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SELECTED METHODS TO IMPROVE EMIGRATION ESTIMATES

GUIDELINES ON THE USE AND DISSEMINATION OF DATA ON INTERNATIONAL IMMIGRATION TO FACILITATE THEIR USE TO IMPROVE EMIGRATION DATA OF SENDING COUNTRIES

Submitted by UNECE/Eurostat Task Force on Measuring Emigration Using Immigration Data

I. INTRODUCTION

1. International migration relates to a change of place of residence from one country to another. It consists of persons who leave a country in order to reside in another country. This movement affects the population of two countries and should be recorded twice, once as immigration in the receiving country and once as emigration in the sending country. However, there's a certain asymmetry between data availability on immigration and emigration, for two main reasons:

- a) Departures tend to be less well recorded than arrivals as most governments are reluctant or unable to closely monitor the exit of persons from their territory, especially if the emigrants are national rather than foreign citizens. Moreover, people do not have much incentive to notify the authorities of their departure as there are no benefits to be gained;
- b) Persons leaving the country are difficult to be counted from a statistical point of view because of their absence. This applies to both flow and stock measurements. Censuses and sample surveys, which collect information on resident population, have obvious difficulties in counting absent persons, especially when no member of the household is living in the country of origin anymore.

2. Because of these limitations, these guidelines explore the possibility of compensating the weaknesses of emigration data in the sending country by using existing immigration data in the receiving country. Countries usually have some immigration data, derived from administrative sources (population registers, aliens registers, registers of permits of stay, or data from border cards) or from population-based data collections, such as population censuses or household sample surveys. Immigration data collected by receiving countries may have some limitations, due to definitional, coverage or accuracy problems but, despite of these problems, immigration statistics are generally considered more reliable as compared to emigration statistics for a given country. This does not mean that for a given flow between two countries, the immigration figure from the receiving country is systematically more reliable than the emigration figure provided by the sending country. Nevertheless, it seems reasonable to conclude that for most countries, immigration statistics from receiving countries are a promising potential source of statistics on their emigration – either to estimate missing data or to improve existing figures.

3. The first objective of these guidelines is to provide guidance to those countries considering improving their emigration data by using immigration data of receiving countries. For this reason, different information needs for emigration data are analysed and indications are given to properly use other countries' immigration data. Secondly, attention of countries producing immigration data is drawn to the fact that countries of emigration are an important user of their data; therefore, when producing immigration data, countries should pay attention to data collection, processing and dissemination so that their data can better fit also the information needs of such users. Thirdly, some suggestions are given to international organizations working in the field of data collection on international migration. Collection and dissemination of statistical data on international migration are usually centered on immigration, while some additional efforts could be made to better meet the information needs of emigration countries. For example, immigration data of countries could be collated and disseminated also in terms of countries of origin.

II. DIFFERENT NEEDS FOR EMIGRATION DATA AND VARIOUS TYPOLOGIES OF EMIGRANTS

4. Different types of migrants may be identified according to specific characteristics of migrating people. The following categories are particularly relevant for analytical and policy purposes since they often correspond to specific information needs. Moreover, from a statistical point of view, such typologies are significant because coverage and accuracy of available statistical sources is typically different for the various categories. In particular the following broad categories of migrants can be identified:

- a) nationals and non-nationals (foreigners), on the basis of citizenship
- b) native-born and foreign-born, on the basis of country of birth
- c) long-term and short-term migrants, on the basis of duration of stay abroad (i.e. long-term = one year and more, short-term = more than 3 months and less than one year)
- d) regular and irregular migrants, on the basis of their legal status regarding entry and stay in the host country

5. By using these classification criteria, various groups of international migrants can be established, which correspond to different information needs. In particular, looking at international migration from the perspective of countries of origin, there is a wide range of purposes for which emigration data can be used. Individual countries will have different uses for such data depending on their specific needs to know about and understand emigration processes.

6. Major areas of interest may include:

a) Population estimates/complete national demographic accounts

Emigration has demographic effects and is therefore a significant factor in national demographic accounts. Measuring annual levels of emigration as well as knowledge of emigrants' main demographic characteristics such as age and sex becomes crucial for accurate and reliable population estimates within a country's demographic accounting system. The importance of emigration data to produce population estimates is especially high whenever a country displays significant outflows. This may occur in a variety of cases, e.g. if the country is strongly integrated into the global economy, if it belongs to a supranational union with a free movement regime or if it experiences periods of economic hardship.

Typologies of emigrants for which information is needed: long-term emigrants.

b) Emigration of country's immigrants

Return migration, i.e. the (voluntary or involuntary) movement of immigrants back to their countries of origin or habitual place of residence, constitutes a steadily rising proportion of emigration for many countries. Moreover, for an ever-increasing number of individuals international migration is not a permanent move. Many immigrants either frequently return to their countries of origin (circular or repeat migration) or use the initial host country as a stepping stone to another one (transit or onward migration). The question of who stays and for how long is important because it can have a major impact on the net addition made to a host country's population by immigration. It also affects, via the selective nature of the process, the quality of the immigrant stock and touches issues such as immigrant retention, adjustment or integration. Having emigration data may facilitate the design or the evaluation of a country's immigration policy with respect to the retention of immigrants (non-nationals and foreign-born nationals).

Typologies of emigrants for which information is needed: long-term emigrants, by citizenship and/or country of birth.

c) Information on outflows of nationals and on nationals residing abroad (expatriates)

In a context of increasingly connected labor markets and social networks, it is important to have information on those nationals leaving the country. However, given the increased freedom of movement for nationals, this component of migration outflows is more and more difficult to capture.

Globalization has led to a renewed interest in diaspora or transnational communities, i.e. ethnic or national groups settled permanently in countries other than where they were born.

