MAFE Migrations between Africa and Europe

MAFE Methodological Note 7

Introduction to the MAFE datasets

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May 2014

ined INSTITUT NATIONAL D'ÉTUDES DÉMOGRAPHIQUES

Agence Nationale de la Recherche ANR

îledeFrance

Funded under the Socio-economic Sciences & Humanities Theme

SEVENTH FRAMEWORK PROGRAMME

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1 INTRODUCTION

The aim of this document is to provide an introduction to the MAFE datasets. Starting to use any new dataset is always challenging. This is especially true with complex biographical data, such as those of the MAFE life event history questionnaire. This document aims at giving basic information to help users understand the structure and content of the dataset.

More detailed information is available on the project website (mafeproject.site.ined.fr/en/), especially:

-A series of **methodological notes** at:

-A list of publications and a collection of **working papers** offering an overview of analyses that can be carried out using the MAFE data at:

-The **survey questionnaires** in French, English, Spanish and Italian

-The interviewers' **handbooks**

-The **codebooks**.

The full documentation of the MAFE dataset is also available at :

http://nesstar.ined.fr/webview/?v=2&study=http://nesstar.ined.fr/obj/fCatalog/Catalog17&language=en[1]

2 PRACTICALITIES

2.1 How to access the MAFE data

The MAFE datasets are made available to the international scientific community through the portal of the Réseau Quetelet (http://www.reseau-quetelet.cnrs.fr).

To directly order the MAFE datasets, go to:

https://quetelet.casd.eu/en/utilisateur/connexion

and create your user account (or log in if you already have one).

Once connected, click the tab "New resquest". You'll be asked to provide some information, such as the title and a description of your reasearch project. Then click on "Select studies", where you can either find the MAFE datasets by clicking on INED's tab or by searching "MAFE" thanks to the filter tool. Don't forget to validate your request (at the bottom of the page).

When your request is complete, it will be checked within a few days (waiting time may vary) by someone at INED. If your order is approved, you will be requested to sign and send back a

[1] The right part of this web page is in French, but the details on MAFE (on the left) are in English.

printed obligations form. Once your form has been received at INED, you will be able to download the MAFE data online (through the Réseau Quetelet portal).

All files disseminated via the Réseau Quetelet are available free of charge for use in research. All commercial use is therefore prohibited.

If you wish to consult the content of all MAFE's datasets before ordering them, you can use INED's Nesstar webview tool at:

http://nesstar.ined.fr/webview/?v=2&study=http://nesstar.ined.fr/obj/fCatalog/Catalog17&language=en[1]

2.2 Software

2.2.1. Stata

The MAFE datasets are made available in **STATA 13**. However, all files have been saved in a format that can be opened with previous versions of **STATA (10 to 12)**, using the `saveold` command.

For v10-12 users: The command **`use13`** allows you to load datasets created by Stata 13.

To install the command :

```
findit use13
```

or

```
ssc install use13
```

To open a file created with Stata 13, use the following command (giving the appropriate filename) :

```
use13 “sn_qb_activity.dta” [, clear]
```

2.2.2. SAS

A Stata data file can be read via the menu (**File** -> **Import Data** -> **Data...**) or via syntax with the **proc import** command:

```
proc import
datafile="D:\MAFE\SENEGAL\BIOGRAPHIC_DATA\sn_qb_association.dta"
out=mafe.association dbms = dta replace;
run;
proc contents data= mafe.association;
run;
```

Alphabetical list of variables and attributes

N	Variable	Type	Length.	Format	Informat	Title
8	age_survey	Num.	8			Age at survey
16	flag_age	Num.	8	FLAG_AGA.		Less than 25 years and more than 75 years

Alphabetical list of variables and attributes

N	Variable	Type	Length.	Format	Informat	Title
18	flag_arrival	Num.	8	FLAG_ARA.		First migration in Europe before 18
17	flag_visitor	Num.	8	FLAG_VIA.		Resident in Europe but surveyed in Africa
15	id_country	Texte	2	$2.	$2.	Country of the survey
1	ident	Texte	7	$7.	$7.	Biographic individual identifier
2	n_indiv	Num.	8			ID of the individual in the HH
3	n_menage	Num.	8			ID of the HH
4	num_coti	Num.	8			Contribution number
11	num_dr	Texte	2	$2.	$2.	Constructed ID of the PSU
7	q1	Num.	8	Q1A.		Sex
10	q18	Num.	8	Q18A.		Which is the last school year you attended
5	q1701d	Num.	8	Q1701DA.		Start year
6	q1701f	Num.	8	Q1701FA.		End year
9	q1a	Num.	8	Q1A_1A.		Year of birth
13	strata_area	Num.	8			Stratum of the CD defined by the population census
12	strata_hh	Num.	8	STRATA_A.		HH with migrants
14	strata_ind	Num.	8	STRATA1A.		Presence of migrant in the HH during the census
20	weight_all	Num.	8			Weighting normalized on the 4 countries
21	weight_ctry	Num.	8			Weighting normalized by country
19	weight_eur	Num.	8			Weighting normalized on the 3 European countries

2.2.3. SPSS (version 15 or above)

A Stata data file can be read via menu (**File** -> **Open** -> **Data...**) or via syntax with the **get stata file** command:

```
get stata
file=D:\MAFE\SENEGAL\BIOGRAPHIC_DATA\sn_qb_association.dta'
```

2.2.4. R

First install the **foreign** package from CRAN's mirror website

```
library(foreign)
mafe.association <-
read.dta("D:\MAFE\SENEGAL\BIOGRAPHIC_DATA\sn_qb_association.dt
a ", convert.factors = TRUE)
```

2.3 How to cite MAFE

Any user of the MAFE data should properly cite as follows:

In English: The MAFE project is coordinated by INED (C. Beauchemin) in partnership with the Université catholique de Louvain (B. Schoumaker), Maastricht University (V. Mazzucato), the Université Cheikh Anta Diop (P. Sakho), the Université de Kinshasa (J. Mangalu), the University of Ghana (P. Quartey), the Universitat Pompeu Fabra (P. Baizan), the Consejo Superior de Investigaciones Científicas (A. González-Ferrer), the Forum Internazionale ed Europeo di Ricerche sull'Immigrazione (E. Castagnone), and the University of Sussex (R. Black). The MAFE project has received funding from the European Community's Seventh Framework Programme under grant agreement 217206. The MAFE-Senegal survey was conducted with the financial support of INED, the Agence Nationale de la Recherche (France), the Région Ile de France and the FSP programme 'International Migrations, territorial reorganizations and development of the countries of the South'. For more details, see: http://mafeproject.site.ined.fr/

In French: Le projet MAFE est coordonné par l'INED (C. Beauchemin), en partenariat avec l'Université catholique de Louvain (B. Schoumaker), la Maastricht University (V. Mazzucato), l'Université Cheikh Anta Diop (P. Sakho), l'Université de Kinshasa (J. Mangalu), l'University of Ghana (P. Quartey), l'Universitat Pompeu Fabra (P. Baizan), le Consejo Superior de Investigaciones Científicas (A. González-Ferrer), le Forum Internazionale ed Europeo di Ricerche sull'Immigrazione (E. Castagnone), et l'University of Sussex (R. Black). Le projet MAFE a reçu un financement du Septième Programme-cadre de la Communauté européenne (subvention 217206). L'enquête MAFE-Sénégal a été réalisée grâce au soutien financier de l'INED, de l'Agence Nationale de la Recherche, de la région Ile de France, et du programme FSP 'Migrations internationales, recompositions territoriales et développement dans les pays du Sud'. Pour plus d'information, voir : http://mafeproject.site.ined.fr/

In addition, for survey design, users can refer to the following documents:

Beauchemin, C. (2012). Migrations between Africa and Europe: Rationale for a Survey Design. MAFE Methodological Note 5. Paris, Ined: 45.

