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ESTIMATING IRREGULAR MIGRATION : METHODOLOGY PILOT TEST IN BOTSWANA, KENYA & TUNISIA

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1. INTRODUCTION

1.1. What is irregular migration?

Irregular migration differs fundamentally from regular migration. According to the International Organization on Migration (IOM), irregular migration is “Movement that takes place outside the regulatory norms of the sending, transit and receiving countries. There is no clear or universally accepted definition of irregular migration. From the perspective of destination countries, it is entry, stay or work in a country without the necessary authorization or documents required under immigration regulations. From the perspective of the sending country, the irregularity is for example seen in cases in which a person crosses an international boundary without a valid passport or travel document or does not fulfil the administrative requirements for leaving the country. There is, however, a tendency to restrict the use of the term “illegal migration” to cases of smuggling of migrants and trafficking in persons”.

An older ILO definition argues that irregular migrants find themselves “during their journey, on arrival or during their period of residence and employment [in] conditions contravening relevant international multilateral or bilateral instruments or agreements, or national laws or regulations”. (Moulier Boutang, Garson and Silberman, 1986)

While the IOM definition focuses only on the manner of entry into a country, the ILO definition stresses all aspects of irregularity: entry, residence in the host country and the undertaking of an irregular work situation. This definition of irregular migration seems to be very broad, including the most important phenomena of migrant smuggling and trafficking of persons - but it neglects one important aspect - persons that migrate without legal papers or permission.

Despite often being used interchangeably, “irregular migration” and “illicit/illegal” as well as “undocumented” migration do not have the same connotation. It has been repeatedly argued that the terms illicit and illegal should be avoided in this context (see e.g. Koser, 2005). It is pointed out, for example, that “many irregular migrants commit administrative, rather than criminal, offences and so it is misleading to use the term ‘illegal’ which has associations with criminality” (Provera, 2015, p.7). Koser adds that not only does the term ‘illegal’ imply criminality but the term could also be understood to deny the humanity of the migrant and jeopardise their asylum claims (Koser, 2005).

Both under the UN Transnational Organised Crime Convention, as with Human Rights law, it needs to be stressed that it is not the migrant who is illegal, since ‘No human being is illegal’, but it is the services of the smuggler that fall into illegality. The issue is that these terms often try to define a situation that is actually fluid and multidimensional.

Defining migration is difficult because of its complexity; the concept of “irregular migration” tries to capture both migrant *flows* – the number of people moving across borders irregularly - and *stocks* – the number of people in irregular situations already within those borders. Capturing stock and flow is important as it allows the focus on all parts of a migrant's journey, the movement and the stay in a transit or destination country, as well as the possible move from irregularity to authorised stay.

For the purposes of this paper, irregular migration shall be defined as the stocks and flows of persons - taking into consideration their gender and age - irregularly moving across borders - whether they are moving alone under their own reconnaissance, using a smuggler's services or are

being trafficked for purposes of exploitation. All definitions of irregular migration contain three components: inflows, outflows and stocks.

Where do asylum seekers and refugees fit in?

Strictly speaking, asylum seekers and refugees change from irregularity to regularity in many cases. At the time of their border crossing if this is attempted without valid papers and state permission, it would count as irregular physical inflow. However, once they are recognised as either asylum seekers in need of international protection (“someone whose request for sanctuary has yet to be processed.” UNHCR) or as refugees (i.e. their request has been granted) they represent a status-related outflow and move into a situation of regularity.

1.2. Why estimate irregular migration in Africa?

Irregular migration is a hidden phenomenon, but it is one which has a significant bearing on the ability of countries to manage their commitment to their citizens, to those residing within their borders, and to achieve development, governance and security objectives. Migrants have rights, and that acknowledging irregular migration means also acknowledging the responsibilities as a duty bearer to uphold the rights of migrants regular and irregular. Discussions across the course of this exercise, with African leaders and policymakers, have consistently emphasised that the issue of migration is always one with political overtones and it is important that this effort contributes to a better informed, evidence-based public dialogue and policy making on the subject.

An accurate estimate of irregular migration, particularly on a regular, longitudinal basis, can help states to understand what is driving people into irregularity, and to develop evidence-based, targeted programmes to address the challenge.

Africa is the continent with one of the most significant irregular migration flows, both within the continent and trans continentally. In recent years, there has been growing evidence that African migrants on the move irregularly are being exposed to insecurity, persecution and risks to life.

The Pan-African Statistics Programme 2014

The ‘Estimating Irregular Migration in Africa Project’ falls under the ‘Pan-African Statistics Programme 2014’ (PAS). The overall objective of the PAS programme is “to support African integration through better availability and quality statistical information facilitating decision-making and policy monitoring”. The more specific objectives are (i) “improve the production and dissemination of good quality statistics in Africa”; and (ii) “support the AU in strengthening its institutional capacity to provide comparable official statistics needed to underpin the AU integration process and measure African progress towards global goals”. Migration, both regular and irregular, is one of the five priority domains covered by the PAS programme.

The Heads of State and Government of the African Union have identified migration issues as of major concern for African development and integration, dedicating 2019 to ‘The Year of Refugees, Returnees and Internally Displaced Persons’. They have further noted that irregular migration, smuggling of migrants, refugees, trafficking in persons, internally

displaced persons (IDPs) are issues that merit close monitoring. The PAS programme is responding to these concerns by exploring possibilities of engaging African countries with a view to initiate data collection procedures for these topics

1.3. Project aim

The aim of the project as a whole is to support the African Union and its member states in making high-quality, gender and age-disaggregated estimates of irregular migration.

This pilot exercise followed a consultation and literature review phase in 2017-8. In October 2017, PAS International Senior non-Key experts from the Global Initiative against Transnational Organized Crime (GI-TOC) prepared under the PAS programme relevant technical documents for data collection on irregular migration and Associated Protection Risks. A draft final report was provided by GI-TOC. An Expert Group Meeting (EGM) to discuss the draft final report took place from 27 to 29 August 2018, in Addis Ababa, Ethiopia, organised by the African Union Commission (AUC).

The Expert Group members recognised the importance of having a reliable evidence basis upon which national, regional and continental migration policy could be predicated, in line with the AU Migration Policy Framework. Within this context, the Expert Group also agreed to the necessity of measuring irregular migration, and given the lack of a globally recognised methodology, to the merit of attempting to develop a common African Union methodology for measuring irregular migration.

The meeting reviewed and approved the approach, and mandated a next phase that would include pilot exercises in a number of countries, in order to provide guideline to AU in terms of feasibility and methodology to estimate irregular migration in African countries. At the Expert Group meeting, several countries showed interest in implementing the methodology during the pilot phase.

1.4. Project approach

The pilot phase was initiated in January 2019, with the project designed to follow a six-step process in each of the selected pilot countries. Pilot countries were self-nominated, and then selected to reflect a diversity of irregular migration dynamics across the continent.

In the first phase, relevant literature was reviewed for each of the three pilot countries. Each country review covered relevant dynamics of irregular migration, a country repository of other projects focussing on irregular migration, a review of studies trying to estimate irregular migration, as well as a list of potential data sources. At the same time, contact was established to country representatives, introducing the project and project aims. A focal point in each country created to serve as the main counterpart, champion and coordinator for the pilot.

Three pilot countries were selected by the African Union Commission: Botswana, Kenya and Tunisia. The goal with the pilot countries is to attempt to create a credible estimate of irregular migration in the country within the framework of datasets available, without supplementary data collection. The process for establishing an irregular migration estimate in the pilot countries follows six steps:

1. **Data Review and Inception:** this phase involves a review of existing literature and relevant data sets already in the public domain. Contact to the lead focal point from the pilot countries will be established to ensure that mutual expectations of the process and output are understood. – data questionnaire was sent; all relevant documents & report sent to counterparts.

2. **Inception Mission:** this phase introduces the exercise to an inter-departmental working group of representatives from relevant ministries within government, as well as any relevant international organizations and civil society, as per the guidance of the pilot country focal points, and to raise awareness and establish the level of cross-departmental understanding and interest in the estimation exercise. Relevant datasets held by government departments are identified.
3. **Data Collection:** during this phase relevant datasets are gathered, learning and supplementing existing datasets and meeting any necessary analytical capacity deficits, as required. This phase will depend on the availability and quality of the existing data. The expert team will work closely with the national statistical relevant government bodies to develop and model a national estimate of irregular migration.
4. **Modelling:** with the data sets provided by the pilot country, modelling will occur offsite to create a variety of estimates using different methodologies as applicable. The modelling will take place off site, using an expert applied statistician, who will develop a model specific to the countries (and available data). To the extent possible, models between countries aim to be comparable.
5. **Presentation of Models:** the alternative models will be presented to the national working groups via a detailed presentation, where the assumptions and confidence levels can be considered and amended, and assessed against their understanding and perceptions.
6. **Final Methodology and Report Write Up:** once national estimates are developed and agreed upon for all pilot countries, the team will write up their findings of the process and some recommendations for AUSTAT. Recommendations will be made to the African Union Commission on the feasibility, possible model and data requirements for a common African methodology for estimating irregular migration.

It was noted that any estimate created in the pilot phase would be owned by the national governments, who would have exclusive rights to deciding if and how it is shared.

1.5. Project timeline

The initial timeline for the project was six months, starting at the end of September 2019, finalising by the end of March 2020. Due to slow responses by the pilot countries, and acute COVID-19 complications, the deadline was extended for another six months, until the end of September 2020.

Figure 1: Project timeline overview

| PROJECT TIMELINE | | | | | | | | | | | | | |
|------------------|----------|------|---|---|------|---|---|---|---|---|---|---|---|
| | | 2019 | | | 2020 | | | | | | | | |
| | | O | N | D | J | F | M | A | M | J | J | A | S |
| Preparation | Botswana | | | | | | | | | | | | |
| | Tunisia | | | | | | | | | | | | |
| | Kenya | | | | | | | | | | | | |
| Workshop | Botswana | | | | | | | | | | | | |
| | Tunisia | | | | | | | | | | | | |
| | Kenya | | | | | | | | | | | | |
| Data Collection | Botswana | | | | | | | | | | | | |
| | Tunisia | | | | | | | | | | | | |
| | Kenya | | | | | | | | | | | | |
| Modelling | Botswana | | | | | | | | | | | | |
| | Kenya | | | | | | | | | | | | |
| Report Writing | All | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | |
|---------------------------|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Presentation of Estimates | All | | | | | | | | | | | | | | | | | | |
|---------------------------|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

The country desk reviews and preparations for the inception workshop started in October 2019. Country representatives (focal points) were sent a data questionnaire and background materials and were asked to provide a participant list for the inception workshop. After a date was agreed upon, an agenda and location were established, in agreement with the country representatives.

The inception workshops started with Botswana in November 2019, followed by Tunisia in December 2019, and concluded with Kenya in January 2020. The format was similar for each workshop – formal presentations of definitions, concepts, estimation methodologies and data requirements were held by GI staff, followed by a select number of presentations by representatives of the different (data collecting) ministries. During group discussions, the feasibility and relevance (i.e. suitability) of the different estimation methods was considered, given available data and irregular migration dynamics within the country. The workshops lasted one-and-a-half days in Botswana and Kenya, and one day in Tunisia, and were preceded by a meeting with the focal point and in the case of Tunisia, with a group of representatives of the statistics department.

Building on the list of available data established during the workshop, a data request table was sent to the country’s focal points to be distributed among relevant departments. The focal points were asked to forward any relevant data and data collection methodology notes to the GI team. Once the datasets were received by the GI team, they were passed on to the applied statistician for further assessment and, if proven appropriate, used to provide estimates of irregular migration within a given country.

The results of the exercise and recommendations are presented in this report, the final product of the project. Drawing on the experiences of estimating irregular migration in the three pilot countries, the report highlights the requirements to estimating irregular migration in African countries, challenges faced, and ways in which these challenges could be addressed.

2. ESTIMATING IRREGULAR MIGRATION

2.1. Irregular migration

As noted in the introduction, one of the most significant challenges in dealing with irregular migration is the lack of a common and agreed definition. Moreover, the terms often try to define a situation that is actually fluid and multidimensional. Defining migration is difficult because of its complexity; the concept of “irregular migration” tries to capture both migrant *flows* – the number of people moving across borders irregularly - and *stocks* – the number of people in irregular situations already within those borders. Capturing stock and flow is important as it allows to focus on all parts of a migrant's journey, the movement and the stay in a transit or destination country, as well as the possible move from irregularity to authorised stay.

Besides, the term can bring further difficulties due to its proximity to migrant smuggling, human trafficking and other forms of international crime. As highlighted by the African Union in its Migration Policy Framework for Africa and Plan of Action (2018-2030), the evolving security and political situation of the continent has had an impact in the way people migrate, generating in the last decades a mixed flow of migrants that use both legal and irregular pathways for migration hampering the ways to monitor and define the phenomenon.

For the purposes of this exercise, irregular migration was defined as the stocks and flows of persons - taking into consideration their sex and age - irregularly moving across borders - whether they are moving alone under their own reconnaissance, using a smuggler's services or are being trafficked for purposes of exploitation.

All definitions of irregular migration contain three components: inflows, outflows and stocks. The stock of irregular migrants within a country comprises inhabitants without legal residence status. Migrant flows can be categorized in the three ways: demographic, physical and based on change of status.