Countries are naturally interested in having information about their nationals residing abroad. Issues of citizenship, nationality and identity necessitate some knowledge of emigrant populations as does the increasing awareness of the impact of migrant remittances on the economy of the sending country.

Many countries today do not have a precise picture of the countries of residence of their expatriates, the exact magnitudes of persons who have left or the characteristics of their citizens living abroad (e.g. duration of stay abroad, level of qualification, occupation or branch of industry).

Typologies of emigrants for which information is needed: national emigrants, by duration of stay.

d) Information on specific groups of emigrants (e.g. highly skilled workers)

Globalization has increased the mobility of human capital and high skills individuals as knowledge is becoming an integral part of the global economy. The out-migration of educated and skilled individuals with extensive work experience represents a shrinkage of the sending country's qualified human resource base. Concern about this "brain drain" and the loss of economic potential which could result from it requires detailed information about the emigration of trained and educated individuals and the flows of highly skilled human capital.

Typologies of emigrants for which information is needed: national emigrants, by occupation and educational attainment.

e) Short-term emigration

Thanks to the development of formal and informal networks of communication, international migration is often of very short-term nature, due to seasonal periods of work or for short-term work projects/assignments or because of legal restrictions to longer-term stays. Short-term emigration can play an important role for many countries and economies but, given its nature, is even more difficult to capture from a statistical point of view since it does not involve a change in the place of usual residence.

Typologies of emigrants for which information is needed: short-term emigrants, by citizenship

III. NATIONAL DATA SOURCES ON EMIGRATION

7. Generally, international migrants are difficult to count in their country of origin because of their absence. Registration systems and population-based data collections have more difficulties to cover emigration than immigration, and many countries report difficulties related to the collection of data on emigrants. There are countries which do not collect this information at all. But even for countries with fairly reliable migration statistics, emigration continues to be one of the most difficult components to collect data for.

8. If available at all emigration data come from a variety of sources not always specially designed for migration-related analyses. They are collected by different bodies and often support the country's own national legislative, policy and administrative imperatives. The major types of these sources may be summarized as follows:

- a) population registration systems including centralized population registers and local population registers which record individuals' exits in relation to the national territory;
- b) other administrative (special-purpose) registers or databases related to foreigners, such as aliens registers, permits of stay registers or registers of asylum seekers
- c) passenger surveys and border card systems which collect information on cross-border movements;
- d) household sample surveys which include questions pertaining to emigrants even though emigration is not their main focus;
- e) special emigration surveys, such as household surveys of emigrants, which obtain information by indirect means, e.g. through inquiries in the dwellings were emigrants used to live;
- f) population censuses which include specific questions on residents temporarily abroad and/or previous residents that have left the country to live abroad;
- g) registers of nationals living abroad.

9 Each data source is in some way limited with respect to its coverage of emigration (*see Table "Pros and cons of data sources on emigration" in Annex*). These limitations are the result of the multiple purposes these data sources have been designed to serve. Most data on emigrants are derived from administrative records and therefore strongly reflect the policy approach of the country towards migration.

10. Data on outflows are highly variable and their accuracy depends upon how complete the coverage of emigration is. In general, fewer sources are available on stocks of emigrants.

11. Administrative data sources covering the whole population represent an important source of statistics on emigration flows. Continuous recording and identification of emigration is based on certain criteria and is linked to the deletion from the register. In residence permit systems emigration may equate with the expiry of the permit. However, there are limitations regarding coverage of outflows in administrative registers, which are primarily linked to the self-declaration of international movements and the often non-compulsory compliance of individuals to deregister.

12. Among other data sources border collection has a greater likelihood of capturing more emigrants than registers. In practice, however, border statistics rarely provide the best measures of outflows as people are subject to different degrees of control depending on their citizenship, mode of transport and port of exit.

13. Household-based surveys and censuses have problems in collecting reliable statistics on outflows since they cannot fully cover the movements of persons and/or households that have left the country by the time the inquiry is carried out. This also applies to special surveys which address questions to a household member on how many usual members of the household have left or are currently abroad.

IV. USING OTHER COUNTRIES' IMMIGRATION DATA TO IMPROVE EMIGRATION DATA

A. Main sources on immigration and their relevance to improve emigration data

15. In broad terms, the availability of migration data varies according to statistical sources available in each country. Table 1 depicts the general situation of data availability according to source typology¹. Emigration data are less often available than immigration data and countries may consider the option to use immigration data from receiving countries to produce or improve emigration data.

Table 1: Availability of migration data by source type

	Flow data		Stock data	
	Immigration	Emigration	Immigration	Emigration
Population Census	x		x	
Household sample survey	x		x	
Border sample survey	x	x		
Population register	x	x	x	
Permits of stay	x		x	
Aliens register	x	x	x	
Passenger cards	x	x		

16. The various statistical sources on immigration are reviewed below with the view to consider their relevance when being used by sending countries to produce or improve emigration estimates.

1. Population censuses

17. The census provides a snapshot of the population of a country at a given point in time. The census in principle enumerates the total resident population, thus allowing to deriving statistics on all population groups relevant for international migration, irrespective of their

¹ This represents a general overview. Certain sources, under specific conditions, may be able to provide more statistical data on emigration or immigration, such as e.g. emigration modules that are sometimes included in population censuses or household surveys, thus providing some data on emigration.

citizenship, country of birth or even legal status. The population census has many important features for the measurement of immigration:

- a) In most countries, it is one of the few sources where all the three concepts of migrant origin (country of citizenship, of birth, of previous residence) are used simultaneously. It is therefore possible to assess the differences between these different concepts.
- b) It collects information at individual level, thus allowing to cross-classify migration characteristics with other variables such as age, sex, employment, education, and household composition.
- c) Important information is made available for small population groups and small geographical areas.

18. Given its nature, the population census is particularly important for stock figures, since information on country of birth and country of citizenship are almost universally collected. Additional and important information on population groups relevant to international migration can be collected if questions on country of birth of parents, citizenship at birth and/or multiple citizenships are also included in the census form.