Schoumaker, B., C. Mezger, N. Razafindratsima and A. Bringé (2013). Sampling and Computation Weights in the MAFE Surveys. MAFE Methodological Note 6: 73.

These MAFE methodological notes are available at:
http://mafeproject.site.ined.fr/en/methodo/methodological_notes/

3 GENERAL DESIGN OF THE MAFE PROJECT

3.1 General design

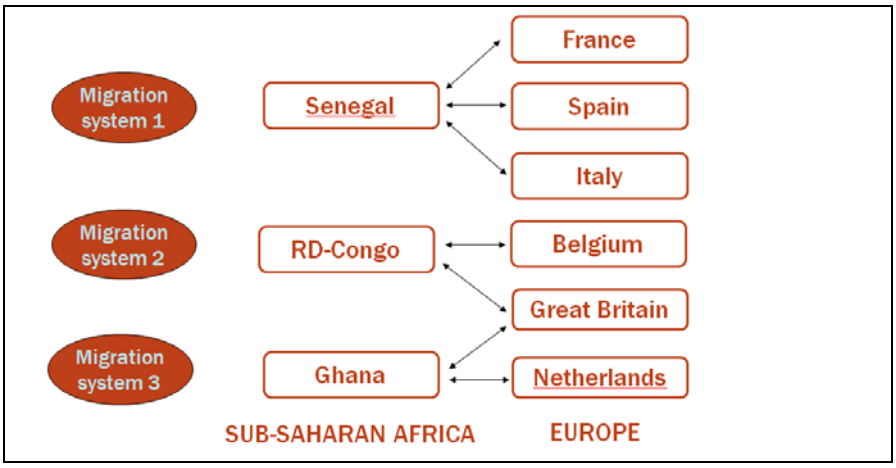
A full description of the survey design can be found in the above cited texts. The main features of the MAFE project data can be summarized as follows:

1. The MAFE data are **comparative** across 3 sub-Saharan migration systems (see Figure 1): migration from and to the Democratic Republic of Congo (Congo, in the rest of this document), from and to Senegal, and from and to Ghana, with a focus on immigration in Europe. Note that (almost) exactly the same questionnaires were used in all countries, whatever the country where the data was collected and whatever the migratory status of the respondents (current migrant, returnee, non-migrant). As a result, all datasets have exactly the same structure. The differences between MAFE-Congo, MAFE-Ghana and MAFE-Senegal are listed in Appendix 1.

2. The MAFE data are **transnational**, i.e. data were collected both in origin and destination countries, which means that data are available on migrants abroad at the time of the surveys, and also on returnees and non-migrants interviewed in origin countries. Note that data were collected only in the main cities of the origin countries. In Europe, samples included Congolese, Ghanaian and Senegalese migrants whatever their region of origin.

3. Two questionnaires were used: (1) a **household (HH) questionnaire** (only in origin countries), that includes information on the household members and also on (domestic and international) migrants living out of the household; and (2) a **life event history questionnaire**, comprising standardized life histories (in all countries, at origin and destination).

Figure 1. Countries involved in the MAFE Project



3.2 Points for special attention

Users of the MAFE data must be especially aware of some specific points to avoid making serious errors in their analyses.

Household (HH) Data. The term "household" refers to the fact that the data were collected among households in cities of origin countries. However, users must be aware that the data contain information not only on the household members but also on people who are living out of the household. Users must thus be careful in selecting the individuals on whom they want to produce results. More information is given in section 6.1.

Biographic data. The files containing the information collected through the life event history questionnaires are not 'simple' rectangular files with each observation (line) corresponding to an individual. All biographic files (except the "qb_general" files) are period-persons datasets in which each observation corresponds to a spell (with a duration which may vary for each spell). For example, a person who lived in three different places will be represented by 3 observations/lines in the "housing" datafile, i.e. one observation per housing spell. In any case, simple cross-tabulations using the biographic files would not describe the population at the time of the survey, except if the analyses were strictly restricted to the last spell of each individual. This type of data organization, suited to life history analysis, requires that users prepare the data very carefully before analysis. More details on the biographic file structure is given in section 7.

FORTHCOMING: in the MAFE Methodological Notes series, tutorials explaining how to manage and assemble MAFE datasets [see: http://mafeproject.site.ined.fr/en/methodo/methodological_notes/]

3.3 Organization of datasets and datafiles

3.3.1. Structure of the datasets

There are 3 large datasets, each one corresponding to a flow under study in MAFE: DR-Congo, Ghana, Senegal. For a single flow, the data collected in various countries are merged together. For instance, the biographic datasets related to Senegal include the data collected in Senegal, France, Italy and Spain.

Each of the flow-specific datasets combines two sub-datasets: one is related to the household questionnaire (two files, described in section 6), the other to the life event history questionnaire (18 files described in section 7, each one corresponding roughly to a questionnaire module).

The files names are indicative of their content, and are structured as follows:

```
flow_questionnaire_topic_date.dta
```

where :

-"flow" corresponds either to Congo (cgo), Ghana (gh) or Senegal (sn),

-"questionnaire" corresponds to household (qm for "questionnaire ménage" in French) or life event history (qb for "questionnaire biographique" in French),

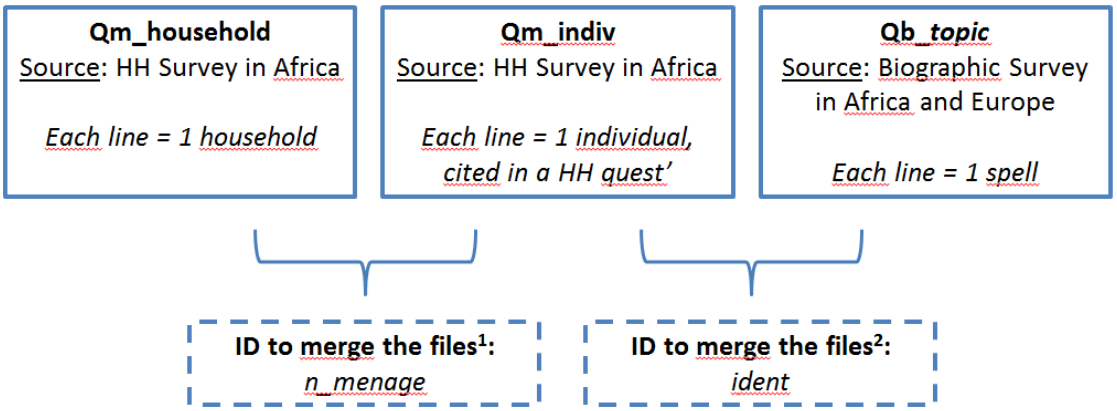
-"topic" corresponds to the topic of the file (see sections 6 and 7 for details),

-"date" indicates the version of the file (following this format:YYMMDD).

NB: The 3 MAFE datasets are almost identical. Differences are listed in Appendix 1.

3.3.2. Combining datasets - ID variables

The MAFE datasets contain a large number of files, some of which can be combined for analysis. The following figure shows how data collected at the household and individual levels can be merged.



Notes

[1] In principle, every individual in Qm_indiv belongs to a household present in the Qm_household file.

[2] Individuals present in the biographic datasets (Qb_*topic*) are not all present in Qm_indiv. In principle, migrants interviewed in Europe are not present in the Qm_indiv files (since they are not part of households interviewed in Africa). There is one exception: Senegalese migrants interviewed in Europe and who were cited in the household survey in Dakar are present both in the Qm_indiv and Qb_topic files (see section 4.1.3).

The various files of the biographic datasets can also be combined. Special care is needed. See section 7 for more details and forthcoming tutorials on the MAFE website.

4 SAMPLING & WEIGHTING

This section summarizes the information given in: Schoumaker, B., C. Mezger, N. Razafindratsima and A. Bringé (2013). Sampling and Computation Weights in the MAFE Surveys. MAFE Methodological Note 6: 73.