Figure 2: Types of migrant flow

| Type | Description |
|----------------------|---|
| Demographic inflow | Birth of irregular migrants |
| Demographic outflow | Death of irregular migrants |
| Physical inflow | Movement of migrants into a country |
| Physical outflow | Movement of migrants out of a country |
| Bureaucratic inflow | Change of status from regularity to irregularity |
| Bureaucratic outflow | Change of status from irregularity to regularity. |

2.2. Estimating irregular migration

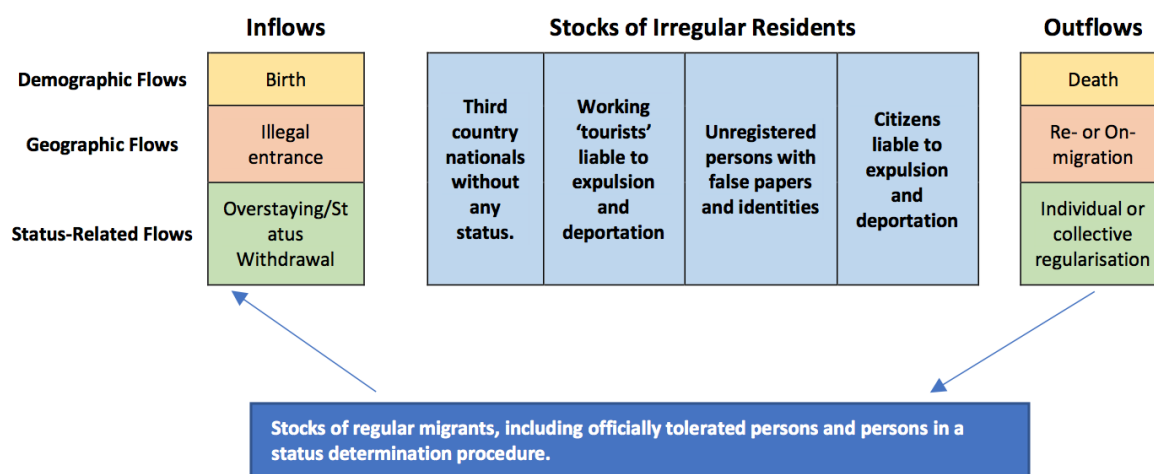
Measuring a complex phenomenon such as irregular migration is inherently difficult. Irregular migration comprises of three different parts - stock, inflow and outflow. For a comprehensive picture

of irregular migration, all three parts need to be measured concurrently. But because it is often not possible, the three parts are often measured independently.

Inflow and outflow are often summarised under the umbrella term “irregular migration flows”. Kraler & Reichel (2001) define irregular migration flows as “events or processes that influence the size and composition of the stock of the irregular migrant population in a particular geographic unit and over a particular period of time”. In the narrowest sense this refers to physical movements such as unlawful entry and emigration of persons (e.g. unrecorded returns, registered voluntary returns and deportations). In the broadest sense this refers to flows such as legal status-related inflows and outflows (e.g. in-: visa overstaying, withdrawal of residence status, rejection of asylum claims; and outflows: regularisation, changes of the legal status of irregular migrants) and flows related to births and deaths (Kraler & Reichel, 2011), all of which, at a minimum, should be disaggregated by sex and age.

Stocks of irregular migrants are defined as “irregular or undocumented residents [that can be] defined as residents without any legal residence status in the country they are residing in, and those whose presence in the territory - if detected - may be subject to termination through an order to leave and/or an expulsion order because of their activities” (Kraler & Reichel, p. 99).

Figure 3: Overview of irregular migration dynamics



Source : based on Kraler & Vogel, 2011

The overall stock is changed by net irregular migration flows. This means that the stock will increase or decrease, subject to changes in all components of irregular migration inflow and outflow.

2.2.1. Estimating flows

To accurately measure the flow of irregular migrants, one can and should attempt to estimate all three components - physical/geographic, demographic and status change - and cover every aspect of the overall net flow into a country.

All available indicators show gaps in knowledge, data gathering and inherent uncertainty. A truly comprehensive account of irregular migration and its flows remains unrealistic. However, by combining and triangulating as many indicators and sources as possible, states can approach the subject with greater confidence and build a more comprehensive picture of the current situation, and

on the basis of which, to craft data-driven and evidence based responses. Data disaggregated by sex and age would be required to underpin gender-responsive policies and programmes.

Estimating flows constitutes a greater challenge than the estimation of stocks. Not only are there different kinds of flows but they also tend to be volatile and differ starkly in time and place. Accordingly, even for states that have invested in data gathering, issues in estimating flows persist.

2.2.2. Estimating stocks

Stocks of irregular migrants - the number of irregular (“undocumented” or “illegal”) residents or migrant workers at a point in time - are easier to estimate than migration flows, which are more volatile. Stock of irregular migrants comprises of: third country nationals without any status, “working tourists” liable to expulsion and deportation, unregistered persons with false papers and identifies, and informally tolerated persons” (CLANDESTINO, Report on methodological issues).

There are two approaches to estimate the stocks of irregular migrants: direct approaches and indirect approaches. Direct approaches attempt to capture the subject of research through a direct count. Indirect approaches do not directly identify individual cases but rather use already existing data to infer information about sub-groups of irregular migrants. A third approach combines the direct and indirect estimation methods, trying to alleviate weaknesses of using either one of the two approaches individually.

Direct approaches can be divided into the (a) multiplier approach, (b) self-identification and (c) surveys. The multiplier approach is one of the most common methods used to estimate an unknown population size. The multiplier approach is fairly straight forward, requiring only two components; if overall stock of irregular migrants is the unknown population, then the multiplier approach first requires identification of a subgroup for which data are available. For stock of irregular migrants, one such subgroup could be the overall number of detected irregular migrants. After the number of detected irregular migrants is known (drawing on existing immigration enforcement data), the unknown number of undetected irregular migrants needs to be estimated. This ‘dark number’ (or unknown) can be estimated by multiplying the known figures (detected irregular migrants) with a so-called ‘multiplier’. The difficulty here lies in finding the most adequate multiplier. Once the ‘dark figure’ (undetected irregular migrants) has been estimated, the overall stock of irregular migrants can easily be derived by adding the two figures - detected irregular migrants and undetected irregular migrants - together. Multiplier methods can be simple, repeat-capture, comparing registers and random effects mixed modelling approaches.

Methods of self-identification rely directly on irregular migrants themselves and, naturally, are merely the count of a small sub-group that comes forward through regularisation programmes. This method is usually used in administrative statistics. Surveys estimate the overall population of irregular migrants, using two distinct sampling techniques - location sampling, where the target population is geographically concentrated, and chain-referral, where the target population is well inter-connected.

Indirect approaches vary starkly but never use an actual count of a sub-group of irregular migrants. *Residual estimation methods*, for instance, compare different available data such as census results and legal immigration figures, or registers depending on the administrative capacities and specificities of a country. *Demographic methods* attempt to use statistical data of regular populations (of a certain age, sex, migration background etc.) to infer knowledge about the irregular population. This way, one can make assumptions about the natural growth of a group based on birth and death rates. Whilst demographic methods do not require the generation of new raw data, in the long term they cannot attend to the volatility of flows influencing the overall stock.

Given the individual strengths and weaknesses of purely direct and indirect approaches, it often makes sense to combine different estimation techniques to have a more statistically stable result.

2.3. Overview of statistical methods and data requirements

Ideally, estimates would capture both, stocks of irregular migrants and flows of irregular migration, using different estimation approaches to triangulate and compare results. However, country-specific dynamics of irregular migration will favour some methods over others, and data availability may limit available estimation options. It is for this reason that a participatory approach is required in the early stages of the pilot exercise, to identify the most appropriate model.

Within this section, we briefly review the possible estimation methods which we refer to later in this report. Please note that this is not intended to be a robust review of all possible estimation methods.

2.3.1. Residual method

The residual method is an indirect method of estimating stocks and flow, and is simply calculated as the difference between two values recorded from different registers on the same target population:

$$A = B - C$$

In the case of the **stock** of irregular foreign-born individuals, **A**, this could be the difference between total foreign-born individuals, **B**, and the number of legal foreign-born individuals, **C**.

In the case of estimating the flow of irregular foreign-born individuals, the residual method could be used to estimate overstayers as the difference between the number of expired work permits and the number of individuals who have left the country prior to their permit expiring.

2.3.2. Multiplier method

The multiplier method requires two independent sources of data to estimate population size. Suppose **M** denotes a count of individuals from the target population and let **P** be a representative estimate of the proportion of the target population. Then the estimated target population size, **N**, is given by:

$$N = M / P$$

Various methods can be used to obtain the proportion, **P**. An alternative data source, if it exists nationally can be used as a proxy, interviews can be carried out with relevant stakeholders or experts when no additional data can be obtained, to create a credible estimate. For example, an alternative data source, such as law enforcement data/crime statistics, can be used to calculate **P**. Calculating the proportion of irregular migrants to total population in the crime data, the ratio (**P**) can then be used to obtain an estimate of irregular migrants in the total population (assuming that the ratio obtained from the crime statistics is representative/there is no bias). If no alternative data sources are available, expert opinion can be used to obtain **P**. For example, in the case of estimating irregular flows/border crossings, law enforcement experts could be asked to provide their opinion on the proportion of missed border crossings to the number of people captured at the border (**P**). Clearly such approaches can induce bias in the resulting estimate. It is important to report uncertainty in such estimates, and standard errors of the multiplier estimate can be obtained from standard formulae based upon distributional assumptions for **P** and **M**.

2.3.3. Multiplier systems estimation

Multiple systems estimation requires data at the individual level. Individuals may be sampled multiple times through observation from different sources, often referred to as lists in an epidemiological setting. Possible examples of lists include medical clinical databases, work permit offices, national police databases, labour offices, etc. A record can then be made for each individual of the lists that they were recorded on. The model fitted to the data uses the overlap of individuals recorded on different lists to estimate the size of the unobserved part of the population, the parameter of interest. The underlying model is log-linear, which can accommodate dependencies between individuals appearing across lists. Multiple systems estimation is related to capture-recapture modelling, which is more commonly used for estimating the size of ecological populations.

3. PILOT COUNTRY ANALYSIS – BOTSWANA

3.1. Workshop

A 1.5 day workshop was held in Gaborone, Botswana, 21-22 November 2019. Amongst the participants were government representatives from Statistics Botswana, Botswana Prisons, Ministry of Employment, Ministry of Health & Wellness, Botswana Police, Ministry of Nationality, Immigration & Gender Affairs, Civil National Registration, and the Ministry of Environment, Wildlife and Tourism. Further, representatives from the Botswana Council of Non-Governmental Organisations (BOCONGO), IOM, Botswana Red Cross, and from UNHCR were also present.

After the two introductory presentations outlining definition of concepts, data requirements for estimating irregular migration, and different estimation approaches, the discussion moved on to focus on the specifics of the Botswanan context. To understand the drivers and dynamics of irregular migration in Botswana, and to discuss their knowledge, experience and relevant datasets, presentations were held by five representatives from the Ministry of Nationality, Immigration & Gender Affairs, the Botswanan National Police, the ministry of Employment, Labour Productivity & Skills Development, the UNHCR, and the Botswana Red Cross Society (BRCS).

The presentations were then followed by a collective exercise to agree upon the key drivers of irregular migration in Botswana and the most relevant data available to measure them, which lasted for the remaining two half days of the workshop.

3.2. Drivers of irregular migration and data availability

The discussion was split into two parts: drivers and data availability of flows of irregular migrants in Botswana, and drivers & data availability of stocks of irregular migrants in Botswana.

3.2.1. Flows of irregular migrants

The participants identified 3 major flows driving irregular migration in Botswana – irregular border crossings (geographic flow), permit overstays (bureaucratic flow), permit violations (bureaucratic flow) - and one minor flow – births into irregularity and deaths of irregular migrants (demographic flow). For each of the flows relevant datasets and estimation methodology were identified.

Irregular Border Crossings (geographic flow)

Estimating irregular border crossings commonly relies on border apprehension data. The national police representative present at the workshop confirmed that these data are available and collected on a weekly basis. The police maintain a number of ‘base camps’ along the borders where migrants

are known to frequently traffic and do a limited number of foot patrols to apprehend migrants between those posts.

Permit Overstayers (bureaucratic flow)

The number of permit overstayers can be calculated on the basis of comprehensive permit data. According to the representative from the Ministry of Employment, Labour Productivity & Skills Development, data on permits issued, permits cancelled and departures of those on various visa types is all maintained and available in a joint database with the Ministry of Nationality, Immigration & Gender Affairs. The data are available on a monthly basis.

Permit Violations (bureaucratic flow)

Permit violations include cases where a permit is misused (e.g. work with residence permit but not work permit), fraudulent (doctored permits) or counterfeit (fake permits). In the case of Botswana, two ways in which the scale of permit misuse could be estimated were identified.

(a) Using disaggregated data of regular ‘sweeps’ conducted by the police, to identify people working irregularly. Disaggregated data are kept but potential biases can exist as these are targeted at sectors and geographic areas where large proportions of irregular migrants are known to cluster. However, the data can be used for their absolute numbers but finding a suitable multiplier for those that are missing by the sweeps is more challenging.

(b) Using data of ‘labour inspections’ conducted by the Ministry of Employment, Labour Productivity & Skills Development. The labour inspections are done as spot checks, and are conducted both geographically and by sector, potentially avoiding biases seen in the ‘sweeps’ data. Their purposes is more general, targeted at identifying a range of workplace violations. During the workshop it was considered whether sectoral models could be created that would estimate the percentage of permit violations by sector, which would allow an estimate model to be build up of the economy as a whole, using estimates of total people employed (legally and illegally) in that sector. This could then be compared to the absolute apprehensions number to estimate a reasonable multiplier.