19. The population census can also provide data on migratory inflows, when questions on 'place of residence one year before the census' or 'period of arrival in the country' are asked. While this information can be profitably used to get statistics on recent inflows and on individual characteristics of immigrants, there are some limitations for the census as source of inflow data:

- a) It is carried out at long intervals, so that data are rapidly out of date.
- b) It only counts immigrants that are still living in the country at the time of the census, thus excluding those immigrants that have emigrated before the census date.
- c) It is focused on migrants rather than migration events, i.e. it cannot supply full coverage of migration events.

2. Household sample surveys

20. Similarly to the population census, household sample surveys generally cover the total resident population, thus including all population groups relevant to international migration. Regularly scheduled household sample surveys, such as the Labor Force Survey (LFS), can be profitably used to derive general information on immigration, in terms of both flows and stocks. When questions such as 'place of residence one year before' or 'year of arrival in the country' are included, estimates of migration inflows can be derived, while important information on stocks of immigrants can be obtained if questions on 'country of birth', 'citizenship', 'citizenship at birth' or 'country of birth of parents' are included.

21. Sample frame, sample design and sample size of household surveys pose specific challenges to the measurement of immigration:

- a) The sample frame should be regularly updated to be able to include newly arrived immigrants and exclude persons who left the country; this is particularly crucial to get reliable estimates of immigration flows.
- b) The sample design should make sure that population sub-groups and areas particularly relevant for international migration are well taken into account in the sample.
- c) The sample size should be big enough to ensure statistical significance of estimates, particularly when estimates for specific migration flows and stocks must be calculated, as the share of migrants in the total population is generally relatively small.

22. The knowledge of the host country language can also play an important role in determining the response rate of those immigrants who are not proficient enough in the language.

3. Border sample surveys

23. Border sample surveys are carried out on people crossing the borders of a country, in both directions, and they can provide important information on migration when questions are included on the origin/destination of the traveler and the expected duration of stay in the destination country². In principle, the population universe embraces both nationals and non-nationals, irrespective of their legal status.

24. The focus of this kind of survey is on international passengers and it is usually carried out to collect information not only on migration but also on travelers moving for other reasons such as tourism or business. Since migrants are a small share of international passengers, an adequate size of the sample becomes crucial in order to get reliable estimates of migratory flows. Importantly, this type of survey can be carried out only where there are a limited and well-known number of border crossings, while countries with long land borders would have problems in conducting such surveys. Moreover, it can only measure people's intentions to change their country of residence for 12 months or more. Thus, what is measured is the self-stated intention that can differ from the subsequent reality, leading to bias results in the estimates of migration flows.

4. Population registers

25. Population registers record administrative information on the resident population at individual level. Both nationals and non-nationals with a valid permit of stay are included in the population universe. Registers should in principle keep track of all vital events and changes of residence, thus ensuring a continuous update of individual records. Registers are dependent on the timely and correct registration of the population. Sometimes registering with the local or government authorities is compulsory in order to receive some social services, such as education

² An example of this survey is the International Passenger Survey (IPS) carried out in the United Kingdom on a random sample of passengers entering and leaving the country by air, sea or the Channel Tunnel.

and health care. Two important factors play a decisive role in determining the accuracy of migration statistics derived from population registers:

- a) Incentives to register and deregister: Depending on the legal and administrative framework, migrants have different incentives to report their moves. Typically, long-term immigrants have an interest to register with public authorities while persons staying for shorter periods tend to under report; on the other hand, those leaving the country usually have little incentive to deregister;
- b) Operational effectiveness of administrative registers: The treatment of information by public authorities can be done at different degrees of effectiveness, also depending on the legal framework, human resources, organizational capacity and IT infrastructures. These features can have a heavy impact on derived statistics.

5. Permits of stay registers

26. The authority issuing permits of stay to foreigners can usually provide important information on flows and stocks of non-nationals legally entering and/or residing in the country. The population universe is the legal non-national population.

27. Though covering only a subset of immigration to a country, this source can provide important information, especially on inflows. When using data derived from this source, due attention should be paid to existing regulations on entry and stay in the country and their temporal evolution, since this would heavily impact on derived statistical data. Problems may also derive from non-arrivals, early departures or double counts due to issuance of multiple permits.

6. Aliens registers

28. In some countries a dedicated register is held of all foreigners living in the country. This kind of register can be a sub-product of the population register and it is usually fed by collecting information on individuals and relevant events from different administrative sources, such as permits of stay, and civil registrations. This source is able to provide accurate and detailed information on non-nationals with a valid permit of stay.

29. Naturalizations can have an important impact on the measurement of the stock of persons with foreign origin. Persons acquiring the citizenship of the host country are deleted from this register and the number of nationals of foreign countries would be underestimated from this source³.

7. Passenger cards

30. Passenger cards (or border cards) systems collect data on all departures and arrivals through international borders. Both nationals and non-nationals are included in the population

³ This is true when naturalized persons are given the possibility to retain the previous citizenship, i.e. when dual citizenship is allowed.

universe. These systems are able to provide good migration data when the great majority of border crossings take place through official entry points. Moreover, it is important that the administrative system is able to distinguish international migrants from all other international travelers. This is usually possible if the system is able to match individual registrations at successive time points and at different locations. Systems of this nature can effectively work under specific geographical conditions and with extremely developed administrative systems.

B. Critical issues of using receiving countries' immigration data

31. As previously stated, for most countries it is more difficult to collect information about emigration than immigration. Using receiving countries' immigration data could be helpful to sending countries to acquire useful information on the population that has left or is leaving the country. However, when using immigration data to estimate emigration, some important "critical factors" arise. In particular, the following aspects should be considered when using a specific source of immigration data from a receiving country:

- a) coverage of the source
- b) definition of international migrant/migration
- c) data accuracy
- d) availability of origin-destination data
- e) different time references, also due to status adjustments of migrants
- f) availability of metadata

a. Coverage of the source

32. The population universe covered by statistical sources can be different across countries: resident population, present population, legal population, international passengers, etc. Each universe covers a different set of people, with an impact on the possible inclusion or exclusion of specific sub-groups of migrants.