4.1 MAFE Samples

MAFE combines random sampling of households and individuals in origin countries (main cities), with quota sampling among migrant populations in destination countries. Overall,

between early 2008 and early 2010 (Table 1), more than 4,000 household questionnaires and 4,000 individual life event histories were successfully completed in 3 African countries (Senegal, Ghana, DR Congo), and around more than 1,400 life event histories of African migrants were collected in six European countries (Belgium, France, Italy, The Netherlands, Spain, UK).

Weights are available to adjust the results for the sampling strategy and to correct for non-response. The weighting variables are presented in the following section.

Table 1. Samples sizes and survey years by country

	MAFE-Congo			MAFE-Ghana			MAFE-Senegal			
Country of survey	Congo	UK	Belg.	Ghana	UK	Neth.	Senegal	France	Italy	Spain*
Survey year	2009	2009	2009 2010	2009	2009	2009 2010	2008	2008	2008	2008
Households	1,576	-	-	1,246	-	-	1,141	-	-	-
Individuals	1,638	149	279	1,243	273	149	1,062	201	205	200
* About 400 life event history questionnaires were completed in a new survey round in 2010 (data not yet available).										

4.1.1. Definition and Selection Criteria

Household Survey. Households are defined as "a person or a group of related or unrelated persons, who live together in the same housing unit, and who share meals with each other". They were randomly selected to be representative of the regions surveyed in Africa. Households reporting migrants abroad and/or return migrants were over-sampled. 3 strata were thus defined to this end:

- Households with returnees from abroad (whatever the country)
- Households with migrants abroad[2]
- Other non-migrant households

Life event history survey. The target population was defined using the same criteria in departure and destination countries in order to maximize the sample homogeneity:

- Respondents were aged 25-75 at the time of the survey;
- Respondents were born in one of the African country (DR Congo, Ghana, Senegal);
- Respondents have (or have had) the citizenship of the departure country (only applied in MAFE-Senegal);
- In Europe especially, migrants were included only if they had emigrated out of Africa at age 18 or later, for a stay of at least one year.

[2] In Senegal, households with returnees and with migrants abroad were merged into a single stratum.

NB : During the field work, some individuals who did not strictly comply with the full set of criteria were nevertheless surveyed. They were kept in the datasets and marked with flag_variables (see 2.4.1).

Individuals were selected to fill 4 strata according to their migration status:

- Migrants at the time of the survey (surveyed in Europe only);
- Return migrants: those who have lived at least one year out of their origin country, whatever the country (surveyed in Africa only);
- Migrants' partners left behind at origin: individuals (often women) whose partners are currently living abroad (surveyed in Africa only);
- Other non-migrants (surveyed in Africa only).

4.1.2. Sampling in Africa

In the three African countries, stratified random samples of households and individuals in the target areas were selected (see Table 2). The target areas were the city of Kinshasa in DR Congo, the city of Dakar in Senegal, and two cities (Accra and Kumasi) in Ghana. In each city, a sampling frame of primary sampling units was prepared, and primary sampling units randomly selected. A listing operation was carried out in each of the selected survey sites to prepare the sampling frame of households. The sampling frame at the second stage (households) was stratified, so that households with return migrants or migrants abroad could be oversampled. The number of households successfully interviewed was 1,141 in Senegal (2008), 1,246 in Ghana (2009) and 1,576 in DR Congo (2009).

In each selected household, one or several respondents were selected for the life event historysurvey. In Ghana and DR Congo, all returnees and partners of migrants living abroad were selected, and another (non-migrant) eligible member was randomly selected. In Senegal, up to two returnees and partners of migrants were randomly selected, and another individual was randomly selected. The number of life event histories successfully completed is close to the number of households (1,062 in Senegal, 1,243 in Ghana and 1,638 in DR Congo).

Table 2. Sampling characteristics in African countries

	Senegal	Ghana	Congo
Target areas	Dakar Region (26% of the population of the country)	Accra and Kumasi (12% of the population of the country)	Kinshasa (17% of the population of the country)
Stratification	First stage: 10 strata based on the proportion of international migrants.	First stage: two cities (Accra and Kumasi).	First stage : 3 strata based on prevalence of migration
	Second stage: 2 strata households with and without migrants	Second stage: 3 strata: households with migrants abroad, with return migrants, without migrants	Second stage: 3 strata: households with migrants abroad, with return migrants, without migrants
	Third stage: 3 strata: returnees, partners left behind and other non-migrants	Third stage: 3 strata: returnees, partners left behind and other non-migrants	Third stage: 3 strata: returnees, partners left behind and other non-migrants
1st stage: selection of primary sampling units	Selection of 60 census enumeration areas.	Selection of 60 census enumeration areas in Accra and 20 in Kumasi	Selection of 29 neighbourhoods and 3 streets per neighbourhood (87

	Senegal	Ghana	Congo
	Sampling frame: 2002 Population and Housing Census	Sampling frame: 2000 Population and Housing Census	sampling units) Sampling frame: Sampling frame of the 2007 DHS
2nd stage: selection of households	Random selection of 22 households per enumeration area. 11households selected in each of the two strata. If fewer than 11 households available in one or several strata, the remaining households are selected in the other stratum.	Random selection of 24 households per enumeration area. 8 households selected in each of the 3 strata. If fewer than 8 households available in one or several strata, the remaining households are selected in the other stratum.	Random selection of 21 households per enumeration area. 7 households selected in each of the 3 strata. If fewer than 7 households available in one or several strata, the remaining households are selected in the other stratum. In a few streets, there were fewer than 21 households; all of them were selected.
3rd stage: selection of individuals	People aged 25-75, born in Senegal and who have/had Senegalese citizenship. Up to two return migrants and partners of migrants, and one randomly selected other eligible person.	People aged 25-75, born in Ghana. All the return migrants and partners of migrants, and one randomly selected other eligible person.	People aged 25-75, born in Congo. All the return migrants and partners of migrants, and one randomly selected other eligible person.
Sample size (selected households)	1,320 households	1,920 households (1,440 in Accra and 480 in Kumasi)	1,773 households
Completed household questionnaires*	1,141 households, including: Non-migrant HH: 458 HH with returnee(s): 205 HH with current migrant(s): 617	1,246 households, including Non-migrant HH: 449 HH with returnee(s): 346 HH with current migrant(s): 675 Household with returnees and current migrants: 224.	1,576 households, including Non-migrant HH: 470 HH with returnee(s): 351 HH with current migrant(s): 1,027 Household with returnees and current migrants: 272.
Household response rate	86.4 %	64.9	88.9 %
Sample size (selected individuals)	1,387	1,490	1,946
Completed life event history questionnaires	1,062 individuals, including: Returnees: 193 Partners left behind: 101 Other non-migrants: 768	1,243 individuals, including: Returnees: 319 Partners left behind: 84 Other non-migrants: 840	1,638 individuals, including: Returnees:322 Partners left behind: 77 Other non-migrants: 1,239
Individual response rate	76.6 %	83.4 %	84.2 %
Overall response rate	66.1%	54.1 %	74.9 %

Adapted from: Schoumaker, B. and A. Diagne (2010). "Migrations between Africa and Europe: Data Collection Report." MAFE Methodological Report(2): 26. **NB:** Numbers in this table are smaller than in the cited report because some individuals were dropped to comply more strictly with the selection criteria.

* The sum of non-migrant households with the households comprising returnees and left behind partners may be higher than the total number of surveyed households because one household may include both returnees and left behind partners.

4.1.3. Sampling in Europe

In five of the six European countries, no suitable sampling frame was available to select randomly individual respondents (i.e. regular and irregular migrants). As a result, quota sampling was used. In all countries, the quotas were set by age and gender at least (see Table 3). In France, the socio-occupational category was also included as a quota criterion,

while in Belgium and the UK, the place of residence was used to set the quotas. In most countries, sub-regions with the largest numbers of migrants were selected.