Births into Irregularity and Deaths of Irregular Migrants (demographic flows)

Data on birth to foreign mothers are available from the Ministry of Health, but this does not necessarily determine the legal status of the parents. It was unclear whether the Department of Social Protection holds data that might identify mothers as undocumented. Deaths of irregular migrants was not discussed.

3.2.2. Stocks of irregular migrants

One way stocks of irregular migrants can be calculated, is by subtracting the number of authorised citizens from the total number of foreign born population (residual method). The difference between the two is considered to be the number of irregular migrants in the country. Botswana holds data on both.

The foreign born population is captured in the census data. The last census in Botswana was conducted in 2011, but periodic ‘demographic surveys’ have been released to update the demographic trends presented in the census, with the latest demographic survey being published in 2017. Participants of the workshop expressed a high degree of confidence in the quality and comprehensiveness of the census data. Given the relatively small population and territory of the country, their assessment was that few would have evaded the survey, and necessary steps are taken in the census through confirmation questions, to give a strong and credible estimate of all who reside, both regularly and irregularly.

The number of authorised citizens can be calculated based on data on legal permit holders. A high degree of confidence was expressed by the participants in the quality of the data on legal permit holders in Botswana, which is effectively maintained and frequently updated.

The feasibility of alternative methods were considered to provide comparative estimates, but existing data were deemed insufficiently reliable. One such method is the ‘multiplier’ method, which has been used effectively in two European countries. There, relative data on legal and illegal populations was extrapolated from other sources of population data, namely, criminal justice data (see previous discussion 2.2 estimation approaches). In the context of Botswana, criminal justice data was not considered to be sufficiently robust, and it was agreed that a number of biases would make the data less reliable.

3.3. Data collection and quality

Following the discussions at the workshop, a data request table was sent to the focal point within the country, to be distributed to the relevant departments. Based on the discussions at the workshop, data that were available and deemed to be sufficiently comprehensive were requested for the past ten years.

Figure 4: Overview of data requested from Botswana

| | Component | | Data | Source |
|-------------------------|------------------------------------|--------------------------|---------------------------------|--|
| DATA FOR STOCK ESTIMATE | Total foreign born population | | Census data | <i>Botswana Demographic Survey</i> |
| | Authorised foreign-born population | | Residence & work permits issued | <i>Ministry of Employment, Labour Productivity & Skills Development</i> |
| | Geographic | Border Crossings | Apprehensions | <i>Botswana Police Service Ministry of Nationality, Immigration & Gender Affairs</i> |
| DATA FOR FLOW ESTIMATES | Demographic | Births into Irregularity | Registered births | <i>Ministry of Health Ministry of Local Government & Rural Affairs (Department of Social Protection)</i> |
| | Bureaucratic | Permit Overstay | Permits issued | <i>Ministry of Employment, Labour Productivity & Skills Development</i> |
| | | | Exits | <i>Ministry of Nationality, Immigration & Gender Affairs</i> |
| | | Permit violations | Labour inspections | <i>Ministry of Employment, Labour Productivity & Skills Development</i> |
| | | | Apprehensions | <i>Botswana Police Service Ministry of Nationality, Immigration & Gender Affairs</i> |

In the following section, we analyse each of the data sets provided, and then discuss whether they can be used to obtain an estimate of stock and flows from the available data.

3.3.1. Work permit and labour inspection data

The data received provides detailed information on work permit applications, labour inspections and workplace spot checks.

Work permit data was available annually from a period from 2015-19. The data includes the number of applications brought forward, and detailed information on applications received and success or failure of applications. For 2015, the data is provided by area, but not month, while for 2016-19 the data is provided by month but not area. The variables collected are consistent across this time period.

Labour inspections data are available annually from 2015-19. They include the total number of inspections, and breakdowns by infraction types such as failure to insure workers, and types of industry such as retail. Industry types are consistent across years, while infraction types are consistent for 2015-18, but with two additional categories in 2019.

Spot check data was provided for 2015 and 2017-19. The data describes the total number of checks, numbers of infractions, and the total number of companies and employees prosecuted. The data are broken down by industry, with the industry types being consistent with the labour inspection data. The variables and industry types are consistent across all years.

3.3.2. Work permit applications

Total numbers of work permit applications have increased over time, but with seasonal variations. The number of rejected applications has decreased over time, with 3,097 rejections in 2015, 2,971 rejections in 2016, 2,203 rejections in 2017, and 1,778 rejections in 2018. Data for 2019 are reported only to the end of October, with 1,491 by that date.

Figure 5: Total numbers of work permit applications, approvals and rejections from January 2016 - October 2019

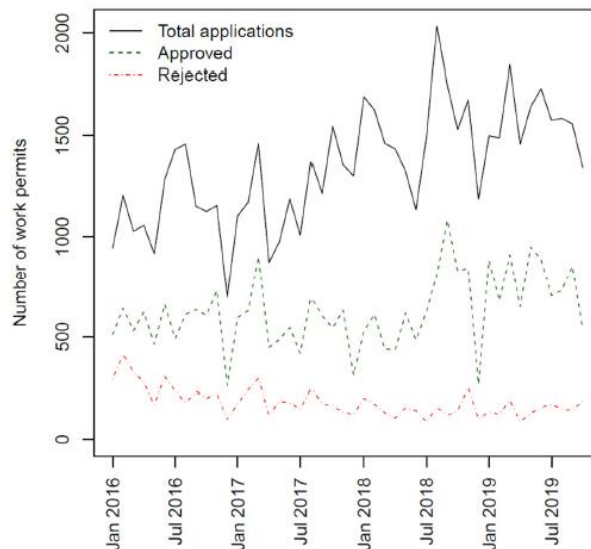
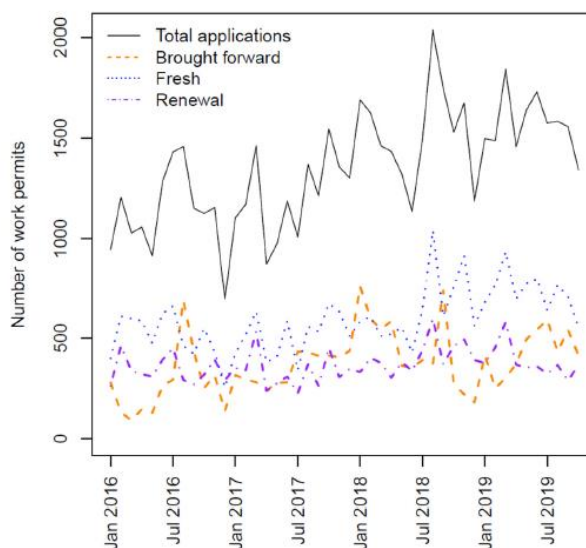


Figure 6: Numbers of new, renewal or brought-forward work permit applications between January 2016 and October 2019

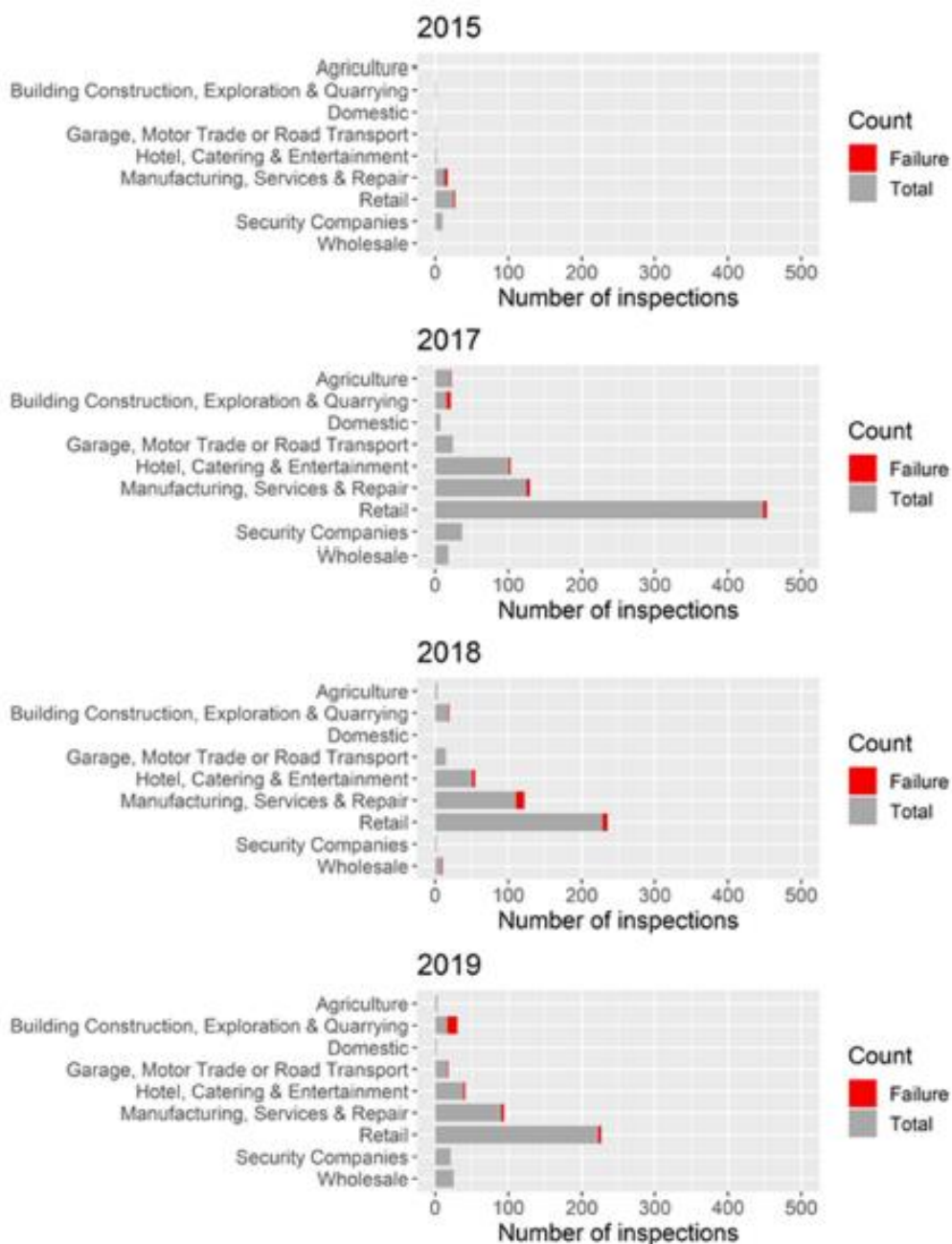


In estimating bureaucratic inflow and outflow, work permit data could be used in estimating numbers of overstayers. However, the existing data on numbers of issued permits would need to be complemented by information on numbers of cancelled permits and numbers of departures for different visa types and **this information is currently not available to us**. Further, we presume that work permits are issued for varying durations and therefore **we have no information on whether awarded work permits have expired or are still active**.

3.3.3. Spot check data

Spot check inspections are conducted when a stakeholder directly reports a particular contravention. These figures are therefore likely to be biased and unrepresentative of workplaces as a whole. Data were provided for 2015 and 2017-19, with the companies visited categorized into nine trades. The numbers of spot checks per year is highly variable, with only 52 checks conducted in 2015, but 797 in 2017.

Figure 7: Total numbers of inspections and failed inspections by industry type in 2015, 2017-19



The data are reported by inspection and so while the numbers of inspections where staff were “working without a permit” are available, there is no information on the number of individuals concerned. The numbers of spot checks conducted by year and proportion of failures of spot checks are displayed above.

Information on spot checks where working without a permit was observed are provided in Figure 8. Only a small proportion of these checks found this infringement, except in 2015 when the total number of spot checks were low.