33. The reference population of the immigration data source has to be carefully considered and compared with the population of interest from the emigration country's standpoint. Important aspects to verify refer to:

- legal status of migrants, to understand whether the source covers both regular and irregular international migrations;
- existence of international agreements on free movement, to understand whether such agreements are in place and evaluate their possible impact, especially on administrative sources like permits of stay or border cards.

b. Definition of international migrant/migration

34. Within its reference population, each source identifies those persons and/or events that will be considered respectively as international migrants or international migrations. According to the UN Recommendations on Statistics of International Migration (UN, 1998), a migrant is defined as a person who changes his or her country of usual residence. In these Recommendations no indication was given as to the duration threshold to determine the place of

usual residence, but an important distinction was made between long-term migrants (persons moving to another country for at least 12 months) and short-term migrants (persons moving, for selected reasons, for a period of at least 3 but less than 12 months). The CES Recommendations for the 2010 Censuses of Population and Housing indicate that the place of usual residence is the place where the person resides (or intends to reside) for at least 12 months (UNECE, 2006). Countries are not always in the position to conform to international standards and can therefore use different time durations to define the place of usual residence. Other characteristics such as the legal status of migrants can be taken into account by countries to determine the place of usual residence of a migrant. It is necessary to check the adopted definition by the receiving country in order to make informed use of its immigration data.

35. When examining definitions used by various sources it is also important to understand whether the actual or the intended duration of residence is used: it is typical of data collected at the borders, such as border cards or border sample surveys, to refer to intended duration, while population-based data collections, such as the census or household sample surveys, tend to adopt actual duration of stay (as for example when the question ‘Where were you living one year ago?’ is used). Since the self-stated intention can differ from actual period of stay, there can be some bias in the estimates of migration flows.

c. Data accuracy

36. Understanding how accurate are the data is indispensable to make proper use of them, especially when using data produced by another country⁴. It is very difficult to make an objective assessment about the accuracy of data produced by a certain source. However, some indication on accuracy can be derived from the capacity of the source to show steadfast and consistent data, with long and coherent historical series. The comparison with other sources can also provide relevant information.

37. In the case of administrative sources, the operational effectiveness of administrative processes is crucial to determine the reliability of derived data, as well as factors linked to incentives or disincentives of individuals to notify their arrival or departure to responsible authorities.

38. When using sample surveys, particular attention should be paid to issues related to design, frame and size of the sample, which are particularly relevant when estimates on specific flows or stock data are needed (*see paragraph 21*).

d. Availability of origin-destination data

39. When using immigration data to estimate emigration flows, it would be necessary to have them classified by country of previous residence. Sometimes this information is not available and proxy variables such as country of citizenship or country of birth are used. This option has to be carefully considered: experience shows that proxy variables can produce acceptable results

⁴ Accuracy is the degree to which the information correctly describes the phenomena it was designed to measure and it is usually characterized in terms of bias (systematic error) and variance (random error) (Statistics Canada, 2002)

for the first immigration wave between two countries, when country of previous residence, of citizenship and of birth coincide for the majority of migrants. This becomes less and less true when phenomena of transit, circular or return migration take place.

40. In the case of stock data, the focus of emigration countries is primarily on country of citizenship and country of birth. However, both variables tend to underestimate the population group, which is of interest to emigration countries, because of naturalizations and birth of descendants in destination countries. Wherever possible, population groups identified by the use of additional variables such as country of birth of parents, citizenship at birth and multiple citizenships should also be considered.

e. Different time references, also due to status adjustments of migrants

41. Recording and/or counting of migration events can take place at different moments in origin and destination country. This has to be taken into account when using immigration data from receiving countries. This can be particularly relevant when, due to administrative or legal reasons, the immigration is registered with a considerable delay, as for example in the case of status adjustment of migrants, which can occur as a consequence of individual applications or be linked to general regularization programs.

f. Availability of metadata

42. Given the differences in reference population, definitions, accuracy, availability of information on individuals and time references, it is imperative that, before using immigration data from receiving countries, all relevant information is gathered and analyzed. A wealth of information on statistical sources on migration is usually available at both national and international level.

C. Matching information needs on emigration with data sources from receiving countries

43. Depending on migration patterns, availability and reliability of statistical sources and other constraints like data accessibility and processing costs, sending countries wishing to use immigration data of receiving countries could aim at different sources of data according to their specific needs. Table 2 shows what data sources of receiving countries would best fit specific information needs of sending countries. This review has a general value and indications about sources must be carefully assessed on a case-by-case basis, taking into account quality standards of available sources.

Table 2: Data sources on immigration of receiving countries fitting information needs on emigration of sending countries

Data sources of receiving countries	Data needs of sending countries						
	Total emigration estimates	Emigration of country's immigrants	Emigration of country's nationals		Emigration of highly skilled		Short-term emigration
	<i>Flows</i>	<i>Flows</i>	<i>Flows</i>	<i>Stocks</i>	<i>Flows</i>	<i>Stocks</i>	<i>Flows</i>
Population Census				+		+	
Household sample survey	+	+	+	+		+	+
Border sample survey	+	+	+				+
Population register	+	+	+	+			
Permits of stay			+	+	+		+
Aliens register			+	+			
Passenger cards	+	+	+				+