Randomness was included in the samples in different ways. For instance, in Belgium, a random sample of places was selected according to the number of people of Congolese origin living in there The combination of different recruitment methods also ensured that different types of persons had a probability of being included in the sample. For instance, some respondents were recruited in public spaces (street, metro station, hairdresser…), others were randomly selected from list of volunteers identified in churches, etc. In France, Italy and Spain, some of the respondents were also selected using the contacts obtained in the household survey in Senegal[3].

Overall, around 200 migrants were interviewed in each destination country (Table 3). The number was slightly lower in the UK (around 150 per origin country) and higher in the Netherlands and Belgium (around 280). About 1,450 African migrants have been interviewed in Europe. A further survey round was carried out in Spain, where 400 additional migrants were surveyed in 2010. The data from this latest survey are not yet available.

Table 3. Sampling characteristics in European countries

Country	Target areas	Sample size	Quotas	Recruitment methods
MAFE-Senegal				
France	3 selected regions: Ile de France, around Paris; Rhône-Alpes, around Lyon; Provence-Alpes-Côte d'Azur, around Marseille.	201 (46% females), including undocumented migrants - at the time of the survey: 12%(1) - in the past(2): 29% 80 % have lived at least one year in the region of Dakar	By age, gender and socio-economic status	Selection from contacts obtained in Senegal, Public spaces, migrant associations, snowballing, interviewers' contacts
Italy	4 selected regions: Lombardia, Emilia Romagna, Toscana, Campania.	205 (39% females), including undocumented migrants - at the time of the survey: 17% - in the past: 46% 54% have lived at least one year in the region of Dakar	By age and gender	Selection from contacts obtained in Senegal, Public spaces, migrant associations, snowballing, interviewers' contacts
Spain	12 provinces: Almería (Andalucía); Alicante & Valencia (Comunidad Valenciana); Barcelona, Lérida, Tarragona & Gerona (Cataluña) ; Madrid (Comunidad de Madrid); Zaragoza (Aragón); Las Palmas (Islas Canarias); Murcia (Comunidad Autónoma de Murcia) ; Baleares (Islas Baleares)	200 (51% females), including undocumented migrants - at the time of the survey: 18% - in the past: 57% 61 % have lived at least one year in the region of Dakar. NB: an additional sample of around 400 people will be	Random sample from Padron	Population register (Padron) & contacts obtained in Senegal

[3] For more details, see : Beauchemin, C. and A. Gonzalez-Ferrer (2011). "Sampling international migrants with origin-based snowballing method: New evidence on biases and limitations." Demographic Research 25(3): 103-134.

Country	Target areas	Sample size	Quotas	Recruitment methods
		added, thanks to a new survey round carried out in 2010.		
MAFE-Congo				
Belgium	Whole country	279 (45% females), including undocumented migrants - at the time of the survey: 10% - in the past: 33% 87.5% have lived at least one year in the region of Kinshasa	By age, gender and place of residence	Public spaces, migrant associations, churches, snowballing, phonebook, centers for asylum seekers, interviewers' contacts
United Kingdom	Whole country	149 (50% females), including undocumented migrants - at the time of the survey: 12% - in the past: 52% 93.3 % have lived at least one year in the region of Kinshasa	By age, gender and place of residence	Public spaces, churches, snowballing, interviewers' contacts
MAFE-Ghana				
The Netherlands	3 cities (in 3 different provinces): Amsterdam(North Holland); The Hague (South Holland); Almere (Flevoland)	272 (47% females), including undocumented migrants - at the time of the survey: 19% - in the past: 56% 72.5% have lived at least one year in the greater region of Accra or Kumasi area	By age and gender	Public spaces, churches, snowballing, interviewers' contacts
United Kingdom	Whole country	149 (48% of females), including undocumented migrants - at the time of the survey: 7% - in the past:14% 79.2% have lived at least one year in the greater region of Accra or Kumasi area	By age, gender and place of residence	Public spaces, churches, snowballing, interviewers' contacts

Adapted from: Schoumaker, B. and A. Diagne (2010). "Migrations between Africa and Europe: Data Collection Report." MAFE Methodological Report(2): 26. **NB:** Numbers in this table are smaller than in the cited report because some individuals were dropped to comply more strictly with the selection criteria.

[1] Non-weighted percentage of respondents who reported not holding a residence permit at the time of the survey.

[2] Non-weighted percentage of respondents who reported not holding a residence permit at some point in their migrant life for a period of at least one year (i.e. at the time of the survey or sometime in the past when they were living out of their origin country).

4.2 Sampling and weighting variables

This section provides a description of the weighting and stratification variables available in the datasets. More detailed information on the weighting methodology can be found in: Schoumaker, B., C. Mezger, N. Razafindratsima and A. Bringé (2013). Sampling and Computation Weights in the MAFE Surveys. MAFE Methodological Note 6: 73.

4.2.1. Selection variables

Flag variables have been introduced to mark some individuals who did not comply totally the full set of selection criteria (Table 4).

Table 4. Flag variables on selection criteria (biographic datasets)

Name of the flag variable	Dataset	Description	Number of individuals for which flag_*=1
flag_age	qb_general	The migrant is younger than 25 or older than 75 at the time of the survey. 0 : no / 1 : yes	7 individuals in Ghana 4 individuals in Senegal Note: these individuals have ages very close to the 25-75 age limits.
flag_arrival	qb_migration qb_house_period	The migrant (current or returnee) first arrived in Europe before age 18. 0 : no / 1 : yes	7 individuals in Ghana 9 individuals in Senegal 13 individuals in DR Congo
flag_visitor	qb_general	The migrant was living in Europe at the time of the survey, but was surveyed in Africa during a visit. 0 : no / 1 : yes	3 individuals in Senegal Note : in these cases, id_country=country of residence in Europe (even though the questionnaire was completed in Senegal)

The **"source" variable** indicates the source through which individuals where sampled in the field. The respondent selection method varies according to the country, which explains why some categories of the "source" variable are absent in some files, as shown in the following table

Individuals sampling source (categories of the "source" variable)	MAFE-Senegal		MAFE-Congo		MAFE-Ghana	
	In Senegal	In Europe	In Congo	In Europe	In Ghana	In Europe
Household in Africa	Yes	Yes*	Yes	No	Yes	No
Snow-balling	No	Yes	No	Yes	No	Yes
Public place	No	Yes	No	Yes	No	Yes
Association	No	No**	No	Yes	No	Yes
Interviewer's contact	No	No**	No	Yes	No	Yes
Padron	No	Yes (only in Spain)	No	No	No	No
Other	No	Yes**	No	Yes	No	Yes

* Some migrants in Europe were found thanks to contacts obtained in Dakar from the surveyed households.

** Some Senegalese migrants in France and Italy were selected through associations and contacts. They belong to the "Other" category.

4.2.2. Stratification variables

In African countries, the samples were stratified at 3 levels. The following stratification variables are made available:

Table 5. Stratification variables in African countries

Level of stratification	Variable name	variable description
Level 1 **Survey Area** (available in Household and Biographic datasets)	strata_area	- In **Senegal**, 10 strata of equal size (equal number of districts) defined according to migration prevalence in each survey area (proportion of households with at least one migrant according to the 2002 Census). Strata 1 grouped districts where the proportion of households with migrants abroad varied from 0 to 1%. Strata 2: 1.1 to 5.4%. Strata 3: 5.5 to 7.4%. Strata 4: 7.5 to 9.2%. Strata 5: 9.3 to 10.7%. Strata 6: 10.8 to 12.6%. Strata 7: 12.7 to 14.7%. Strata 8: 14.8 to 17.3%. Strata 9: 17.4 to 21.6%. Strata 10: 21.7 to 100%. - In **Congo**, 3 strata defined according to migration prevalence in each survey area, as reported by knowledgeable persons (1= High level of migration ; 2 = Medium level ; 3= low level) - In **Ghana**, region area (1=Accra ; 2=Kumassi)
Level 2 **Household** (available in Household and Biographic datasets)	strata_hh	Stratification by household migrant status according to the screening survey. Note: the household migrant status in the screening survey may be different from what was actually observed in the household survey (see the following variables: hmigtot and hmigret) - in **Senegal** : 0=non migrant HH ; 1= HH with returnee(s) or migrant(s) abroad - in **Ghana** and **Congo** : 0=HH with no migrant ; 1=HH with returnee(s) ; 2=HH with current migrants
Level 3 **Individual** (available only in the Biographic datasets)	strata_ind	In all African countries, 3 strata according to the individuals' migratory status. The categories are the following: 1 = return migrants ; 2= spouse of a migrant ; 3 = Other non migrant. See section 4.1.2. Note: may be different from what was actually observed in the individual data (see section 7.2.1 about the following variables: migr_cur, migr_ret, migr_cjt, migr_no)

4.2.3. Clustering variables

Respondents are clustered at several levels. The following table indicates the name and nature of the clustering variables, and also the datasets in which they are available.