Figure 8: The total number of spot checks conducted in 2015 and 2017-19 and the number, P, and percentage, %, of spot checks with a recorded contravention of working without a permit

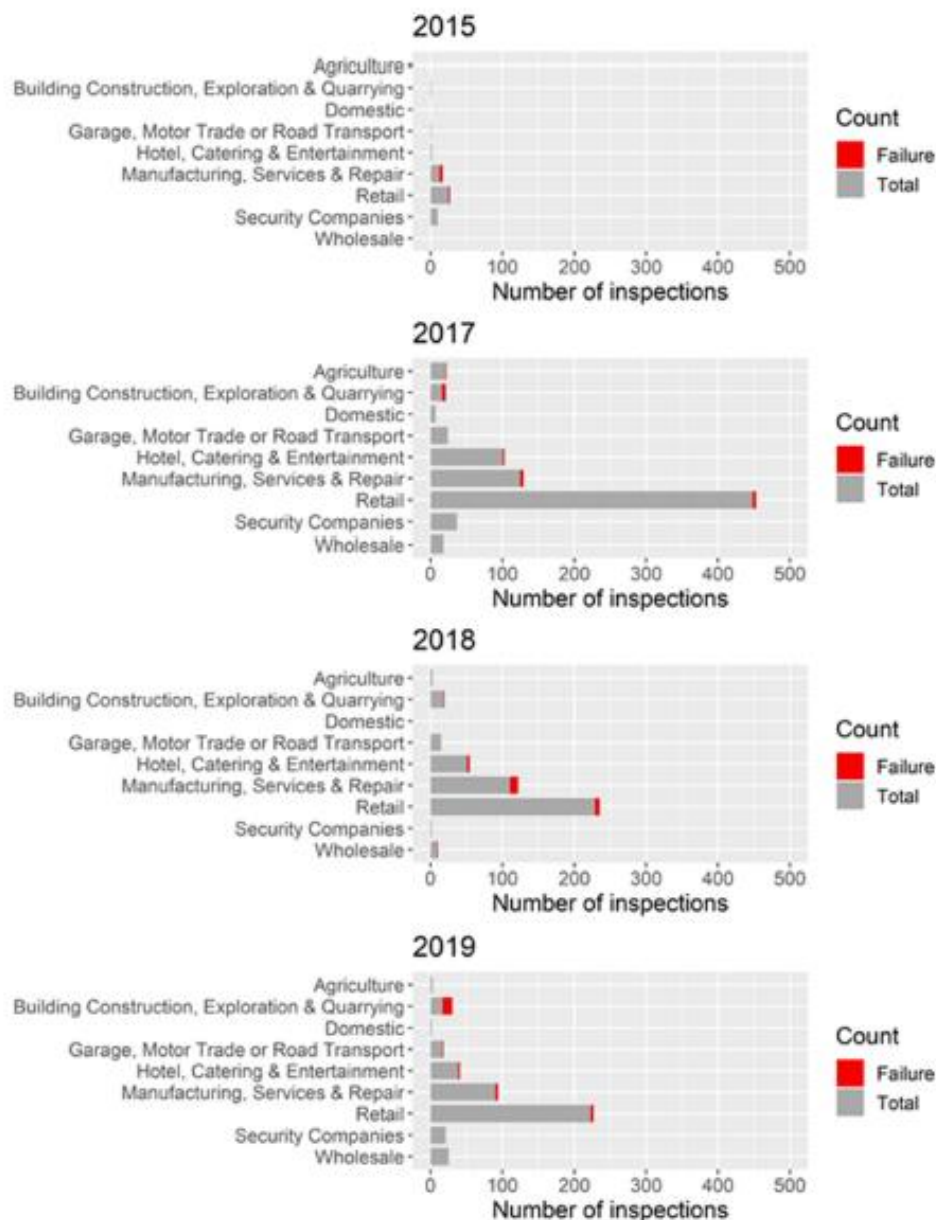
| Industry Type | 2015 | | | 2017 | | | 2018 | | | 2019 | | |
|---|-----------|----------|-------------|------------|-----------|------------|------------|-----------|------------|------------|-----------|------------|
| | Total | P | % | Total | P | % | Total | P | % | Total | P | % |
| Manufacturing, services and repair | 14 | 4 | 30.8 | 125 | 4 | 3.2 | 111 | 11 | 9.9 | 90 | 4 | 4.4 |
| Security companies | 10 | 0 | 0 | 37 | 0 | 0 | 2 | 0 | 0 | 21 | 0 | 0 |
| Building, construction, exploration and quarrying | 1 | 0 | 0 | 16 | 5 | 31.3 | 18 | 1 | 5.6 | 17 | 13 | 76.5 |
| Hotel, catering and entertainment | 2 | 0 | 0 | 101 | 2 | 2.0 | 51 | 3 | 5.9 | 39 | 2 | 5.1 |
| Garage, motor trade or road transport | 1 | 0 | 0 | 24 | 0 | 0 | 15 | 0 | 0 | 17 | 1 | 5.9 |
| Wholesale | 0 | 0 | 0 | 18 | 0 | 0 | 9 | 1 | 11.1 | 25 | 0 | 0 |
| Retail | 25 | 2 | 8 | 448 | 5 | 1.1 | 229 | 6 | 2.6 | 223 | 4 | 1.8 |
| Domestic | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| Agriculture | 0 | 0 | 0 | 21 | 1 | 4.8 | 3 | 0 | 0 | 3 | 0 | 0 |
| TOTAL | 52 | 6 | 11.5 | 797 | 17 | 2.1 | 438 | 22 | 5.0 | 437 | 24 | 5.5 |

While these data provide useful information, to use them to estimate bureaucratic flow, and in particular to estimate the proportion of permit violations by sector, **we would need additional data on the total number of individuals employed by the companies undergoing the spot checks**. Even if this information becomes available, the data may be biased given that checks are targeted using reports from stakeholders. We would therefore also require records of the contraventions reported by the stakeholders, as it is impossible that those not checked for work permit violations, but found to have such an infringement, might be more representative of the industry as a whole.

3.3.4. Labour inspections

Labour inspections monitor compliance with labour laws, with all business and workplaces with employees subject to inspections. These data, provided by the Ministry of Employment, Labour Productivity and Skills Development, describe routine scheduled inspections where the company is informed prior to the visit. The ministry has indicated that they do not have the capacity to visit a large number of workplaces. The data shown in Figure 9 below, shows that work permit violations comprise only a small proportion of labour inspection contraventions recorded between 2015-19.

Figure 9: Total numbers of inspections and failed inspections by industry type in 2015, 2017-19



Comparing the results in the Figures 10 and 11, below, the proportion of establishments found to have workers without permits is lower than those found by spot checks, as would be expected. From 2015-19, only a small number of establishments were found to have problems with work permits.

Figure 10: Total number of labour inspections, T, conducted in 2015-19 and the number, P, and percentage, %, of spot checks with a recorded contravention of working without a permit

| Industry Type | 2015 | | 2016 | | 2017 | | 2018 | | 2019 | |
|---|------|----|------|----|------|----|------|---|------|----|
| | T | P | T | P | T | P | T | P | T | P |
| Manufacturing, services and repair | 392 | 14 | 494 | 16 | 398 | 10 | 386 | 2 | 437 | 10 |
| Security companies | 29 | 0 | 10 | 0 | 14 | 0 | 5 | 0 | 133 | 2 |
| Building, construction, exploration and quarrying | 56 | 8 | 194 | 4 | 73 | 4 | 64 | 6 | 51 | 5 |
| Hotel, catering and entertainment | 238 | 2 | 151 | 1 | 241 | 3 | 254 | 1 | 332 | 8 |

| | | | | | | | | | | |
|---------------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
| Garage, motor trade or road transport | 89 | 0 | 102 | 3 | 93 | 0 | 82 | 1 | 91 | 1 |
| Wholesale | 23 | 1 | 24 | 1 | 41 | 0 | 44 | 0 | 40 | 12 |
| Retail | 1191 | 13 | 939 | 11 | 875 | 6 | 1398 | 6 | 648 | 0 |
| Domestic | 11 | 0 | 3 | 0 | 8 | 0 | 10 | 0 | 0 | 0 |
| Agriculture | 233 | 28 | 27 | 0 | 76 | 3 | 106 | 0 | 36 | 0 |
| TOTAL | 2263 | 66 | 1764 | 36 | 1819 | 26 | 2349 | 16 | 1768 | 38 |

For estimating bureaucratic flow, the labour inspections are not as targeted as spot checks, and so the data are less likely to be biased. However, to estimate the proportion of employees working without a permit at inspected establishments **we would need to know the numbers of employees and also the number of individuals recorded as working without a permit.** Ideally these data would then be used to make sector-level estimates of the proportion of individuals who are working without permits. While information is provided by the census data, missingness is high for work-related questions. **We suggest contacting government ministries to request total numbers of individuals working in these sectors in Botswana.** It should be noted that no gender- or age-stratified information is provided in these data sets. We assume that there are substantial variations across the sectors, but without this information we cannot obtain disaggregated estimates.

3.3.5. Illegal apprehensions and repatriation data

Valuable data on individuals found to have illegal immigration status have been provided for the period 2016-2019. The information is stratified by nationality, and by whether the individual was male, female or a minor; however, the cut-off age was not provided.

Figure 11: Stratified numbers and proportions of individuals with illegal immigration status

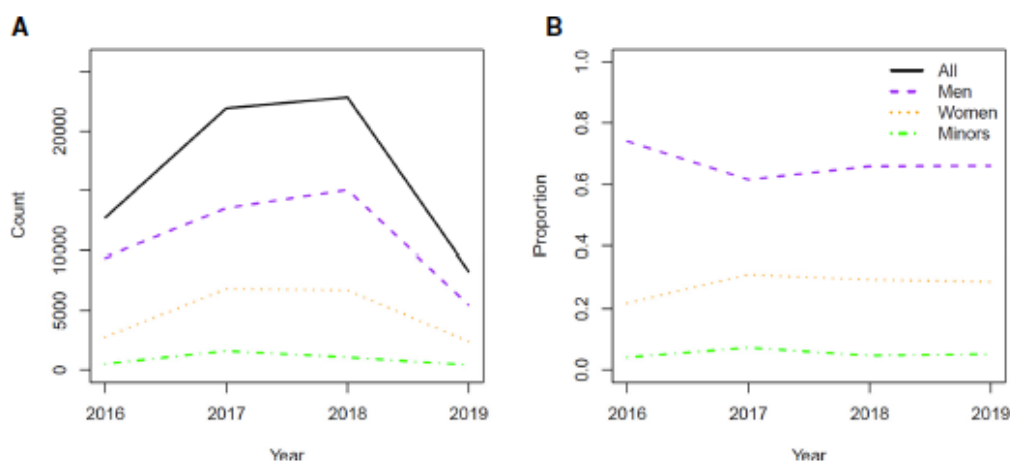
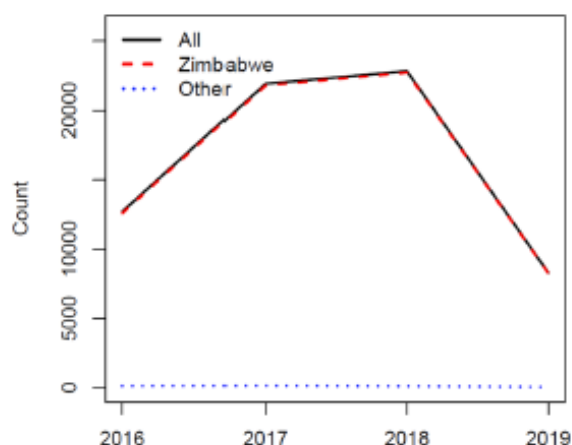


Figure 11A shows the numbers of individuals in each category and the total, while Figure 11B shows the proportions in each category. Figure 12, below, shows the same data stratified by nationality.

Figure 12: Numbers of individuals with illegal immigration status by nationality



As can be seen, the overwhelming majority of these individuals were Zimbabwean; over 99% of all apprehensions were of Zimbabwean citizens in each year (range 99.1%-99.5%). The table below shows the next five ranked countries in each year by total numbers apprehended. The numbers are very small, with most individuals coming from elsewhere in sub-Saharan Africa.

Figure 13: Country rankings and number of individuals apprehended

| Rank | 2016 | 2017 | 2018 | 2019 |
|------|-------------------|----------------------------------|-----------------------------|-----------------------------|
| 1 | Zambia (26) | Zambia (35) | Nigeria (21) | Kenya (10) |
| 2 | Namibia (16) | Namibia (25) | Egypt (14) | Nigeria (9) |
| 3 | Nigeria (11) | Nigeria (18) | Malawi (14) | Zambia (6) |
| 4 | South Africa (10) | China (10) | Uganda (13) | Malawi / UK / Uganda (4) |
| 5 | Malawi (10) | Mozambique / Sierra Leone (7) | Kenya / South Africa (9) | |

In 2016, only individuals from Zimbabwe, Namibia, Kenya, Zambia, South Africa, Malawi and China were repatriated, while in 2017, this was the case for nationals of Zimbabwe, Namibia, Kenya, Zambia and Uganda. In 2018 and 2019, all apprehended individuals were repatriated regardless of nationality.

For estimating stocks and flows, **we do not have information on whether apprehended individuals had irregular status owing to permit violations or whether they had entered the country irregularly.** However, the repatriation data allows estimation of outflow from Botswana. If data total number of arrests of foreign-born individuals were available, it might be possible to use this in conjunction with the illegal-status apprehensions data and the census data to provide a multiplier estimate of the stock. However, there are possible inherent biases in these data sets.

3.3.6. Vital Statistics Report 2014

We have been provided with a copy of the Statistics Botswana Vital Statistics Report 2014. This report provides detailed information on civil registration and vital statistics. Information is provided on birth registration, death registration and marriages.

Information on births is provided for the period from 2011 to 2014, stratified by sex, district, registration centre, age of mother, month, place of birth, and marital status of the mother. For deaths, numbers are given as totals, and stratified by district, age, sex, month, registration centre, place of

death, marital status, and education level. For marriages, the statistics provided include total numbers, registration district, month, type (Banns or licenced), age, occupation, and previous marital status.

For 2014, birth and death data are tabulated by place of usual residence, which includes the category “other categories”, which may provide useful information for demographic inflow and outflow estimation.

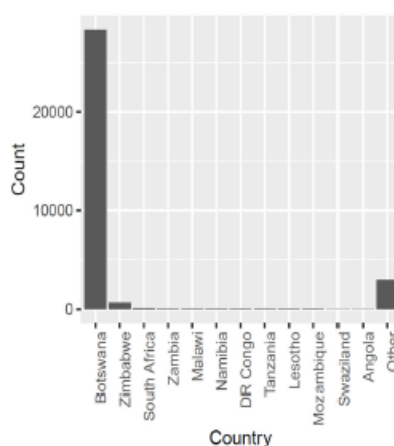
3.3.7. Botswana Demographic Survey 2017

We were provided with individual level data for 32,140 individuals and 200 variables. The survey was completed for 90.2% of individuals, and partially completed for a further 9.4%. The survey used complex survey design. However, although the data contain information on strata, we have not been provided with the survey weights, and so **cannot extrapolate the data to Botswana as a whole**.