- a. Total emigration estimates: when needing data on migration outflows to regularly update population figures, the focus is on the total number of yearly emigrants. Sources such as population registers and household sample surveys in the receiving country should be considered first, provided that they exist and meet good quality standards. Also border data collections, such as border sample surveys and border cards, can provide useful data, where available.
- b. Emigration of a country's immigrants: the same sources considered for total emigration estimates could also be considered when the focus is primarily on emigration of a country's immigrants, provided that information is also available on variables such as citizenship and/or country of birth to identify the background of emigrants.
- c. Emigration of a country's nationals: different sources can be used respectively for flow and stock data. For the former, all the various types of sources could be profitably used, with the exception of the census, which is carried out at long intervals. The census, together with population, aliens and permits of stay registers and household sample surveys, become very important sources to gather information on the stocks of emigrants with national background that are living abroad.
- d. Brain-drain or emigration of highly skilled individuals: collection of data on this subgroup of national emigrants requires that information on educational attainment and/or reason for migration is collected. Some information on flows may be derived from

permits of stay registers, while data on the stocks can be derived from population censuses and household sample surveys.

- e. Short-term emigration: border data collections can give some information on these migrants, which are more difficult to be captured by other sources given that there is no change of place of usual residence. Permits of stay registers can also provide some information on the legal component of this migratory flow.

V. IMPROVING AVAILABILITY, QUALITY AND ACCESSIBILITY OF DATA ON INTERNATIONAL IMMIGRATION TO IMPROVE EMIGRATION ESTIMATES OF SENDING COUNTRIES

44. To satisfy a wide range of needs for emigration data (Chapter II), the 'ideal' statistics should be comprehensive, covering all groups of emigrants (nationals and foreigners) and all types of migration (long-term and short-term, legal and illegal). They should be timely (data available on annual basis), provide detailed information in terms of origin and destination, characterize emigrants by their 'migration background' (primarily country of birth and citizenship) and provide information on demographic and socioeconomic characteristics of individuals (age group, sex, educational attainment, occupation). Currently, countries' capacity of producing this 'ideal' set of data differs significantly, resulting in existence of national emigration data gaps. In efforts to rectify this situation, countries may wish to take advantage of the receiving countries' different data sources and fill some of their own data gaps on emigration.

45. The wider availability of migration statistics at destination countries, as compared to sending ones, suggests that the former should be more widely used by the latter. Until today, and with few exceptions, national official migration statistics are only those internally produced in each state. Countries, however, could consider moving beyond relying only on national sources of data for their emigration statistics and start using also other countries' immigration statistics when such data can provide wide and complete coverage of the emigration streams leaving their own country. The use of immigration data of other countries to improve emigration estimates can take several forms, as for example comparing data for benchmark purposes, or using other countries' data to adjust/correct emigration estimates, or to use other countries' immigration data as the estimate of emigration from the country. In any case, there is a clear need of having a strong exchange of data and metadata between countries, at the short term, and the need of a harmonized system of migration statistics, at the medium and long-term. The sharing of data between countries also means important economies of scale, since scarce resources maybe allocated to a more solid system of national migration statistics.

46. Despite these considerations, important obstacles remain to a regular exchange and use of international immigration data for sending countries' national purposes. First, immigration data are very specific to national context and the variety of sources (census, sample surveys, administrative records etc.) as well as the diversity of definitions and frameworks pose important difficulties to the direct use of such data by sending countries. Secondly, data on immigration is not always easily accessible by interested users, especially when detailed information is necessary as in the case of the statistical figures needed by sending countries. Thirdly, data collection activities carried out at the international level usually focus on information needs on

immigration. This means that international migration data made available by international organizations do not fully meet information needs on emigration.

47. In order to facilitate the use of international immigration data to meet information needs on emigration by sending countries, some improvements should be made. These concern

- a) data production by national statistical systems, respectively on immigration flows and stocks of immigrants;
- b) data accessibility by national statistical systems;
- c) data collection and dissemination by international organizations.

1. Data production

48. The improvement of data on international immigration is crucial in every situation, regardless of the importance of using immigration data to estimate emigration. Having good immigration data, at the national level, is a current priority in national statistical systems. The current increase of population mobility also suggests that attention cannot be restrained to statistics on foreigners, the usual priority in receiving countries, but also to every group of mobile persons (nationals and non-nationals alike).

49. Even though at first glance no country has vested interests in helping to ameliorate another country's emigration statistics, it is nevertheless recommended that countries should make increased efforts to produce and disseminate their immigration statistics also taking into account information needs on emigration of sending countries. If several countries do so, the availability of data on departures of residents from their own territory will increase, with beneficial effects for all.

50. The main focus of the following paragraphs is to provide suggestions to countries when producing and disseminating immigration data: these data can better fit the information needs of emigration countries even with relatively small improvements in the way such data are collected, processed and disseminated. The goal is to review existing sources and data production and make suggestions for improvements by taking the perspective of emigration countries. The pre-requirement for an informed use of existing immigration data is that complete and comprehensive metadata should be easily accessible and understandable.

A. Immigration flows

51. The following actions may be undertaken by countries to improve availability and relevance of data on international immigration flows, according to the various available sources:

- Administrative sources: Statistical authorities usually have limited possibilities to modify definitions and/or coverage of administrative data since they are usually the by-product of administrative processes fixed by competent authorities. However, statistical authorities should explore whether all available information is used to produce regular statistics. For example, it should be checked whether information on country of previous residence and/or country of birth is fully utilized, since the focus is often on country of citizenship.
- Sample household surveys: This source represents a mostly untapped resource to produce data on international immigration in a number of countries. In particular, the question on place/country of residence one year before or on the year/month of arrival in the current

place/country of residence could be used to produce important immigration data. These questions are often included in major household surveys, such as the Labor Force Survey, but they are not systematically used to produce data on immigration flows. In principle, these topics could ensure the production of immigration data with the following advantages:

- good coverage of data, since household surveys usually cover the resident population, irrespective of the legal status or the citizenship of respondents;
- good wealth of individual information on respondents, primarily on demographic and social variables, which would fit many information needs;
- internationally comparable data, produced in accordance with international recommendations on the definition of the place of usual residence.