Variable name	variable description	Availability of the variables		
		Household data	Biographic data	
			Africa	Europe
id_country	Identifier of the country where the data was collected: Es=Spain, Fr=France, It=Italy, Sn=Senegal, B=Belgium, C=Congo, G= Ghana, N=Netherlands, U=United Kingdom	NO	YES	YES
regionenq	Identifier of the region where the data was collected	NO	YES	YES
num_dr	Identifier of the primary sampling unit (PSU, census distrit in Senegal).	YES	YES	NO

4.2.4. Weighting variables

Four weighting variables are available in the MAFE datasets, one related to the household data and three others to the individual data. All weights are normalized, i.e. the sum of the weights is equal to the sample size.

Household sample. The variable **weight_hhd** represents normalized weights to be used in the analyses related to the household data, whatever the file used.

Biographic sample. There are three different weight variables in the data files of the MAFE individual surveys. They were computed at three different levels:

- **weight_ctry** is the variable to use when working on a single country (for example, the Senegalese population sampled only in Senegal, or in any single European country).
- **weight_eur** is the variable to use when working on the European countries pooled together (for example, the Senegalese population sampled in France, Italy and Spain). It should not be used if the analyses include individuals surveyed in Africa.
- **weight_all** is the variable to use when working on all countries of a flow-specific MAFE survey (for example, Senegalese population from Senegalese, French, Italian and Spanish samples).

For details on weight computation see Schoumaker et al. (2013, op. cit.), a document that also provides information on when and how to use weights with the MAFE data.

Table 6 provides a full description of weight variables.

Table 6. Weight variables description

Dataset	Weight name	To be used for analyses on…	Sum	Number of missing values	Variation coefficient (%)	Min	Max
MAFE-Senegal							
Household	weight_hhd	Households	1,141	0	81.5	0.09	4.02
Biographic	weight_all	All African and European countries together (Senegal, France, Italy and Spain)	1,668	0	131.0	0.04	7.22
	weight_eur	All European countries together (France, Italy and Spain)	606	1062	65.9	0.12	2.93
	weight_ctry	Spain France Italy Senegal	200 201 205 1,062	0 0 0 0	111.4 27.5 57.8 110.4	0.16 0.72 0.15 0.05	3.85 1.45 1.66 5.27
MAFE-Congo							
Household	weight_hhd	Households	1,576	0	133.0	0.06	5.47
Biographic	weight_all	All African and European countries together (Congo, UK and Belgium)	2,066	0	153.9	0.02	6.52
	We ight_eur	All European countries together (UK and Belgium)	428	1638	43.6	0.23	1.72
	weight_ctry	Belgium United Kingdom Congo	279 1,638 149	0 0 0	44.3 32.0 119.5	0.61 0.18 0.05	1.86 1.35 5.26

Dataset	Weight name	To be used for analyses on…	Sum	Number of missing values	Variation coefficient (%)	Min	Max
MAFE-Ghana							
Household	weight_hhd	Households	1,246	0	117.55	0.09	8.20
Biographic	weight_all	All African and European countries together (Ghana, UK and Netherlands)	1,666	0	153.1	0.02	9.09
	weight_eur	All European countries together (UK and Netherlands)	422	1247	115.6	0.09	3.75
	weight_ctry	Netherlands United Kingdoms Ghana	273 149 1,244	0 0 0	44.1 30.0 132.0	0.43 0.62 0.07	1.64 1.54 7.4

5 FROM THE QUESTIONNAIRES TO THE DATASETS

Looking at the questionnaires is a good way to enter into the details of the MAFE data[4]. However, users must be aware that some of the information contained in the questionnaires was sometimes transformed for delivery in the datasets. Differences between the questionnaires and the datasets are explained in this section.

5.1 Language

The questionnaires are available in 4 languages. The life event history questionnaires were completed in French, English, Spanish and Italian, butthe household questionnaires in French and English only.

Databases are delivered in English. However labels are available in English and French. Users of the Stata software can switch from one language to the other using the "mlanguage package" (available since Stata v10).

How to install this package:

- in your command window: enter `help mlanguage`
- a new window opens and proposes to install the "mlanguage package"
- click on the link and wait for the installation

Some basic things to know about the `mlanguage` command:

[4]Questionnaires are available at: http://mafeproject.site.ined.fr/en/methodo/methodo/

- if you enter `mlanguage`: Stata will tell you how many languages you can use for the table and the name of these languages. Here you will just have “fr” for French and “en” for English. Using this command, you will also know which language is activated.
- if you enter `mlanguage select fr` or `label language fr:` you choose to use French (`en` for English).

WARNING: if you merge files that have a different language, you will end up with a new file in which French and English will be mixed.

5.2 The yes-no answers

All “yes” / “no” answers have been recoded, in order to facilitate analyses.

Table 7. Coding of “Yes”/“No” answers

Meaning of the code	DATASET code	QUESTIONNAIRE code
Yes	1	1
No	0	2

5.3 Non-response codification

In the questionnaires, codes were used to distinguish the reasons why respondents did not answer certain questions. In the datasets (Stata format), these codes have been converted into various sorts of specific missing data (see Table 8).

Table 8. Non-response modalities

Meaning of the code	DATASET code	QUESTIONNAIRE code
No answer expected	.	.
Refusal to answer	.a	7777
No answer given	.b	8888
Don’t know	.c	9999

WARNING FOR STATA USERS: “.a”, “.b”, “.c” have the same status as “.”; so if you make a simple request such as: ***tab q106***, you will not have the answers with “.”, “.a”, “.b”, “.c”. To include them in your request you must use: ***tab q106, mis***.

Example:

```
tab q106

  At the beginning of |
    this relationship |
           she/he was |      Freq.     Percent        Cum.
----------------------+-----------------------------------
Single, never married |      1,676       80.35       80.35
              Married |        250       11.98       92.33
   Separated/Divorced |        137        6.57       98.90
              Widowed |         23        1.10      100.00
----------------------+-----------------------------------
                Total |      2,086      100.00

tab q106, mis

  At the beginning of |
    this relationship |
           she/he was |      Freq.     Percent        Cum.
----------------------+-----------------------------------
Single, never married |      1,676       71.41       71.41
              Married |        250       10.65       82.06
   Separated/Divorced |        137        5.84       87.90
              Widowed |         23        0.98       88.88
                    . |        246       10.48       99.36
     Refuse to answer |          3        0.13       99.49
            No answer |         12        0.51      100.00
----------------------+-----------------------------------
                Total |      2,347      100.00

tab q106, mis nolabel

     At the |
  beginning |
    of this |
relationshi |
   p she/he |
        was |      Freq.     Percent        Cum.
------------+-----------------------------------
          1 |      1,676       71.41       71.41
          2 |        250       10.65       82.06
          3 |        137        5.84       87.90
          4 |         23        0.98       88.88
          . |        246       10.48       99.36
         .a |          3        0.13       99.49
         .b |         12        0.51      100.00
------------+-----------------------------------
      Total |      2,347      100.00
```

WARNING FOR SPSS USERS: when the database is imported from Stata to SPSS, ".a", ".b" and".c" take the value "."