The variables included information on where the individuals lived, including district, village, and locality, as well as similar information on place of birth, whether their birth had been registered, and their marital status. Participants were also asked details about their age, children, any disabilities, diseases and other medical conditions, their diet, weight, height, and birth control. Further questions asked for information on education level, training, and certificates or diplomas. A question on religion had large amounts of missingness, but of those who answered, 86.7% stated that they were Christian, and 10.3% of no religion.

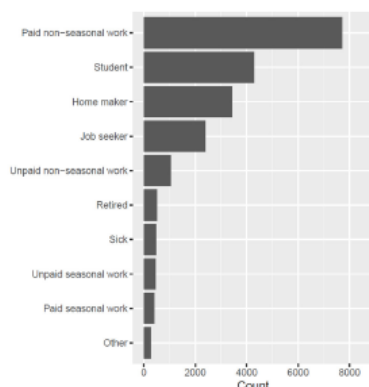
Potentially relevant information on migration included place of birth, with 87.8% of individuals born in Botswana and 3.5% born in another country; the remaining entries were missing or not stated. A question on citizenship was asked, but as entries were missing or unknown for 96.9% of individuals these data are of limited use. Questions on countries, regions and continents of birth had even more missing entries (99.6%), and no individual stated that they were Zimbabwean, for example. However, a further question on citizenship had far fewer missing entries; the results for this question are given in Figure 14.

Figure 14: Citizenship of individuals in the demographic survey data



For a question on place of living one year previously, 115 individuals stated that they were living in a different country, while for the equivalent question five years previously, 312 individuals stated that they were living in a different country. Of the 27,681 individuals who stated a most frequently spoken language, 77.5% spoke Setswana, followed by Kalanga (6.3%), Shekgalagari (4.1%), and English (2.8%). A question on economic activity was answered by 65.2% of the individuals surveyed. The numbers of people in each category are shown in Figure 15.

Figure 15: Economic activity of individuals in the demographic survey data

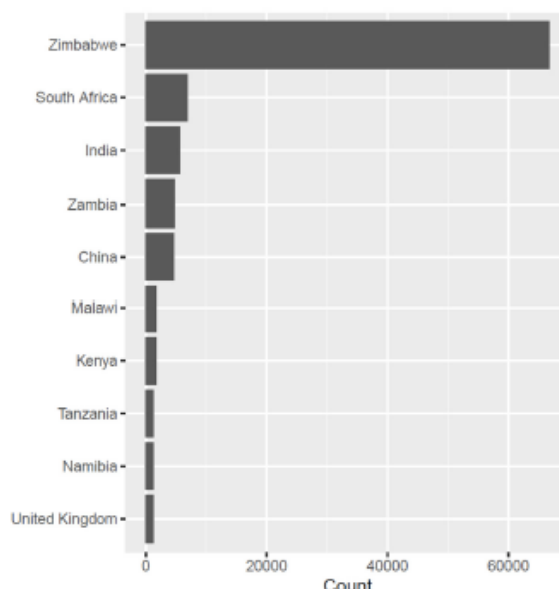


3.3.8. Botswana Census Data

All data: We were provided with detailed and useful data at an individual level from the census of Botswana that took place in 2011. These valuable data comprise 2,024,904 entries for 140 variables. There are slightly more females (51.1%) than males (48.9%), and much of the population is young. A question on language spoken was answered by 94.7% of the population.

Potentially useful information regarding migration is provided by the questions on citizenship. Most individuals (94.5%) were citizens of Botswana. More than half (59.7%) of the remaining individuals were citizens of Zimbabwe, followed by South Africa and India. The 10 most common nationalities of the 167 given in the census data are shown below.

Figure 16: Number of individuals who are citizens of other countries



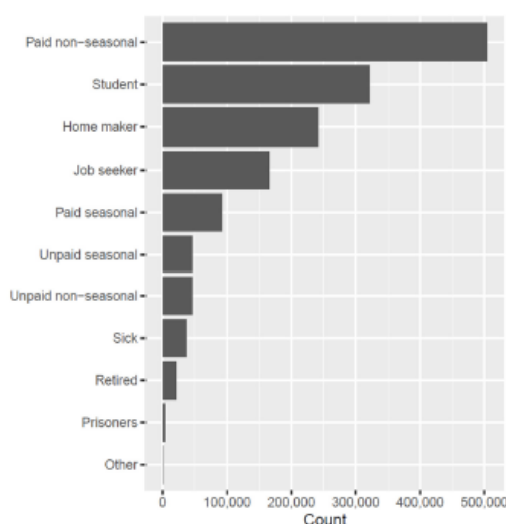
Further information is provided on the location in which the individual lived on the census date and in previous years. Most individuals (64.1%) lived in urban areas, with the remainder in rural areas (i.e., no information was provided on peri-urban residence, for example). When asked for district of residence one year previously, 23,214 (1.1%) stated that they were living in another country. In answer to a further question, of the 22,981 individuals who named another country as their place of living a

year previously, 12,885 (56.1%) stated Zimbabwe, and 4,171 (18.1%) stated South Africa. In answers to a third question, 17,436 individuals described themselves as international migrants.

For place of living five years previously, 50,828 individuals stated that they were living abroad, and that they were international migrants. For a further question, 55,657 individuals stated a different country or region as their place of living five years previously. Again, Zimbabwe was the most common response (33,801; 60.7%), followed by South Africa (8,551; 15.4%).

Detailed information is also provided on employment. A question on what the individual was mainly doing since Independence Day had 543,951 missing entries. The counts for the remaining categories are shown in Figure 17. Further information describes whether individuals were paid, and if they were not working, what they were doing. There is also detailed information on the types of work carried out, and their main product, service or activity.

Figure 17: Types of economic activity



3.3.9. Data for non-Botswana citizens

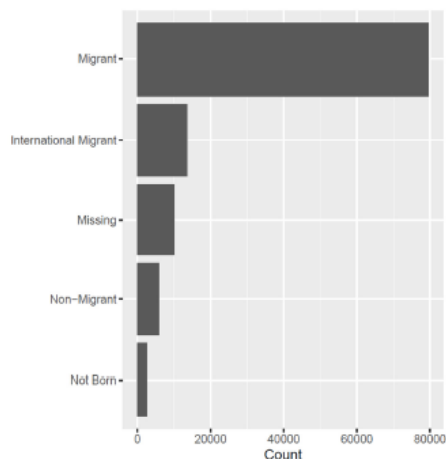
As the focus of the project is on irregular migration, we examined in detail the data for citizens of countries other than Botswana. This group of individuals has a higher proportion of males (57.0%), and the age distribution is also different from that of the population as a whole, with a higher proportion of individuals of working age.

Six languages are spoken by more than 1,000 non-Botswana citizens. As shown in Figure 3.14, the most commonly spoken language was English, followed by Zezuru/Shona. Most of this population were either married (40.1%), never married (26.5%), or living together (11.0%), with only small numbers being separated, divorced or widowed. A far higher proportion were living in urban areas (79.8%) than in the population as a whole. Almost one-third of non-Botswana citizens (30.8%) lived in Gaborone, followed by 14.1% in Kweneng East, and 9.9% in Francistown; almost half (46.2%) stated that they were living in a city or town, and 33.6% stated that they were living in an urban village.

When asked where they were living a year previously, 25.8% were living in Gaborone, 16.0% in another country, 10.6% in Kweneng South/East, and 8.2% in Francistown. Of the 17,842 individuals living in another country, 12,419 (69.6%) were from Zimbabwe, 1,358 (7.6%) from South Africa, and 877 (4.9%) from China. As shown in Figure 18, of those with responses, a large majority described themselves as migrants, international migrants, or were not born. More than half (57.3%) of those

who described themselves as non-migrants were Zimbabwean. Most non-Botswana citizens (55.4%) described themselves as rural-to-rural migrants from five years previously, while 36.1% described themselves as international migrants.

Figure 18: Migration status of non-Botswana citizens a year previously



More than half (53.1%) of non-Botswana citizens stated that they were in non-seasonal paid employment, followed by 16.0% who were home makers. Overall, 52.4% had done some type of work for pay since the previous independence day. The most common types of work carried out in the previous week are shown in Figure 19, while stated current economic activity is shown in Figure 20.

Figure 19: Most common types of work by non-Botswana citizens in the previous week

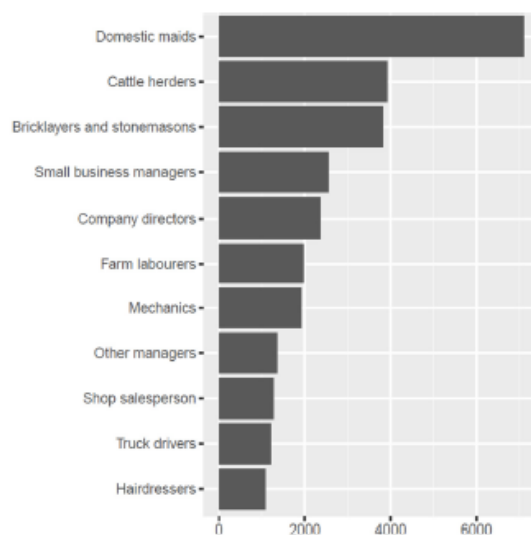
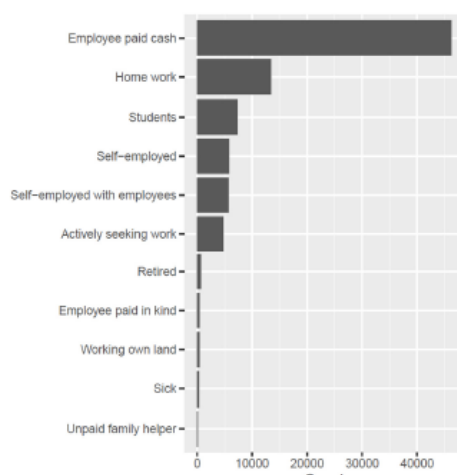


Figure 20: Current economic activity of non-Botswana citizens



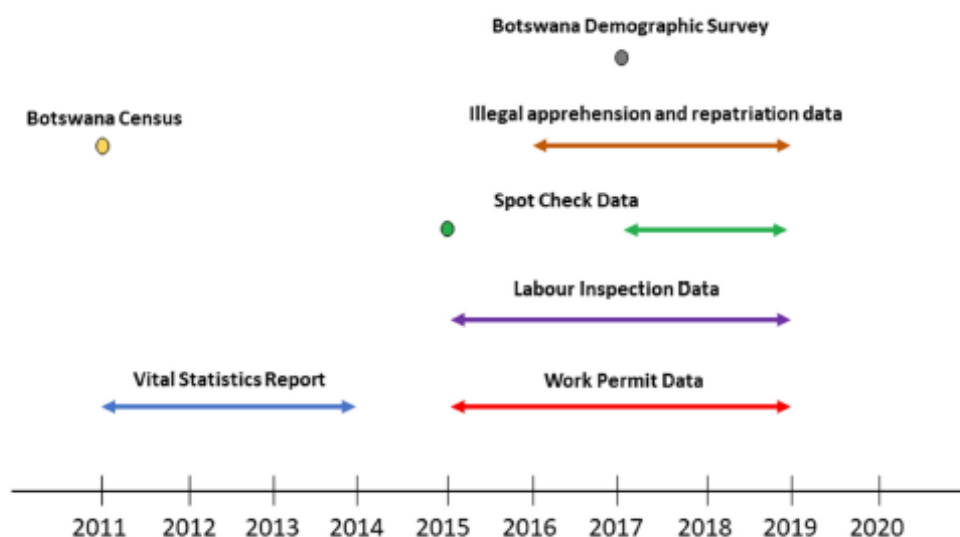
3.3.10. Border crossing data

No data was provided on border crossing.

3.4. Estimates from Botswana data

In this section, we refer to the proposed estimation methods discussed and present the status for the estimation for each stock and flow. As illustrated below, one of the challenges is that the data is available for different periods of time.

Figure 21: Timeline of data sets provided



3.4.1. Estimating stock

The proposed approach for the estimation of stock is the residual method. The method subtracts the number of authorized foreign-born residents from the total foreign-born population obtained from the census data. For this estimation approach the data we need are:

1. Total number of foreign-born individuals from the census data.

2. Data to extrapolate the census count from the 2011 census figure to a comparable time period.
3. Numbers of authorized foreign-born individuals.

For requirement 1, we report the required statistics from the census data in Figure 21.

Figure 22: Number of individuals declaring themselves as non-Botswana citizens and/or international migrants

| Category | Declared as Non-Botswana | Non-Botswana citizens not living in Botswana 1 year previously | Non-Botswana citizens not living in Botswana 5 years previously | Declared as international migrants 1 year previously | Declared as international migrants 5 years previously |
|------------|--------------------------|--|---|--|---|
| Male 18+ | 51,846 | 7,970 | 22,573 | 8,294 | 26,297 |
| Female 18+ | 36,466 | 7,284 | 17,744 | 6,936 | 19,609 |
| Male 18- | 11,959 | 1,298 | 2,225 | 1,108 | 2,430 |
| Female 18- | 11,575 | ,290 | 2,252 | 1,098 | 2,492 |

For requirement 2, it would be possible to use the demographic survey data to make more up-to-date estimates for the population of Botswana as a whole. As stated in the report, a stratified two stage sampling design was used in the survey. In the first stage, enumeration areas were drawn from the 2011 census sampling frame, while in the second stage, a complete listing of households was carried out in all selected enumeration areas. **If sample weights were provided, the demographic survey data could then be extrapolated.**

For requirement 3, data on the number of work permits granted each year are available for 2015 to 2019. However, we do not know how long work permits are valid for, and we cannot therefore conclude how many of the foreign-born individuals are authorised to be in the country at a specific time-point.