The production of good quality data on immigration flows based on household surveys depends on a number of critical factors, such as:

- Sample frame: In order to have a good coverage of newly arrived residents the sample frame needs to be updated on a regular basis.
- Sample design: The inclusion of particular geographical areas and/or population groups where immigrants have a higher concentration should be ensured.
- Sample size: The sample must be big enough to have a sufficient number of immigration events included and this can be a critical issue in those countries where inflows are not so large or where the sample is of limited size. In an international or regional perspective, it could be possible to overcome estimation problems due to reduced sample size by aggregating data from several national samples.

The extensive use of national household surveys as a vehicle for collecting immigration flow data is strongly recommended. Regular household surveys are a versatile source also because dedicated modules can be used, periodically, to produce more detailed data while using a consistent framework.

- Population census: This source is not particularly suited for producing data on immigration flows since figures on inflows are needed on a continuous basis while censuses are usually taken at intervals of ten or five years. However, the inclusion of information on the previous place of residence would allow the production of important benchmark data. The importance of these data would increase as long as specific population groups, such as irregular migrants, are covered by the census and internationally recommended definitions, such as on usual residence, are adopted.

It is recommended that the core topic 'Ever resided abroad and year of arrival in the country' of the CES Recommendations for the 2010 Censuses of Population and Housing is included in future population censuses. The inclusion of this topic will provide valuable information on international immigration flows to the country, especially for the years immediately before the census, and on duration of residence of international migrants living in the host country.

B. Stocks of immigrants

52. The following actions may be undertaken by countries to improve availability and relevance of data on stocks of immigrants, according to the various available sources:

- Administrative sources: Statistical authorities should explore whether all available information is used to produce regular stock data. For example, it should be checked whether all relevant information on the foreign background of all individuals (nationals and non-nationals alike) is fully utilized. In addition to the current citizenship persons with foreign background can be identified through variables such as citizenship at birth and the country of birth of parents.
- Sample household surveys: They must include some basic questions on the foreign background of all respondents (such as country of birth of parents, citizenship at birth, multiple citizenships), both in major household surveys, such as the Labor Force Survey, and other surveys. Again, the extensive use of national household surveys as a vehicle for a collection of data on immigrants and their characteristics is strongly recommended. The development of a 'standard migration module', either in the form of a dedicated survey or as an additional module to an existing household survey, is a means to achieve this goal. Questions recommended for a core topic for the 2010 round of censuses should be asked consistently across different surveys.

The production of good quality data on immigrant stocks based on household surveys depends on a number of critical factors as outlined in paragraph 51.

- Population census: This source is particularly suited for producing data on stocks of immigrants. The CES Recommendations for the 2010 Censuses of Population and Housing should be followed as closely as possible since they allow a better use of the census to produce internationally comparable migration data. As a consequence, the importance of these data would increase when recommended topics are included and recommended definitions, such as on usual residence, are adopted.

Various population groups relevant to international migration can be identified by applying analytical classifications based on the two core topics 'country of birth' and 'citizenship' and the non-core topic 'country of birth of parents'. The joint use of the two core topics allows the identification of four population groups. Based on the two core topics and 'country of birth of parents' eight population groups can be derived.

One or more questions on citizenship acquisition (e.g. citizenship at birth or year of acquisition of citizenship) allow identifying naturalized persons and providing information on the foreign background of nationals.

2. Data accessibility

53. It is recommended that countries undertake efforts to make their immigration data accessible for use by other countries so they will facilitate the measurement of emigration for sending countries. All data, therefore, should be made available by also considering the sending country perspective. To facilitate the use by another country, these data should be compiled by using standardized tables.

54. When exchanged, the standardized tables will lead to improvement of information on departures/emigration of residents of all countries participating in such an exchange. In addition to augmenting emigration statistics available in sending countries, the migration data exchange

could be viewed as a useful step in the process of achieving an overall comparability of data on international migration across countries.

55. It is recommended that at least 7 standard tables are compiled and considered for the data exchanges (see Annex, Tables S1 to S7). In each case the choice of the most appropriate statistical sources would be left to the country tabulating the data. In the following description, 'partner country' refers to a country with which a table is exchanged.

Table 1: "Residence one year ago in the partner country, by place of birth"

Table 2: "Residence one year ago in the partner country, by citizenship"

These tables present the number of persons who live in the country at a particular date but had their place of usual residence in the partner country one year before, broken down by sex. In Table 1, this group of persons is classified according to place of birth (host country, partner country or other country). In the second table, this group of persons is classified according to country of citizenship (host country, partner country or other country). The source of these tables is typically a household sample survey, such as the Labour Force Survey, or the population census.

Table 3: "Immigrants by country of previous residence"

Table 4: "Immigrants by country of citizenship"

Table 5: "Immigrants by country of birth"

These tables present the number of immigrants in a given calendar year who originate from the partner country, broken down by sex. In each of these three tables the origins are defined using a different concept: country of previous usual residence (Table 3), country of citizenship (Table 4), and country of birth (Table 5). An additional table could be provided by cross-classifying country of previous usual residence with country of citizenship. The source of these tables is usually represented by administrative registration systems such as population registers, permits of stay or aliens registers.

Table 6: "Population by country of birth and citizenship"

This table presents data on population stocks at a particular date by country of birth (host country, partner country or third country), which is additionally broken down by country of citizenship. The breakdown of citizenship is limited to three broad groups: host country, partner country and third country. In the case of citizens of the host country, a distinction is made between citizens by birth and naturalized citizens. An additional table could be built by distinguishing, among national citizens, between those who have only national citizenship and those who have dual citizenship, i.e. those having both national citizenship and citizenship of the partner country. This table could be particularly useful when information on citizenship acquisition is not available. These tables could be derived from the population census or, in some cases, from population register.