WARNING FOR SAS USERS: ".a" , ".b" and".c" take the value "A", "B", "C"

Example:

```
proc freq data=vm.sn_qb_union_130419;
table q106 / missing;
```

```
run;
```

```
At the beginning of this relationship he/he was
q106  Frequency   Percentage   Cum. Frequency   Cum. Percentage
.     246         10.48        246              10.48
A     3           0.13         249              10.61
B     12          0.51         261              11.12
1     1676        71.41        1937             82.53
2     250         10.65        2187             93.18
3     137         5.84         2324             99.02
4     23          0.98         2347             100.00
```

5.4 Multiple answers

Some questions could be answered with several items (multiple-answer questions). Each of these questions has been transformed into a set of dichotomous variables in the datasets in which each possible answer (item) is a dichotomous variable (0 = No; 1 = Yes).

Example*:*

Let's look at the q307 question "When you arrived in this house you lived with…" Eleven answers were simultaneously possible, plus the "non-response modalities" (7777 = Refusal to answer; 8888 = No response; 9999 = Does not know). In the datasets, 2 formats are available:

-In the variable q307, all answers appear in the same field, as a list of modalities. Ex: if the person lived with her/his father (modality 1), her/his mother (modality 2) and her/his sisters (modality 5), we can see: "1 2 5".

-In addition, 12 variables q307_x are also available, in which x corresponds to the code of each modality (see Table 9)

Table 9. Dichotomous variables for multiple answers (Example: question Q307)

Variable name	variable type	variable description
q307_0	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives alone
q307_1	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with her/his father
q307_2	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with her/his mother
q307_3	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with her/his partner(s)
q307_4	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with her/his brother(s)
q307_5	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with her/his sister(s)
q307_6	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with her/his son(s)
q307_7	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with her/his daughter(s)
q307_8	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with another relative
q307_9	Dichotomous.	Ego lives with a friend(s)

Variable name	variable type	variable description
	2 modalities: 0=no; 1=yes.	
q307_10	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego lives with another person(s)
q307_NR	Dichotomous. 2 modalities: 0=no; 1=yes.	Ego did not answer this question

NB: the same approach has been used for the questions q407, q509, q514, q515, q610, q614, q615, q616, q617, q619, q707, q708, q805, b1, b3, c5, c6, c8, e4, e6, e15, e17, e20, e24, e27.

5.5 String variables

Some string variables are not completely clean (they may mix several languages, contain spelling errors, be incompletely coded…). This is especially true for location variables. However, all string variables are made available for users who might be interested by their content.

6 HOUSEHOLD DATASETS

The data collected with the household questionnaires have been arranged into two distinct sorts of datafiles: one contains the household-level information (qm_household), such as variables related to housing conditions; the other contains the information concerning the individuals (members of the household and external persons) listed in the roster. The two following sections present theses datasets in detail.

Table 10. List of the household datasets

Dataset	Level of observation	Identifying	Modules in the questionnaire	Number		
				Senegal	Ghana	Congo
qm_household	Household	n_menage	modules E & O	1,141	1,246	1,576
qm_indiv	All individuals cited in the HH questionnaire, including people who do not live in the household	Ident*	all modules	12,35	7,135	15,588
* In addition, the variable n_indiv identifies each individual within his/her household. Usually, n_indiv=1 for the household heads.						

6.1 Qm_household

6.1.1. Observations

The “Qm_household” files contain one line per household, i.e. a total of 1,246 HH in Ghana, 1,576 in Congo and 1,141 in Senegal.

6.1.2. Variables list

The dataset contains information on:

- HH characteristics (computed variables from modules A & B, see the list in Table 11; the stata codes used to create these variables are given in the codebooks)
- HH head characteristics: all variables from module A, and computed variables created for the dataset "qm_indiv" (Variables names: hh_a1 to hh_a21).
- Housing and assets of the HH head (module E)
- Information on the conduct of the interview (module O).

Table 11. Computed variables in Qm_household

Variable	Label / Description	Dichotomous Variables (0: No ; 1: yes)
hh_*	All HH head characteristics. The star (*) is replaced by the name of all variables contained in qm_indiv	-
hhmember	Total number of persons of the HH (living in or outside)	No
hmember	Total number of persons living in the HH (excluding the persons declared as living outside the HH, A4=2)	No
hchildin	Total number of children of the HH head living in the HH	No
hchild04	Total number of children aged 0-4 living in the HH	No
hchild511	Total number of children aged 5-12 living in the HH	No
hchild12	Total number of children aged 12+ living in the HH	No
hchildout	Total number of children of the HH head living outside the HH	No
hmigchild	Total number of children of HH head living abroad	No
hmigsons	Total number of sons of the HH head living abroad	No
hmigdaughters	Total number of daughters of the HH head living abroad	No
hspout	Total number of partners of the HH head living outside the HH, whatever the country of residence (Congo, Ghana, Senegal or other)	No
hmigspcm	Total number of partners of the HH head living abroad	No
hmigsptot	Total number of partners (of the HH head or of the other members of the HH) living abroad	No
hmigother	Total number of persons living abroad and maintaining regular contact with the HH during the 12 months before the survey (excluding the other migrants category – partners, children)	No
hmigtot	Total number of persons living outside Senegal, whatever the country of residence (hmigother + hmigsptot + hmigchild)	No
hmigafr	Total number of HH members living in Africa, excluding Congo, Ghana or Senegal	No
hmigeur	Total number of HH members living in Europe	No
hmigreste	Total number of HH members living outside Congo, Ghana, Senegal, neither in Africa, nor in Europe	No
hmigret	Total number of migrants back in the HH (individuals which have lived abroad for at least one year)	No
hreturn	HH with return migrants	Yes
hmigrant	HH with actual migrants	Yes
hnonmig	HH which have never had migrants	Yes
hworkers	Number of persons of the HH in employment (A19=1)	Yes

hratocc	Housing density (persons per room)	Yes
hhwealth	Wealth index of the HH	Yes
hnucleus	Total number of nuclei in the HH. NB: available only in Senegal	Yes

6.2 Qm_indiv

6.2.1. Observations

The file contains one line per individual declared in the HH questionnaire, i.e. a total of 7,135 individuals in Ghana, 15,588 in Congo and 12,350 in Senegal. Observations in this data file correspond to:

- Individuals living in the household at the time of the survey (A4=1)
- Individuals living outside the household (A4=2) included in the roster if they enter into one of the following categories:
    1. children of the HH head who no longer live with her/him, whatever her/his place of residence;
    2. partners of household members who live outside Congo, Ghana or Senegal;
    3. Mother and father of household members who live outside Congo or Ghana (NB: this category does not exist in the Senegalese questionnaire);
    4. other people living outside Congo, Ghana or Senegal and who had regular contact with the household during the 12 months before the survey.

WARNING! Don't forget that only some of the people listed in the household questionnaires, i.e. in "qm_indiv" are actual members of the households.

Furthermore, keep in mind that some individuals, in this dataset, have never lived in Congo, Ghana or Senegal. For example:

- Descendants of migrants, born in the destination country of their parents. Ex: the HH head is a grandfather whose son migrated to France, where he had children. These children can be mentioned by the grandfather in the third category "other persons living outside Senegal but who have maintained regular contact with the HH during the 12 months before the survey", even if they have never lived in Senegal.
- Relatives of immigrants in Congo, Ghana or Senegal. Ex: the HH head is an immigrant woman from Angola. She has left behind (in her home country) her husband and children. Even if they have never lived in Congo, she mentioned them in the HH questionnaire because they are in the third category.

6.2.2. Variables

The "qm_indiv" files contain all variables of the questionnaire, and some additional computed variables (see the list in Table 12, and the stata codes used to create these variables in the codebooks).