Ideally, we would also account for foreign-born individuals who might have evaded being recorded in the census data. If individual-level information was collected on people caught illegally working, or data on apprehensions by the police were available and cross-checked with the census, it might be possible to estimate the proportion of irregular migrants not completing census information. However, this level of information is not yet available to us.

3.4.2. Estimating flow – geographic flow

No data have been provided on apprehensions of individuals trying to enter the country illegally and therefore we are not able to estimate geographic inflow. Geographic outflow data are provided by the repatriation data in the table below, although we do not have any data on irregular migrants who have left of their own accord.

Figure 23: Number of individuals repatriated from Botswana

| Year | Male | Female | Minor |
|------|--------|--------|-------|
| 2016 | 9,372 | 2,763 | 519 |
| 2017 | 13,461 | 6,822 | 1,598 |
| 2018 | 15,048 | 6,723 | 1,063 |
| 2019 | 5,470 | 2,385 | 428 |

3.4.3. Estimating flow – bureaucratic flow

It has been proposed that the estimation of permit overstayers should be a straightforward function of:

- Number of permits issued.
- Cancelled permits.
- Departures of individuals on various visa types.

We have valuable data on the number of work permits issued in Figure 24, although the gender of the applicant is not included in the dataset. We currently do not have data on cancelled permits or departures of individuals on various visa types that would allow us to estimate the required bureaucratic flow.

Figure 24: Number of work permits approved by year

| Year | Number of work permits approved |
|-------|---------------------------------|
| 2016 | 6,775 |
| 2017 | 6,821 |
| 2018 | 7,582 |
| 2019* | 7,788 |

* Only includes permits approved up to the end of October 2019

A further type of flow to estimate is that of permit violations. We have data on labour inspections that record whether there are employees without appropriate permits. Data are not available on the number of individuals working without a permit (as opposed to the number of workplaces) and therefore we are not able to estimate the number of individuals working illegally.

We also note that for individuals working without a permit, we have no information on whether their work permit had expired, or whether they had been working illegally without ever having had a permit. In the latter case, this would not contribute to bureaucratic flow but might be useful to contribute to estimating stock in an alternative way.

3.4.4. Estimating flow – demographic flow

No data have been provided specifically on births or deaths of individuals without legal status, although the vital statistics report does report the numbers of births and deaths of individuals by country of usual residence for 2014 only. However, the group describing their usual district of residence as “other country” will be made up of individuals with legal and illegal status and therefore it is not possible to know how many births are into the irregular migrant population.

Additional information from the social protection department on mothers’ status would be required for a robust assessment of this proportion. The birth numbers could be considered an upper bound of demographic inflow, with 326 babies born to mothers whose district of usual residence was recorded as “other country” in 2014. However, this is likely to be a considerable overestimate.

Similarly, data on deaths are available in the vital statistics report, and again the data are available by country of usual residence. The death numbers could be considered an upper bound of demographic outflow, but as with births it is likely to be a considerable overestimate as it will include both permitted and irregular migrants. There were 65 deaths in 2014 for individuals whose district of usual residence was recorded as “other country”, 38 of which were of males. There were no individuals in this category recorded as having died prior to 2014 but with the death registered in 2014.

4. PILOT COUNTRY ANALYSIS – KENYA

4.1. Workshop

The workshop in Nairobi, Kenya, was held for 1.5 days from 15-16 January 2020. Participants included representatives from the Kenya National Bureau of Statistics, the Department of Immigration, the Border Management Secretariat, the National Police Service, the Ministry of Interior and Coordination of National Government, the Ministry of Foreign Affairs, the Civil Registration Service, the Kenya National Commission on Human Rights, and the University of Nairobi/the Population Studies & Research Institute.

The format of the workshop was the same as in Botswana. After formal introductions, the two introductory presentations outlining definitions of concepts, data requirements for estimating irregular migration, and different estimation approaches were followed by a discussion around the specifics of irregular migration in Kenya. Five presentations around the specifics of irregular migration in Kenya were held by representatives from the National Employment Authority, the Department of Immigration, the Kenya Police Service, the National Commission on Human Rights, and the National Bureau of Statistics.

The presentations were then followed by a collective exercise to agree upon the key drivers of irregular migration in Kenya and the most relevant data available to measure them, which lasted for the remaining two half days of the workshop.

4.2. Drivers of irregular migration

The discussion highlighted the importance of this project's goal of estimating irregular migration in Kenya. Large refugee populations, some of which have been in refugee situations for multiple generations (for example Somali and Rwandese nationals), and the long porous border of the country have made it challenging to make accurate population estimates and to monitor those who are born or enter into irregularity.

4.2.1. Flows of irregular migrants

Irregular Border Crossings (geographic flow)

Geographic inflows were considered to be relatively limited in Kenya. The border with Somalia is closed. In addition, a large number of highly integrated border communities and economies live spanned across the borders of different nations. There is a privileged freedom of movement arrangement that allows citizens of the intergovernmental East African Community (EAC), comprising Kenya, Burundi, Rwanda, South Sudan, Tanzania and Uganda to move across borders at will. However, a system of ID cards and formal registration with states is not yet advanced and systematic. Whether or not to include these border crossing communities and citizens of the intergovernmental East African Community (EAC) resident in Kenya in an estimate of irregular migration was discussed extensively. It was concluded that border crossing communities should not be included in an estimate of irregular migration, except for cases where they were identified by police as being 'unlawfully present' in Kenya. Those stopped at official border crossings are turned back; those detained between official border posts attempting to cross without proper documentation are recorded as 'unlawfully present' as with any other foreign-born national unable to provide the proper documentation for their entry/stay.

Permit Overstayers & Permit Violations (bureaucratic flows)

Bureaucratic flows were seen as the main flow into irregularity in Kenya. Data on all visas and permits issued to foreign-born nationals are kept by the Department of Immigration. It may be possible from the data to figure out the number of visas or permits that are violated, cancelled, and the number of people repatriated and returned. However, given the porosity of borders and freedom of movement, it may not be possible to know how many of those who have violated permits were still in the country. Entry and exit data are entered into the Personal Identification Secure Comparison and Evaluation System (PICES) database, but the data may not be sufficiently comprehensive. The data has also only been digitised for 2017 to 2019. Records from 2009 to 2017 remain paper-based. Two further weaknesses were identified:

- **Work Permit Violation Data:** Work permits to recruit foreign-born staff are issued to companies, and it is the responsibility of those companies to maintain a record of their employees to ensure that permits remain valid. However, it was concluded that there is little evidence of permit abuse, and that it did not need to be prioritised for consideration.
- **Student Visa Violation Data:** Similarly, student visas are administered by institutes of higher education. While the Ministry of Education would have enrolment/biometric data on student registrations, once student visas expire the Department of Immigration would not systematically enquire with institutes of higher education into students' status.

Births into Irregularity and Deaths of Irregular Migrants (demographic flows)

Births into irregularity were considered a significant flow into irregularity. However, the available data are unlikely to allow to provide a reliable estimate. Data on birth certificates could be consulted for the presence or absence of a Kenyan passport number or foreign national card number for either or both of the parents, but only an estimated 70% of births in Kenya are registered. Further, the highest proportion of unregistered births is likely to sit in communities where there are people living in irregularity or in a situation of informality (i.e. border crossers).

How to deal Kenya's sizable population of stateless persons was another consideration. There are around 20,000 stateless persons in Kenya, a historic legacy of the pre-independence period. Births to this group will further increase the stateless population. Since 2016, the government has initiated a number of different strategies to formalise the status of stateless persons in Kenya, and to improve their access to Kenyan documentation.¹ Recently, the government has launched a special commission, under the Ministry of Interior. The special commission will be in operation from August 2020 to gain a better demographic understanding of the population of stateless persons. This can greatly assist future estimates and it was agreed that further guidance would be provided by the Ministry of Interior on how to consider this population.²

4.2.2. Stocks of irregular migrants

Two sources to estimate total number of irregular migrants were discussed; (a) census data and (b) school enrolment data.

Confidence among participants was high that the census data captures the vast majority of people resident within Kenyan borders, both, formal and informal.

¹ <https://www.unhcr.org/ke/stateless-persons>

² This is largely dictated by the rights and protections offered to stateless persons under the 1951 Refugee Convention, to which Kenya is a signatory. In 2014, the Government re-affirmed its commitment to meeting those obligations for the stateless populations in Kenya, as part of the Global Action Plan to End Statelessness.

To enrol in any school, a birth registration is required. All relevant data are entered into the National Education Management Information System. However, the comprehensiveness and reliability of the data were questioned. Many foreign-born citizens living in neighbouring countries cross the Kenyan border only to attend school. Thus, the data may be inflated obscuring the true estimate of pupils in an irregular situation.

There was also a request by the African Union Commission representative to have a more detailed profile of irregular migrants and the sectors in which they work. However, participants indicated that given available data in Kenya this may currently not be possible.

4.3. Data collection and quality

Following the discussions at the workshop, a data request table with an official data request letter by the African Union Commission were sent to the focal point in Kenya. The data request table asked for data from the last ten years, if available, disaggregated by sex, age and nationality:

Figure 25: Over of data requested from Kenya

| Data Type | Component | Source |
|-----------------------------|--|--|
| Census data | Total foreign population (i.e. total immigrant population) | <i>Kenya National Bureau of Statistics</i> |
| Arrests / Apprehension data | Number of arrests of irregular migrants (illegally present in Kenya & failing to report to an immigration agent) | <i>National Police Service / Director of Public Prosecutions</i> |
| Entry / Exist data | Number of foreign individuals entering / exiting Kenya at official entry points | <i>Department of Immigration (PISCES)</i> |
| | Number of official deportations / repatriations | |
| Residence permits data | Total number of residence permits (permanent residence) issued to foreign nationals & 'dependent passes' issued to family members of individuals with work permits and permanent residence | <i>Department of Immigration</i> |
| Work permits data | Total number of work permits issued to foreign nationals, by sector | <i>Department of Immigration</i> |
| | Work permit violations | <i>Ministry of Labour</i> |
| Student visas data | Number of student visas granted | <i>Department of Immigration</i> |
| | Enrolment rates in tertiary institutions by nationality | <i>Ministry of Education (NEMIS)</i> |
| Charges / Convictions data | Total number of individuals charged / convicted (disaggregated by crime type) | <i>Judiciary</i> |
| | Total number of irregular migrants charged / convicted (disaggregated by crime type) | <i>Director of Public Prosecutions</i> |
| | Falsification of migration documents | <i>Department of Correctional Services</i> <i>National Police Service</i> |
| School enrolment data | Number of foreign pupils enrolled in formal & informal schools | <i>Ministry of Education (NEMIS)</i> <i>Department of Social Service</i> |

| | | |
|--------------------------|--|---|
| | | <i>County Governments</i> |
| Statelessness statistics | Total number of stateless persons | <i>UNHCR (pre-2020) Ministry of Interior (taskforce from August 2020)</i> |
| Births / Deaths data | Number of individuals with no valid parental Kenyan ID number (or with alien number) on birth or death certificate | <i>Civil Registration Services</i> |

Of the list of documents requested from Kenya, we received four sources of data for Kenya:

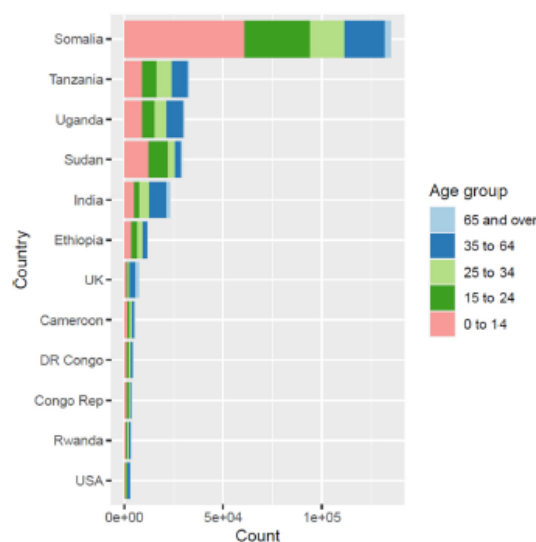
1. Nationality data from the 2009 Kenyan census
2. Individuals with illegal migration status apprehended by nationality for the period 2017 – 2019.
3. Data on non-Kenyan prison inmates by nationality. **No dates were provided for these data.**
4. Recent data specifically intended for estimation of irregular migration.

In the sections below, we analyse each of the data sets provided and review whether they can be used to estimate stocks and flows from the available data.

4.3.1. Nationality data

The nationality data from the 2009 Kenyan census are stratified in three ways: by age, by highest level of education, and by employment sector. Overall, 345,662 individuals from 191 countries are recorded for age, 305,974 individuals from the same countries for education, and 148,748 individuals from the same countries describing their employment sectors.