Table 7: "Population by country of birth and country of birth of parents"

This table presents data on population stocks at a particular date by country of birth (host country, partner country or third country) and country of birth of parents. Four possible combinations of country of birth of parents are shown in order to identify immigrants and descendants of immigrants (both parents born in partner country, only one parent born in partner country, no parent born in partner country but at least one parent born in host country, both parents born in third countries). The source of these tables could be either the population census or the population registers.

3. Data collection and dissemination by international organizations

59. The need for a coordinated exchange of immigration data requires a stronger international cooperation among NSOs than exists today. Such cooperation should be encouraged with the overreaching goal to facilitate and encourage data exchanges between different countries. International organizations can play an important role in this.

60. Data collection activities carried out at the international level usually focus on immigration. This means that migration data made available by international organizations do not fully meet information needs on emigration. In order to remedy this, it is recommended that existing data collections by international organizations, be adapted or expanded by incorporating information needs on emigration. These efforts may include:

- regular and timely dissemination of national standardized tables on immigration flows and immigrant stocks (*see paragraph 55*) in a uniform manner;
- compilation of synoptic tables presenting data not only by country of immigration but also by country of emigration;
- providing all the information necessary to evaluate the quality, comparability and completeness of the statistical information.

An increased focus on information needs on emigration might encourage individual countries to include other countries' statistical data and metadata as a reliable source of information to improve their own emigration statistics. Multiple data sources, including those of other countries, should be more frequently used in order to better understand and estimate migration across international borders.

61. Besides the need to reinforce the immigration data exchange among different countries using certain standards, additional efforts must be made at the conceptual level. In this regard, work must continue to improve international migration statistics and to harmonize statistical concepts and definitions. National immigration data can be used to produce emigration statistics in the sending country only if similar concepts are applied everywhere.

VI. REFERENCES

Statistics Canada, 2002, Statistics Canada's Quality Assurance Framework, Catalogue no. 12-586-XIE.

UN, 1998, *Recommendations on Statistics of International Migration. Revision 1*, Statistical Papers, Series M, No. 58, Rev.1.

UNECE, 2006, *Conference of European Statisticians Recommendations for the 2010 Censuses of Population and Housing*, ECE/CES/STAT/NONE/2006/4.

Annexes:

- Table "Pros and cons of data sources on emigration"
- proposed standard tables for data exchange

Table "Pros and cons of data sources on emigration"

Source of data	Coverage	Main individual variables on emigrants	Pros	Cons
Population register	outflows of legally resident population	a) date of deregistration to go abroad (as proxy for date of departure) b) age, sex, citizenship, (sometimes country of birth) c) country of destination/next residence	exhaustive coverage of legally resident population and registered changes of residence (for both nationals and non-nationals) continuous data collection main demographic characteristics and variables are available data available annually or more often detailed data and data on small population groups are available	statistical data collection is not a priority: definitions, coverage and availability depend on legislation and administrative rules (coverage depends partly also on administrative/financial incentives to deregister) illegal/undocumented residents are not covered number of socio-economic variables limited in reference to the related legislation registration may be considerably delayed compared to the time of actual migration event (e.g. when only permanent residents are registered) period of intended absence is usually not registered

Source of data	Coverage	Main individual variables on emigrants	Pros	Cons
<p>Administrative register related to foreigners (e.g. permits of stay, aliens register)</p>	<p>outflows of non-national population with a valid permit of stay</p>	<p>a) date of deregistration to go abroad or date of expiry of permit (as proxy for date of departure)</p> <p>b) age, sex, citizenship, (sometimes country of birth)</p> <p>c) country of destination/next residence (not in permits of stay register)</p>	<p>exhaustive coverage of legally resident non-national population (or certain subsets thereof)</p> <p>continuous data collection</p> <p>main demographic characteristics and variables are available</p> <p>data available annually or more often</p> <p>detailed data and data on small population groups are available</p>	<p>statistical data collection is not a priority: definitions, coverage and availability depend on legislation and administrative rules</p> <p>only certain subsets of non-national population may be covered (e.g. permanent residents)</p> <p>naturalized citizens and illegal/undocumented residents are not covered</p> <p>number of socio-economic variables limited in reference to the related legislation</p> <p>registration may be considerably delayed compared to the time of actual migration event (e.g. when only permanent residents are registered)</p> <p>period of intended absence is usually not registered</p>

Source of data	Coverage	Main individual variables on emigrants	Pros	Cons
Passenger survey/border card system	outflows of nationals and non-nationals leaving the country through an official border post	a) date of exit b) age, sex, citizenship c) country of destination d) intended duration of stay abroad e) reason for departure (migration motives)	continuous or regular and fairly exhaustive data collection (border card system) covers departures irrespective of people's legal status main demographic characteristics and variables are available detailed data and data on small population groups are available (border card system)	only covers departures through official points of exit difficulties to distinguish between emigrants and travelers/tourists; emigrants are usually a minority of all people crossing a given border people are subject to different degrees of control depending on their citizenship, mode of transport and port of exit not suited for every country (e.g. with long land borders) collects only people's intention which may differ from subsequent reality possible problems with sample size, frame and design, and statistical significance of results (passenger survey) data on small population groups are not available (passenger survey)

Source of data	Coverage	Main individual variables on emigrants	Pros	Cons
Household sample survey	<p>outflows of former household members who have their usual place of residence abroad at the time of survey</p> <p>outflows of temporarily absent household members (short-term emigrants)</p>	<p>a) year/date of emigration or departure</p> <p>b) age, sex, citizenship</p> <p>c) country of residence abroad</p> <p>d) reason for absence (migration motive)</p>	<p>high frequency of data collection (annually or quarterly)</p> <p>large representative sample of the total population</p> <p>large number of demographic and socio-economic variables are available</p> <p>possibility to include special 'migration modules'</p>	<p>less reliable source for migratory flows as migration related questions are not the main focus of survey</p> <p>based on proxy interviews with people who stayed behind (cannot adequately cover persons who are not present at time of survey anymore); information received may be unreliable or out of date</p> <p>possible problems with sample size, frame and design, and statistical significance of results; limited number of households with emigrants in the sample and exclusion of emigrants without household members in the country</p> <p>data on small population groups are not available</p>