Table 12. Computed variables in Qm_indiv

Variable	Label / description	Dichotomous Variables (0: No ; 1: yes)
pmigrant	Current migrants: individuals outside HH living abroad	Yes
pmig_country	Country of residence of the current migrants	No
pmig_region	Residence region of the current migrants (Africa, Europe, other)	No
preturn	Return migrants: members of the HH who have lived at least on year abroad, whatever the country. Note that they may be abroad at the time of the survey (individuals who re-emigrated)	Yes
pretout	Current return migrants who are in Congo, Ghana or Senegal at the time of the survey	Yes
peverreturn	Actual migrants who have already come back to Congo, Ghana or Senegal	Yes
pimmig	Individuals who have immigrated to Congo, Ghana or Senegal, i.e. who were born abroad but came to settle there (whatever their nationalities)	Yes
hhmember	Total number of persons of the HH (living in or outside)	No
hmember	Total number of persons living in the HH (excluding the persons declared as living outside the HH, A4=2)	No
childhh	Children of the HH head living in the HH (including fostered and adopted children in Congo and Ghana)	No
hchildin	Total number of children of the HH head living in the HH	No
childage	Age class of the HH head children living in the HH (1 = from 0 to 4; 2 = from 5 to 12; 3 = more than 12)	No
hchild04	Total number of children aged 0-4 living in the HH	No
hchild511	Total number of children aged 5-12 living in the HH	No
hchild12	Total number of children aged 12+ living in the HH	No
childouthh	Children of the HH head living outside the HH	Yes
hchildout	Total number of children of the HH head living outside the HH	No
migchild	Children of the HH head living abroad	Yes
hmigchild	Total number of children of HH head living abroad	No
migs	Son of the HH head living abroad	Yes
hmigsons	Total number of sons of the HH head living abroad	No
migd	Daughter of the HH head living abroad	Yes
hmigdaughters	Total number of daughters of the HH head living abroad	No
out_spouse	Partner of the HH head living outside the HH	Yes
hspout	Total number of partners of the HH head living outside the HH, whatever the country of residence (Congo, Ghana, Senegal or other)	No
migspouse	Partner of the HH head living abroad	Yes
hmigspcm	Total number of partners of the HH head living abroad	No
migsp_any	Partner of someone in the HH living abroad	Yes
hmigsptot	Total number of partners (of the HH head or of the other members of the HH) living abroad	No
hmigother	Total number of persons living abroad and maintaining regular contact with the HH during the 12 months before the survey (excluding the other migrants category – partners, children)	No
hmigtot	Total number of persons living outside Senegal, whatever the country of residence (hmigother + hmigsptot + hmigchild)	No
hmigafr	Total number of HH members living in Africa, excluding Congo, Ghana or Senegal	No
hmigeur	Total number of HH members living in Europe	No

hmigreste	Total number of HH members living outside Congo, Ghana, Senegal, neither in Africa, nor in Europe	No
hmigret	Total number of migrants back in the HH (individuals which have lived abroad for at least one year)	No
hreturn	HH with return migrants	Yes
hmigrant	HH with actual migrants	Yes
hnonmig	HH which has never had migrants	Yes
worker	Individual in employment	Yes
hworkers	Number of HH members in employment (A19=1)	No
hnucleus	Total number of nuclei in the HH.NB: only in Senegal	No

7 BIOGRAPHIC DATASETS

Within each MAFE dataset (MAFE-Congo, MAFE-Ghana, MAFE-Senegal), the biographic dataset comprises 18 different files, each one corresponding to a module of the life event history questionnaire. The next section provides information on the general features of these various files and the following ones detail the content of each file.

7.1 General features

7.1.1. Observations

(i) *Number of observations*

Except the "qb_general" files, all biographic files are period-persons files, in which observations correspond to spells, events or states. In other terms, the biographic data show the respondents' trajectories in various domains explored in the questionnaire (family, occupation, housing, etc.).

All surveyed individuals are present in each file (even if they did not experienced an event of interest in the corresponding module). However, the number of observations may vary across individuals. For instance, in the file dedicated to children, a respondent who had 3 children will appear three times and a respondent who had 5 children will appear 5 times (one line per child). A respondentwho had no children will appear only once (with missing values in the variables describing the children). Table 13 shows the total number of observations in each biographic file.

Table 13. Biographic datasets description

Dataset name	From the questionnaire to the dataset[1]	Identifier Observation	Type of trajectory[2]		Number of events and Observations[3]			
		Rank of the event or state	Possible temporal overlapping	Continuous trajectory		Congo	Ghana	Senegal
qb_union	From columns to lines	num_union	Yes	No	Events	2,083	2,459	2101
					Obs.	2,425	2,598	2,347

Dataset name	From the questionnaire to the dataset[1]	Identifier Observation	Type of trajectory[2]		Number of events and Observations[3]			
		Rank of the event or state	Possible temporal overlapping	Continuous trajectory		Congo	Ghana	Senegal
qb_children	From columns to lines	num_enf	Yes	No	Events	7,522	3,977	4,890
					Obs.	7,897	4,375	5,295
qb_house	From columns to lines	num_log	No	Yes	Events	10,361	7,784	7,124
					Obs.	10,361	7,784	7124
qb_activity	From columns to lines	num_per	No	Yes	Events	9,906	8,148	7,293
					Obs.	9,906	8,148	7,293
qb_assets	From columns to lines	num_prop	Yes	No	Events	1,882	1,449	1,031
					Obs.	2,884	2,241	2,097
qb_migration	From columns to lines	num_mig	No	No	Events	1,122	1,043	1,209
					Obs.	2430	1958	2064
qb_return	From columns to lines	num_sr	No	No	Events	400	417	320
					Obs.	2,103	1,717	1,729
qb_mig_attempts	From columns to lines	num_tent	Yes	No	Events	233	191	243
					Obs.	2,107	1,707	1,729
qb_short_return	Complex transformation	num_sh_ret	No	No	Events	427	933	1,31
					Obs.	2,299	2,263	2,57
qb_short_stay	Complex transformation	num_stay	No	No	Events	1,946	1,179	1,470
					Obs.	1,946	2,428	2,642
qb_citizenship	Complex transformation	num_nat	No	Yes	Events	2,292	1,794	1,775
					Obs.	2,292	1,857	1,775
qb_asylum	Complex transformation	num_asyl	Yes	No	Events	276	21	12
					Obs.	2091	1673	1671
qb_residence_permit	Complex transformation	num_rp	Yes	No	Events	1,45	1,406	1,544
					Obs.	2798	2381	2447
qb_work_permit	Complex transformation	num_wp	Yes	No	Events	1,399	1,355	1,291
					Obs.	2,753	2,335	2,221
qb_transfer	From columns to lines	num_transr	No	No	Events	611	536	645
					Obs.	2,190	1,731	1,735
qb_association	From columns to lines	num_coti	No	No	Events	125	206	153
					Obs.	2,080	1,688	1,680
qb_network	Complex transformation	num_netmig	Yes	No	Events	9,928	5,994	6,442
					Obs.	9,928	6,429	6,690

[1] For more details, see section 7.1.2.

[2] For more details, see section 7.1.3.

[3] Interpretation: Example: MAFE-Congo, qb_union - 2,425 observations are recorded, including observations with missing information of respondents who never had a partnership. 2,083 unions (or partnerships) are actually recorded. Note that a same individual can have several partnerships either successively or at the same time (see column “possible temporal overlapping”).

(ii) *Start and end dates*

All observations are ordered following their date of occurrence. In every biographic datafile,

- a variable, named "**num_*"** , indicates the rank of the event (or state) in the respondent's life (see Table 13 for the exact name of the variable in each dataset). Two variables indicate the start and end dates of the event (or state):
- All variables corresponding to start dates are named "**q*xxx*d**" (xxx corresponding to the number of the question, and "d" standing for "début" in French)
- All variables corresponding to end dates are named "**q*xxx*f**" (xxx corresponding to the number of the question, and "f" standing for "fin" in French)

NB : "q*xxx*f" is **missing** when the period has not ended, i.e. when the situation described by the data is the situation at the time of the survey (for an example, see the dataset exerpt in the next section).