Figure 26: Numbers of non-Kenyan citizens reported in the 2009 census by age group



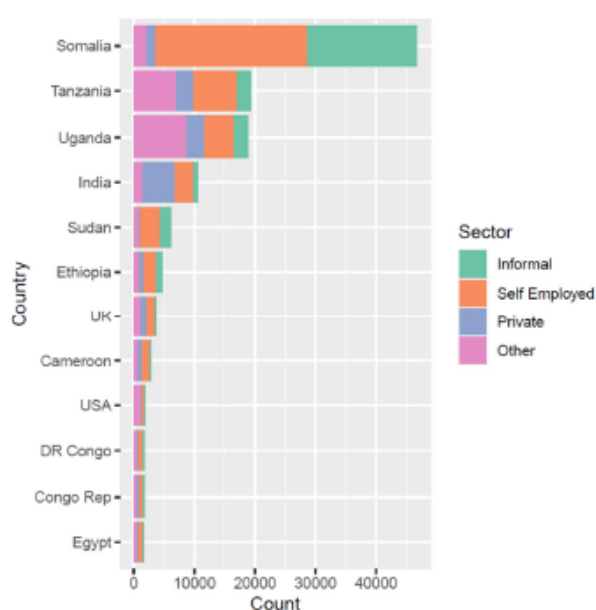
As shown in Figure 26, the country with the largest number of individuals for the data stratified by age was Somalia, followed by Tanzania, Uganda, Sudan and India. The twelve countries shown in the figure account for 84.0% of non-Kenyans reported in the census. Figure 4.1 also shows that there are large differences in age structure across different countries, with 0 to 14 years olds from Somalia being the largest individual group. This information would be extremely valuable in estimating overall stock of

migrants in Kenya. **However, it is now out of date, and we would require equivalent information from the 2019 census to make these stratified estimates.**

Figure 27 shows that there are also large differences in the levels of education in the different national groups, with 72.0% of the individuals having received no education. For individuals from Tanzania, Uganda and Sudan, the most common education level was primary, while for India it was secondary followed by university.

Finally, data were also provided stratified by employment sector, with 17 different categories. The three most common categories accounted for 78.1% of individuals, and were “Self Employed - Informal” (38.7%), “Informal Sector ('Jua Kali)’” (22.3%), and “Private Sector” (17.1%). For presentation purposes, in the graph below the other categories have been merged.

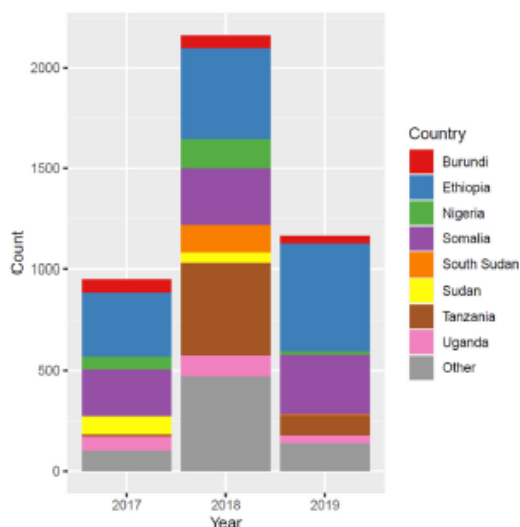
Figure 27: Numbers of non-Kenyan citizens reported in the 2009 census by employment sector



4.3.2. Apprehension data by nationality

Data have been provided on the number of individuals with illegal migration status apprehended in 2017, 2018, and 2019 by country. There are 21 countries reported in the data, with a further small number of individuals of unknown nationality.

Figure 28: Numbers of individuals apprehended with illegal migration status by country



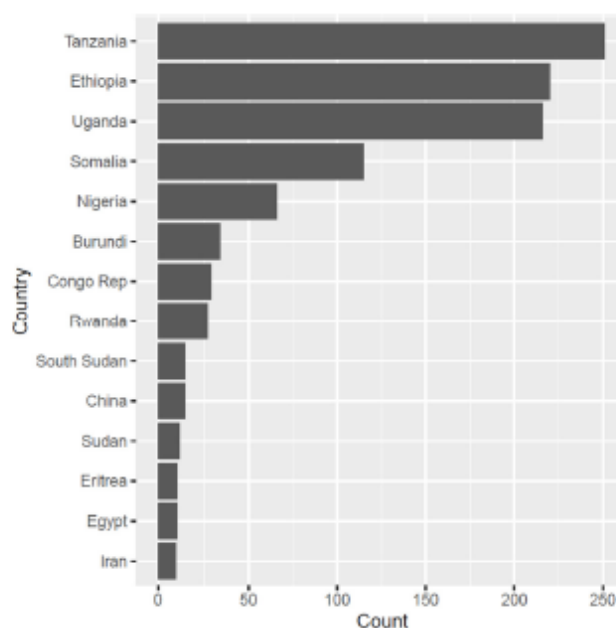
Eight countries have particularly large numbers of individuals: Burundi, Ethiopia, Nigeria, Somalia, South Sudan, Sudan, Tanzania, and Uganda. These countries account for 89%, 78%, and 88% of individuals in 2017, 2018, and 2019, respectively, as shown in Figure 28. **We do not know whether these individuals have been repatriated and hence whether they provide information on geographic outflow.**

4.3.3. Prison data by nationality

We have been provided with data on non-Kenyan nationals recorded within the Kenyan prison system. Data are provided by nationality, and also stratified by whether the individual is convicted or awaiting trial, and by offence.

Overall, there are 1,140 individuals reported in this dataset, of whom 654 (57.4%) had been convicted, with 486 (42.6%) awaiting trial. The individuals were from 61 countries and “Other Asia”. More than three-quarters (76.1%) were from five countries: Tanzania, Ethiopia, Uganda, Somalia, and Nigeria. Number of individuals by country are shown in Figure 29.

Figure 29: Numbers of individuals in the Kenyan prison system by country



4.3.4. Census data

We have been provided with sex-stratified data on non-Kenyans recorded in the 2019 census. This includes east African nationals who have the right to live in Kenya without a work permit. The input to the stock estimate is therefore the total number of individuals from other countries, which was 237,190 in 2019. The country/region-and-age-stratified data are shown in Figure 30.

Figure 30: Numbers of non-Kenyan / east African citizens recorded in the 2019 Kenyan census

| Country / Region | Male | Female | Intersex |
|---------------------|----------------|----------------|----------------|
| Rest of Africa | 73,273 | 71,364 | 9 |
| USA | 6,844 | 6,930 | 7 |
| Asia | 23,729 | 19,238 | 5 |
| Caribbean | 124 | 115 | 2 |
| Europe | 13,432 | 13,316 | 5 |
| Oceania and Pacific | 609 | 578 | 0 |
| Stateless | 3,240 | 3,032 | 0 |
| Other | 725 | 613 | 0 |
| Total | 121,976 | 115,186 | 28 |
| Grand total | | | 237,190 |

4.3.5. Permit and registration data

We also have yearly data for 2010-2019 on numbers of foreign nationals registered, work permits issued, and work permits renewed. This is some of the information required to apply the residual method. However, we do not know the lengths of registration or work permit validity. We cannot therefore estimate the number of authorised non-Kenyan citizens present in 2019. Data for 2015-2019 are shown in Figure 31. The numbers are much smaller than those for the census data in Figure 30, so we assume that work permits last for substantially longer than one year.

Figure 31: Numbers of registrations, work permits issued and work permits renewed

| Category | Year | | | | |
|------------------------------|--------|--------|--------|--------|--------|
| | 2015 | 2016 | 2017 | 2018 | 2019 |
| Foreign nationals registered | 25,091 | 37,033 | 29,318 | 32,332 | 27,092 |
| Work permits issued | 7,683 | 5,581 | 8,366 | 9,465 | 8,967 |
| Work permits renewed | 11,125 | 9,547 | 10,551 | 12,760 | 10,501 |

4.3.6. Voluntary repatriation data

Voluntary repatriation data show that from 2009 to early 2020, 88,699 individuals were voluntarily repatriated from Kenya. Of these, 99.9% were from four countries: Somalia, Ethiopia, Sudan and Burundi. There were extremely strong temporal patterns, with a peak of repatriations to Somalia in 2016 and 2017. These data shown in Figure 32, below, are important in estimating physical outflow.

Figure 32: Number of voluntary repatriations by country and year

| Country | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|----------|------|------|------|------|------|------|------|-------|-------|------|------|-------|
| Somalia | 0 | 6 | 69 | 4 | 0 | 485 | 5616 | 33783 | 35403 | 7559 | 2142 | 0 |
| Ethiopia | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1963 | 0 | 79 |
| Sudan | 665 | 64 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Burundi | 2 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 586 | 156 | 0 |
| Other | 1 | 12 | 14 | 9 | 3 | 0 | 0 | 6 | 4 | 1 | 34 | 0 |

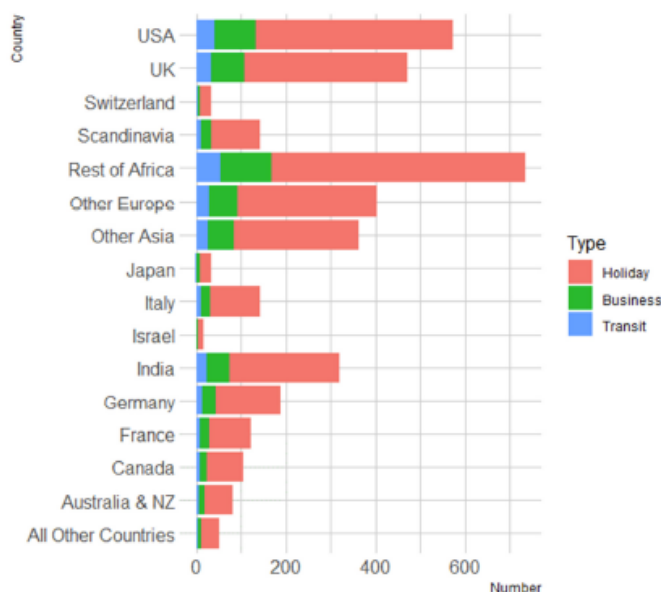
* part of year only

4.3.7. Inflows and outflows data

We have received one data source on inflows and outflows for the years 2014-2019, which is stratified by travel for holidays, business or transit. However, as these data are not stratified by nationality, we cannot use them to make estimates of irregular migration.

However, we received further data that provides departure information stratified by country for 2017-2019. This is potentially useful information on physical flows if we can assume that these individuals had valid visas. The data are presented in Figure 33, and show that citizens of the rest of Africa (i.e., not Kenya or east Africa), the USA and the UK formed the largest groups.

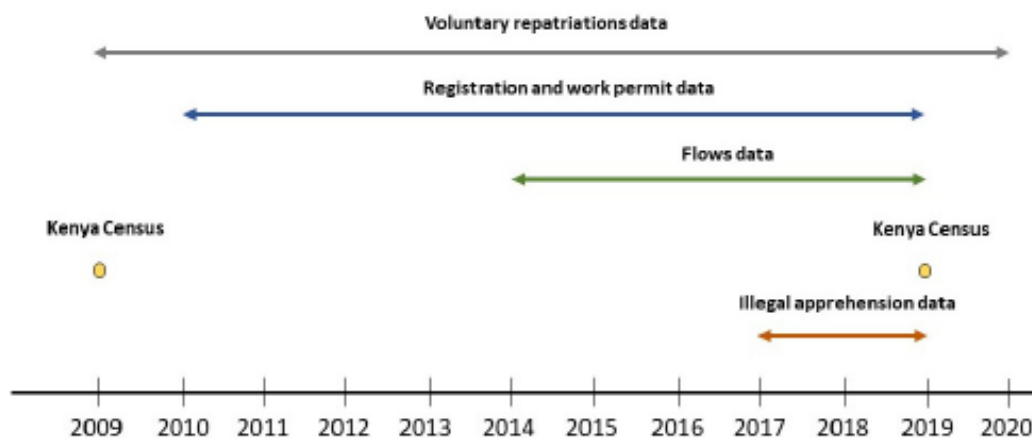
Figure 33: Departures by country / region, 2017-19



4.4. Estimates from Kenya data

The data provided for Kenya comes with comparable time periods, as we have for census, permits and flows data for 2019.

Figure 34: Timeline of data sets provided for Kenya



As we do not know the dates for the non-Kenyan prison inmate data set, it was not displayed in Figure 34 above, and cannot be used.

4.4.1. Estimating stock

The proposed approach for the estimation of stock is the residual method. As described previously, the method subtracts the number of authorised foreign-born residents from the total foreign-born population obtained from the census data.

To apply this estimation approach, we require data describing:

- The total number of foreign-born individuals from the 2019 census data, which has been provided.

- Numbers of authorised foreign-born individuals present in Kenya in or around 2019, which has not yet been provided, although we have some information on work permits and registrations.

A stock estimate cannot be calculated on current data.

4.4.2. Estimating flow – geographic flow

We have some key information on geographical outflow from the voluntary repatriation data, which forms a lower bound for an estimate, but do not have data on individuals with irregular status who have left of their own accord. No data have been provided on apprehensions of individuals trying to enter the country illegally or of legal entries by nationality, and therefore we are not able to estimate geographic inflow.

4.4.3. Estimating Flow - bureaucratic Flow

We do not have sufficient work permit or entry/exit data to allow us to estimate numbers of permit overstayers or permit violations.

4.4.4. Estimating Flow - demographic Flow

No data have been provided specifically on births or deaths of individuals with no legal status.

5. PILOT COUNTRY ANALYSIS -TUNISIA

5.1. Workshop

A 1 day workshop was held on 12th December 2019 in Tunis, Tunisia, where the African Union Institute for Statistics (STATAFRIC) is headquartered. The workshop was preceded by a half-day meeting on 11th December 2019.

The pre-meeting was attended by executives of the Tunisian Institute of National Statistics (INS), the National Observatory of Migration, and the two expert consultants from the GI. During the pre-meeting, the focus of the exercise, the function of the focal point, and the process of data collection and estimation were clarified. It was noted that the estimate created for Tunisia would be owned by the government, who would have exclusive rights to deciding if and how it is shared. While interested in the project, first concerns regarding the cooperation of ministries were voiced by some of the participants. Further, the Director of the Migration Observatory outlined a cooperation project with IOM, which includes awareness raising campaigns to address the risks of irregular migration and to irregular migrants.