Source of data	Coverage	Main individual variables on emigrants	Pros	Cons
Special emigration survey	outflows of persons (in general: nationals) with household members/relatives/neighbors who stayed behind	a) year/date of emigration or departure b) age, sex, citizenship c) country of residence abroad d) actual and/or intended duration of stay abroad e) reason for departure (migration motives)	large representative sample of target population large number of demographic and socio-economic variables are available	exclusion of emigrants without household members in the country data available at long intervals and for certain periods of time only based on proxy interviews with people who stayed behind (cannot fully cover persons who are not present anymore at time of survey); information received may be unreliable or out of date possible problems with sample size, frame and design, and statistical significance of results
Population census	outflows of persons usually resident but temporarily absent at the time of the census(short-term emigrants) outflows of former household members who have their usual place of residence abroad at the time of census (if a special 'emigration module' is used)	a) basic socio-demographic characteristics (sex, age, level of education etc.) if special questions on emigration: b) year/date of emigration (departure) c) country of residence abroad d) actual or/and intended duration of stay abroad e) reason for absence/departure (migration motives)	exhaustive coverage of usual resident population at a given date main demographic characteristics and variables are available detailed data and data on small population groups are available	generally not a very reliable source for emigration; cannot adequately cover people who are not present anymore at time of census carried out at long intervals only; data rapidly out of date

Source of data	Coverage	Main individual variables on emigrants	Pros	Cons
Register of nationals abroad	stocks of nationals living abroad	a) date of registration (as proxy of date of departure) b) age, sex c) country of residence	fairly exhaustive coverage of nationals living abroad continuous data collection data available annually or more often data on small population groups are available	statistical data collection is not a priority: definitions, coverage and availability depend on legislation and administrative rules not necessarily exhaustive; based on self-declaration of emigrants; does not cover nationals who avoid registration changes in the population stock due to deaths, onward migration, naturalizations etc. are not necessarily taken into account

Standardized tables for immigration data compilation and exchange

Table S1: Population of your country by sex, place of birth and place of residence one year before data collection

	Residence one year before - Country X					Residence one year before - Your Country				Residence one year before - Other			
	Place of Birth					Place of Birth				Place of Birth			
	Total	Total	Country X	Your Country	All Other Areas	Total	Country X	Your Country	All Other Areas	Total	Country X	Your Country	All Other Areas
Total													
Male													
Female													

Table S2: Population of your country by sex, citizenship and place of residence one year before data collection

	Residence one year before - Country X					Residence one year before - Your Country				Residence one year before - Other			
	Citizenship					Citizenship				Citizenship			
	Total	Total	Country X	Your Country	All Other Areas	Total	Country X	Your Country	All Other Areas	Total	Country X	Your Country	All Other Areas
Total													
Male													
Female													

**Table S3: Persons who immigrated to your country from country X
(where X is country of previous residence) by sex**

	Immigrants whose country of previous residence=X
Total	
Male	
Female	

**Table S4: Persons who immigrated to your country
who were citizens of country X by sex**

	Immigrants whose country of citizenship=X
Total	
Male	
Female	

**Table S5: Persons who immigrated to your country who were born
in country X by sex**

	Immigrants whose country of birth=X
Total	
Male	
Female	

Table S6: Population by sex and country of birth and citizenship

Country of birth	Citizenship	Total	Male	Female
PERSONS BORN IN COUNTRY X	Citizens of country X			
	Citizens of your country (<i>nationals</i>) <i>thereof:</i> - citizens of your country since birth - citizens of country X at birth who became citizens of your country following naturalization			
	Persons with other citizenship			
	TOTAL PERSONS BORN IN COUNTRY X			
PERSONS BORN IN YOUR COUNTRY (native-born)	Citizens of country X			
	Citizens of your country (<i>nationals</i>) <i>thereof:</i> - citizens of your country since birth - citizens of country X at birth who became citizens of your country following naturalization			
	Persons with other citizenship			
	TOTAL PERSONS BORN IN YOUR COUNTRY			
PERSONS BORN IN OTHER COUNTRIES	Citizens of country X			
	Citizens of your country (<i>nationals</i>) <i>thereof:</i> - citizens of your country since birth - citizens of country X at birth who became citizens of your country following naturalization			
	Persons with other citizenship			
	TOTAL PERSONS BORN IN OTHER COUNTRIES			
TOTAL POPULATION	Citizens of country X			
	Citizens of your country (<i>nationals</i>) <i>thereof:</i> - citizens of your country since birth - citizens of country X at birth who became citizens of your country following naturalization			
	Persons with other citizenship			

Table S7: Population by sex and country of birth and country of birth of parents

Country of birth	Country of birth of parents	Total	Male	Female
Persons born in country X	Both parents born in country X			
	Only one parent born in country X			
	No parent born in country X and at least one parent born in your country			
	Both parents born in other countries			
PERSONS BORN IN YOUR COUNTRY (native-born)	Both parents born in country X			
	Only one parent born in country X			
	No parent born in country X and at least one parent born in your country			
	Both parents born in other countries			
PERSONS BORN IN OTHER COUNTRIES	Both parents born in country X			
	Only one parent born in country X			
	No parent born in country X and at least one parent born in your country			
	Both parents born in other countries			
TOTAL POPULATION	Both parents born in country X			
	Only one parent born in country X			
	No parent born in country X and at least one parent born in your country			
	Both parents born in other countries			
