routes, and Ways Forward. MPI Policy Brief, Washington: Migration Policy Institute (April). Available at http://www.migrationpolicy.org/research/circular-migration-and-development-trends-policy-routes-and-ways-forward.

Bustamante, J. A. (2002). Migración Internacional y Derechos Humanos. Serie Doctrina Juridica, No. 94. Instituto de Investigatciones Juridicas. Available from: http://biblio.juridicas.unam.mx/libros/1/296/1.pdf

Constant, A. F. and K. F. Zimmermann (2007). Circular migration: counts of exits and years away from the host country. IZA Discussion Papers, No. 2999. Bonn, Germany: The Institute for the Study of Labour (IZA). Available from: http://www.econstor.eu/bitstream/10419/34633/1/545572290.pdf

Constant, A. F., O. Nottmeyer and K. F. Zimmermann (2012).The Economics of Circular Migration. Discussion Paper Series, No. 6940. Bonn, Germany: The Institute for the Study of Labour (IZA). Available from: http://www.iza.org/MigrationHandbook/03_Constant-Nottmeyer_Zimmermann_The_Economics_of_Circular_Migration

Council of the European Union (2007): Press release No. 15966/07, 2838th Council meeting, Justice and Home Affairs, 6-7 December. Available from: https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/jha/97498.pdf

European Commission (2007): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on circular migration and mobility partnerships between the European Union and third countries. COM(2007) 248 final. Brussels. Available from: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52007DC0248

European Parliament/Council of the European Union (2014): Directive 2014/36/EU of 26 February 2014 on the conditions of entry and stay of third-country nationals for the purpose of employment as seasonal workers. Available from: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32014L0036

European Migration Network (2011): Temporary and Circular Migration: empirical evidence, current policy practice and future options in EU Member States. Publications Office of the European Union: Luxembourg. Available from: http://ec.europa.eu/dgs/home-affairs/what-we-do/networks/european_migration_network/reports/docs/emn-studies/circular-migration/0a_emn_synthesis_report_temporary__circular_migration_final_sept_2011_en.pdf

Fargues, P. (2008): Circular Migration: Is it relevant for the south and east of the Mediterranean? CARIM Analytic and Synthetic Notes 2008/40. San Domenico di Fiesole: European University Institute/Robert Schuman Centre for Advanced Studies. Available from: http://apps.eui.eu/Personal/fargues/Documents/CARIM_AS&N_2008_40.pdf

Global Commission on International Migration (2005): Migration in an interconnected world: New directions for action. Report of the Global Commission on International Migration. Geneva.

Global Forum on Migration and Development (2007): Report of the first meeting of the Global Forum on Migration and Development, Belgium, July 9-11, 2007. Brussels.

_____ (2008). Workshop on Creating Development Benefits through Circular Migration, Mauritius, September 2008. Available from: https://www.gfmd.org/files/documents/gfmd_manila08_contribution_to_rt2-1_workshop_mauritius_2008_en.pdf

Global Migration Group (GMG) (2010). Mainstreaming Migration into Development Planning: A handbook for policy-makers and practitioners. Available from http://publications.iom.int/system/files/pdf/gmg2010.pdf

International Organization for Migration (2011). International Migration Law N. 25 – Glossary on Migration. Available from http://publications.iom.int/books/international-migration-law-ndeg25-glossary-migration

_____ (2013). Towards the 2013 high-level dialogue on international migration and development: International and regional labour mobility and its impact on development. Background paper. Available from http://publications.iom.int/books/towards-2013-high-level-dialogue-international-migration-and-development

_____ (2015) Reaping development benefits of circular migration in Bosnia and Herzegovina. Draft proposal for a mechanism and guidelines for gathering data to monitor circular migration and its impact on development.

Newland, K. (2009): Circular Migration and Human Development. Human Development Research Paper 2009/42. United Nations Development Programme. Available at http://hdr.undp.org/sites/default/files/hdrp_2009_42.pdf

O'Neil, K. (2003). Discussion on migration and development: Using remittances and circular migration as drivers of development. Summary Report. Migration Policy Institute. Available from: http://www.migrationpolicy.org/research/discussion-migration-and-development-using-remittances-and-circular-migration-drivers

OECD (2008). International Migration Outlook 2008, OECD Publishing. Available from: http://www.oecd.org/els/mig/internationalmigrationoutlook2008.htm

Posel, D. and C. Marx (2013). Circular Migration: A View from Destination Households in Two Urban Informal Settlements in South Africa. *Development Studies*, Vol. 49, Issue 6.

Schneider, J. and B. Parusel (2015). Circular Migration between Fact and Fiction – Evidence from Germany. European Journal of Migration and Law, Vol. 17, Issue 2-3, 184-209.

Statens offentliga utredningar (2010): Cirkulär migration och utveckling – kartläggning av cirkulära rörelsemönster och diskussion om hur migrationens utvecklingspotential kan främjas. Delbetänkande av Kommittén för cirkulär migration och utveckling Stockholm: SOU 2010:40. Available from: http://www.regeringen.se/contentassets/e5804b0336934bd7bda9920c4e8bff6e/cirkular-migration-och-utveckling-sou-201040

Statens offentliga utredningar (2011): Cirkulär migration och utveckling – förslag och framåtblick. Slutbetänkande av Kommittén för cirkulär migration och utveckling. Stockholm: SOU 2011: 28. Available from: http://data.riksdagen.se/fil/63903D07-AAF7-4C91-880B-0518CC99CA33

Triandafyllidou, A. (2010): Towards a Better Understanding of Circular Migration. METOIKOS Concept Paper. San Domenico di Fiesole: European University Institute/Robert Schuman Centre for Advanced Studies. Available from: http://cadmus.eui.eu/bitstream/handle/1814/19716/METOIKOSConceptPaper1July2010.pdf?sequence=1&isAllowed=y

United Nations (1998). Recommendations on Statistics of International Migration, Statistical Papers Series M, No. 58, Rev. 1. United Nations Department of Economic and Social Affairs (UNDESA), Statistics Division, New York. Available from: http://unstats.un.org/unsd/publication/SeriesM/SeriesM_58rev1e.pdf

United Nations Economic Commission for Europe (2012). Report of the UNECE Task Force on analysis of international migration estimates using different length of stay definitions. Available from http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.10/2012/WP_15_Poulain_01.pdf

United Nations Economic Commission for Europe (2013). Considerations for further work in migration statistics. Document for the third meeting of the 2012/2013 Bureau of the Conference of European Statisticians. ECE/CES/BUR/2013/FEB/15. Available at http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/bur/2013/15-further_work_in_Migration_statistics.pdf.

Vadean, F. P. and M. Piracha (2009). Circular migration or permanent return: what determines different forms of migration ? IZA Discussion Paper No. 4287. Available from: http://anon-ftp.iza.org/dp4287.pdf

Wickramasekara P., (2011). Circular migration : a triple win or a dead end? International

Labour Office, Bureau for Workers' Activities (ACTRAV). Geneva, ILO (GURN discussion paper; no.15)

Zelinsky, Wilbur (1971). The Hypothesis of the Mobility transition. *Geographical Review*, vol. 61, No. 2 (April).