The same representatives from the Institute of National Statistics, the National Migration Observatory participated in the one-day workshop on 12th December. Further, representatives from the Ministry of Justice, the Direction Generale des Frontiers et des Etrangers, the Observatoire National de la Jeunesse, the Ministry of Interior, the Ministry of Social Affairs, the Ministry of Education, the Border and Foreigners Division, the Ministry of Health and the Ministry of Foreign Affairs were invited. Further, representatives of the International Centre for Migration Policy Development (ICMPD), the French Migration Office, and the EU Delegation (EEAS-TUNIS) were invited. The workshop was attended by representatives from the INS, the Ministry of Justice, the Ministry of Interior, and ICMPD.

The one-day workshop started off with introductory presentations by the expert consultants on the background of the project, the purpose of the exercise and the process going forward, and on different approaches of estimating irregular migration, and their data requirements. While the presentations were held in English, they were simultaneously translated into French.

Following the presentations, and before moving into a discussion of the drivers of irregular migration in Tunisia and their available data, the representatives from the Ministry of Interior voiced their concerns about the exercise. They questioned the scope of the exercise, how the stakeholder group had been convened, who the instigator of the exercise was, and who the data would be shared with, and who the estimation would be used by. Further, questions were raised of what data would be expected from them to be shared and how it would be used. Insufficient data quality was another concern that was raised.

5.2. Drivers of irregular migration

The discussion around drivers of irregular migration and data available to estimate irregular migration in Tunisia was shortened substantially, due to lack of participation.

5.2.1. Flows of irregular migrants

It was pointed out that visa overstayers and permit irregularities were the primary and defining feature of irregular migration in Tunisia, driven by three phenomena; (a) overstayers over the 90-day visitor permit; (b) overstayers over other forms of residency visa; (c) illegal border crossers who entered without a permit through unofficial border points.

Given that nearly all nationalities can enter freely, the number of people entering without a permit through unofficial border points are expected to be very small. Further, those who have moved for the purposes of labour have only few obstacles remaining, since penalty for permit violations are paid on exit and the priority placed on controlling irregular migration by the criminal justice system is relatively limited. The ‘residual method’ proposed in the presentation would be likely to capture the irregular population, as the departure of visa overstayers is well documented through the fines that they pay.

It was confirmed that data on illegal migrants would be available – in the form of apprehension data – but only as annual totals, disaggregated by gender and nationality. It was noted that no other criminal justice data would indicate the legal status of foreign-born populations.

Permit Violations (bureaucratic flow) & Births into Irregularity and Deaths of Irregular Migrants (demographic flows)

Participants were uncertain whether insights into labour violations could be provided by the Ministry of Labour, and similarly, insights into births and deaths of irregular migrants by the Ministry of Health.

5.2.2. Stocks of irregular migrants

There was no explicit discussion around data availability for the estimation of stocks of irregular migrants.

5.3. Data collection and quality

Following the workshop, a data request table was sent to the focal point from the INS to be distributed among relevant departments. The data request asked for data disaggregated by sex, age and nationality, for as many years as possible:

Figure 35: Overview of data requested from Tunisia

| Data Type | Indicator | Source |
|-------------------------|---|--|
| Census Data | Total foreign population for each year included in the census (i.e. total immigrant population) | National Institute of Statistics (INS) |
| | Reasons for being in Tunisia | |
| Arrests / Apprehensions | Number of arrests of irregular migrants (includes visa overstay and work permit violations) | Ministry of the Interior |
| Entry / Exit Statistics | Number of foreign individuals entering Tunisia at official entry points | Ministry of the Interior |
| | Number of foreign individuals exiting Tunisia at official entry points | |
| | Number of official deportations | |
| Residence Permits | Total number of residence permits issued to foreign nationals | Ministry of the Interior |
| Work Permits | Total number of work permits issued to foreign nationals, by sector | Ministry of Vocational Training and Employment |
| Charges / Convictions | Total number of irregular migrants charged/suspected | Ministry of Justice |
| | Total number of irregular migrants convicted | |
| | Total number of individuals (of all nationalities and legal status) charged/suspected | |
| | Total number of individuals (of all nationalities and legal status) convicted | |

5.4. Estimates from Tunisia

We received one source of data on migration in Tunisia for the years 2009-2014. This source had two parts: firstly, an age-and-sex-disaggregated count of individuals who had left their previous residence, and secondly the same information, but further disaggregated by the reason for leaving their previous residence. Figure 36 provides the age-and-sex-disaggregated estimates for the period 2009-2014.

Figure 36: Number of individuals leaving their previous residence

| Age group (years) | Men | Women |
|-------------------|------|-------|
| Less than 20 | 1220 | 1054 |
| 20-24 | 1360 | 751 |
| 25-29 | 946 | 797 |
| 30-34 | 738 | 814 |
| 35-39 | 636 | 614 |
| 40-44 | 570 | 404 |
| 45-49 | 422 | 310 |
| 50-54 | 383 | 210 |
| 60-64 | 252 | 199 |
| 65-69 | 263 | 198 |
| 70-74 | 193 | 141 |
| 75-79 | 106 | 79 |
| 80 or more | 33 | 32 |

The data are now quite out of date, and there is limited description of the data, so we are not able to use them to calculate estimates.

6. DISCUSSION AND RECOMMENDATIONS

At the conclusion of the pilot stage, extensive data have been provided by Botswana and Kenya, and we have also received data from Tunisia. We thank the agencies involved in collecting and sharing these data sets, and in particular the focal points involved. Yet despite all efforts, it has not been possible to calculate meaningful estimates of flow based on the data provided in the time available.

COVID-19 clearly undermined the efficacy of the pilot exercise, as it obviously put higher priorities on the national agenda of the pilot countries. From a practical perspective, key staff were working from home or furloughed, making communication more challenging, and consultants were unable to travel for in-country workshops, or to support the data collection and review process. Arguably, had the pandemic not occurred, the project may not have had the same conclusion.

The pilot phase has, nonetheless, offered a number of key lessons on the feasibility of the exercise, improvements to the process, and on the data requirements and statistical considerations that would need to be successful.

6.1. Statistical conclusions

We have identified the data that would be required to estimate these parameters of interest, and this is presented in the checklist in Annex 1. Nonetheless, even if we were provided with all of these data sources, there would be potential biases in the estimates obtained, because cohorts of individuals are not tracked by the various data collection schemes. Any estimates would therefore have to be treated with caution, and we suggest comparing relative estimates of stock and flows across years rather than absolute values.

Below we outline what we consider to be the statistical limitations of the project and what needs to be considered if the methods are to be expanded beyond the pilot phase:

- Data sets would need to be provided across comparable time periods. At present the timespan of data sets can vary considerably, and while some back-casting or extrapolation can be used, depending on the extent, this would inhibit the quality of the estimates.
- Data sets would need to be reasonably up-to-date. We suggest that certain data collected more than five years ago are of limited use in making estimates of current stock or flows.
- To make gender-and-age-disaggregated estimates, corresponding data must be available.
- Relying on data already collected by agencies may not be sufficient to obtain the desired estimates. Such data may need to be supplemented with interviews (e.g. expert opinion) or additional data collection.
- Individual-level information may make more robust estimation methods possible. For example, multiple systems estimation could provide a good way of estimating stock. However, it may be a challenge for data-sharing across multiple agencies and a study will only provide a snapshot stock estimate unless the procedures can be repeated year-on-year to obtain relative estimates, while typically the data collection and processing phase of these types of studies is considerable in duration.
- Models are available to calculate estimates of stock and flows, and the computing power required to fit them is minimal. The key to successful estimation is the availability of data.
- Even with the extensive high-quality data provided, much of it at individual level, we simply do not have enough information to make valid estimates.

From a technical perspective, therefore, we suggest that unfortunately it is extremely challenging to make statistically relevant and reliable estimates.

A further challenge that has become clear in terms of creating a model that could be consistently applied on a continental level is the extent to which irregular migration is contingent on national laws. For example, demographic drivers will depend on whether the country follows principles of *Jus Sanguinis* (nationality by blood) or *Jus Soli* (nationality by birth location). A standard methodology will have to be orientated to respond to the different drivers of irregular migration that are possible.

Secondly, administrative changes can affect the size of irregular populations quite significantly and rapidly. If a state changes the length of visitors permits, for example from 90 days to 180 days, then a group of overstayers can be shifted rapidly from irregular to regular. This will allow countries to manipulate statistics from one year to the next and may limit the extent to which national estimates can be comparable.

Finally, the original definition of irregular migration included trafficked individuals, but this category of individuals is not addressed in the data available to us. This is a challenging area of study, and multiple system estimation approaches with lists that could potentially record these individuals would be the only possible way of estimating the size of this cohort (see a recent paper by Silvermann (2020), *Journal of the Royal Statistical Society Series C*, and associated discussion papers).

6.2. Process considerations

Estimating irregular migration is an inherently political process, as well as a technical one. It requires a cross-governmental buy in and commitment to launch the exercise and to ensure not only that the estimate process is completed successfully, but also that it contributes positively to national governance and development. Migrants have rights, and that acknowledging irregular migration at a state level means also acknowledging the responsibilities as a duty bearer to uphold the rights of migrants both legal and informal. Once established and published, an estimate should contribute to a better informed, evidence-based public dialogue and policy making on the subject.

This being the case, the pilot phase highlighted the need to give sufficient time to an awareness raising and a cross-government consultation process well in advance of beginning the technical process of gathering data. It was clear during the pilot phase that countries were not equally prepared or committed to the exercise, despite involvement of the African Union and prior approval/agreement. One of the focal points suggested at least a year of pre-preparation would be required before the data exercise could be launched.

In a similar vein, ensuring that the representatives convened for the committee also need to be empowered to participate in the process. This would warrant additional consultations – a first to introduce the exercise, and then a period to give those representatives to consult within their Ministries for their support to continue, and to do some due diligence on data availability and the ability to share that data. It was rare to find a representative ready in the first meeting to be sufficiently empowered to proceed with the exercise, and to have the breadth of knowledge regarding the data availability across their department.

The pilot process had envisaged at least one additional follow up consultation on the estimation process, and support to the countries in assessing the implications of the estimate for national policy and planning. These were not able to take place, as no estimates were able to be completed. However, we remain confident that this would be an important value-added step.

The request for national capacity building to complete the irregular migration estimate exercise was requested by all three pilot countries. Departments of statistics showed a genuine interest in the modelling process and wanted to ensure that they would be able to repeat the estimation exercise in subsequent years.

6.3. Recommendations on a model process

As the AUC considers the adoption of the irregular migration estimate approach as an AU standard, careful attention will need to be given to providing the necessary tools and support for non-pilot countries. The concepts are quite complicated, and the different dynamics of irregular migration need to be assessed as relevant to national laws, so a step by step guide will be needed if countries are to complete it independently.

To build up coherent framework across African Union countries, the following steps will be required:

A more comprehensive sensitization and buy-in process

Despite the fact that the process was consulted through the African Union, the estimation exercise could have benefitted from a stronger leadership from the African Union, including additional working groups of multiple states convened at the headquarters. The large lag between the expert group in 2018 and the kick-off of the pilot phase in September 2019 meant that momentum was largely lost.

Build capacity

Provide training workshops and capacity building for country (statistical) representatives to initiate, lead and replicate the process. A guide would be beneficial, but continued expert support and technical assistance would greatly facilitate the process. Funding to countries engaging in the process would provide more of an incentive and help maintain momentum.

Ensure consistency

The residual method is the most likely to fit the needs of the majority of AU member states and is quite simple to calculate and model. However, it will be necessary to ensure that methodologies for data collected by the countries are transparent and standardised; otherwise, there is a risk of comparing apples with oranges across countries and over time.

Assess data quality

As laid out in section 6.1, the data requirements are quite exacting, and need to be sufficiently contemporary to make a meaningful estimate. A checklist, plus guidance, is provided in Annex A and Section 6.1, which should be considered a minimum pre-requisite for any country embarking on the estimation process. The digital availability of data is also an important bar to clear in terms of being able to complete the process successfully.

ANNEX 1: COUNTRY DATA CHECKLIST

The following data will be required before an estimate of irregular migration can be successfully completed. The data will need to be provided across comparable time periods and reasonably up to date. We suggest that data collected more than five years ago are of limited use in making estimates of current stock or flows. Ideally all data should be gender-and-age-disaggregated.

| Estimate | | Information type | Data required | Available? (tick) |
|----------|--------------------|---|---|----------------------|
| STOCKS | | Number of non-citizens living in country | Preferred: recent census data Alternative: demographic survey data with sample weights for extrapolation | |
| | | Number of authorized non-citizens living in country | Data on numbers of currently valid permits / visas and their durations, including permanent residents | |
| FLOWS | Geographic inflow | Number of individuals entering the country illegally | Data on apprehensions at borders | |
| | Geographic outflow | Number of individuals repatriated and leaving voluntarily | Data on repatriations and border crossings | |
| | Bureaucratic flow | Permit overstayers Permit violations | Data on number of permits issued, cancelled and expired, departures of individuals by permit / visa type, and permit durations Labour inspection data on number of individuals employed by inspected companies, numbers found to be working illegally, and total working population by employment sector | |

| | | | | |
|--|------------------|--|--|--|
| | Demographic flow | Births and deaths of individuals with irregular status | 1. Government data, e.g. from social protection ministry | |
|--|------------------|--|--|--|

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