7.1.2. From the questionnaire modules to the datasets

In most modules of the life event history questionnaire, each event or state is recorded in a column and each variable (question) corresponds to a line . This structure is reversed in the datasets, where each event (or state) represents a line and each variable a column. This transformation from the questionnaire to the datasets is illustrated in the next example:

Example:

Questionnaire excerpt:

MODULE ASSOCIATIONS ident = F106 SEE THE GRID COLUMN 14

1700 – Count in the grid the number of periods Ego paid contributions to ASSOCIATIONS: |_0_|_2_| and fill in one column for each period

	1st Contribution	2nd Contribution	3rd Contribution	4th Contribution	5th Contribution
1701D – 1701F – Start and end years of contribution payments *Cross out if ongoing*	9 0 Start / 9 5 End	0 4 Start / / End	Start / End	Start / End	Start / End

In this module (above), each spell of contribution to a migrant association corresponds to a column. In the dateset (below), each spell is a line.

Dataset excerpt:

	ident	num_coti	q1701d	q1701f	q1	age_survey	q1a	q18
1	F106	1	1990	1995	Woman	43	1966	5th year(DESS,DEA or equivalent)
2	F106	2	2004	.	Woman	43	1966	5th year(DESS,DEA or equivalent)
3	F107	.	.	.	Man	26	1983	2nd year high school
4	F137	1	2004	2005	Man	36	1973	2nd year high school
5	F137	2	2007	2008	Man	36	1973	2nd year high school

q1701d is the start date of each contribution period, while **q1701f** is the end date and **num_coti** the rank of each contribution period for each individual. The file excerpt shows 3 distinct cases:

- The individual F106 joined associations twice. Between 1990 (q1701d) and 1995 (q1701f), and since 2004 (q1701f= "." Indicates that the situation is still valid at the time of the survey). In between, he was not affiliated, as shown by the time gap between the observations. Num_cot1 is the identifier of each period of contribution to an association.
- The individual F107 never joined an association (all variables describing association participation are missing)

- As F106, the individual F137 joined an association twice. Between 2000 and 2005, and then between 2007 and 2008. He left this association in 2008, before the time of the survey.

This type of transformation applies to most modules of the life event history survey. Some modules required different transformations. They are listed as "complex" in Table 13 and their transformation is fully explained in module-specific sections.

7.1.3. Different types of trajectories

The shape of the individual trajectories varies according to the subject of the file (or questionnaire module). Three types of trajectories can be found in the biographic MAFE datasets. Examples are given in the next sections. Table 13 shows what type of trajectory each file pertains to.

(i) *Discontinuous trajectories*

A trajectory is discontinuous when there may be a time gap between 2 observations of a same individual. The association module (qb_association file) provides a good example of this kind of file (see the example in the previous section).

(ii) *Continuous trajectories*

A trajectory is continuous when there is no possible time gap between 2 observations of a same individual. For example, all respondents always lived somewhere (usually in only one place). Thus their housing history is continuous: each spell of residence is immediately followed by another one. In continuous datafiles, for a one individual, the end date of an observation always corresponds to the start date of the next . In other terms: q*xxx*d(t+1) = q*xxx*f(t).

Example:

Excerpt of a "qb_house" file

ident	num_log	q301d	q301f	loc_house	q302
E2	1	1968	1998	Regional city	SENEGAL
E2	2	1998	1999	Abroad	MAURITANIA
E2	3	1999	.	Abroad	SPAIN

The individual E2 had three spells of residence. His first dwelling was in Dakar (Regional city of Senegal), where he lived from his birth in 1968 (q301d, start date) until 1998 (q301f end date). At this point (1998), he moved to Mauritania where he stayed until 1999. Then he migrated to Spain, where he was still living at the time of the survey.

(iii) *Temporal overlapping*

Temporal overlapping occurs when 2 observations overlap in the trajectory of one individual. For example: an individual can have 2 children at the same time; but he cannot declare 2 simultaneous places of residence (respondents had to declare their main place of residence). Similarly, in case of polygamy, one individual can have 2 partners at the same time. There may therefore be cases of temporal overlapping between two observations of a

same individual in the “qb_union” file. In this kind of dataset, more than one event (or state) may occur at the same time.

Example:

Excerpt of a “qb_children” dataset

	ident	num_enf	id_enf	q201n	q201d	q202
1	E40	1	E_E401	1997	.	1
2	E40	2	E_E402	1999	.	2
3	E40	3	E_E403	2005	.	3
4	E40	4	E_E404	2006	2007	4

Here, the individual E40 had her first child (E_E401) in 1997, the second (E_E402) in 1999, the third (E_E403) in 2005, and the last one (E_E404) in 2006. The three older children were still alive at the time of the survey (q201d is missing), but the last one died in 2007.

7.1.4. Variables common to all biographic datasets

All biographic files contain the variables included in the corresponding module of the questionnaire. In addition some basic variables are also available in every biographic file. Table 14 provides the list of these variables.

Table 14. List of variables included in every biographic file

Variable	Description
ident	Biographic individual identifier
n_indiv	ID of the individual in the HH (only for individuals who were recorded in the HH roster)
n_menage	ID of the HH (only for individuals who were recorded in the HH roster)
q1	Sex
age	Age at survey
q1a	Year of birth
q18	Educational level (Which is the last school year you attended?)
num_dr	Identifier of the primary sampling unit (PSU, census district in Senegal).
strata_area	Stratification variable – Level 1 (see Table 5)
strata_hh	Stratification variable – Level 2 (see Table 5)
strata_ind	Stratification variable – Level 3 (see Table 5)
id_country	Country of the survey
flag_age	Age below 25 years and above 75 years
flag_visitor	Resident in Europe but surveyed in Africa (only in MAFE-Senegal)
flag_arrival	First migration in Europe before age 18
weight_ctry	Weight for country specific analyses (see section 4.2.4, p.17)
weight_eur	Weight for analyses on all European countries of a specific flow (see section 4.2.4, p.17)
weight_all	Weight for analyses on all countries of a specific flow (see section 4.2.4, p.17)

7.1.5. Combining different biographic datasets

Analysing MAFE data usually involves assembling different files corresponding to different trajectories. For instance, to study the influence of migration experience on investments it is necessary, at the very least, to assemble the file describing residential trajectories and the file describing the respondent's investments in durable assets. Information from other files/modules should also be added if they influence the investment behavior[5].

Table 15 provides the list of identifier variables that can be used to merge the different biographic files.

- In most cases, "**Ident**" is the identifier to use, in addition to the variables that serve to order the events (start and/or end dates)
- In addition, the variables "**id_enf**" and "**id_uni**" should be used to link the network module (on the location of the partners and children and other members of the respondent's social network) with the modules describing the respondents' family histories (partnerships / unions and children).

Note that a practical training module will be made available in 2014 to explain how to merge the MAFE biographic datasets.

Table 15. Biographic datafiles identifier

Id variables	Description	Datasets
ident	Biographic individual identifier (respondent)	All
id_uni	Union ID	Network Union Children
id_enf	Children ID	Network Children

7.2 Description of every biographic dataset

The files are described in the order of the questionnaire modules.

7.2.1. Qb_general

Observations: 1 line per respondent.

Variables: This dataset contains variables that do not vary over time, i.e. answers to the introductory module of the questionnaire and to variables from the inter-modules section, plus some computed variables listed below.

[5] For an example of analysis on this topic, see : Mezger, C. and C. Beauchemin (2010). "The Role of International Migration Experience for Investment at Home: the Case of Senegal." MAFE Working Paper 12: 47.

Table 16. Computed variables in Qb_general

Variable name	variable Kind	variable description
migr_cur*	Categorical variable	Current migrant in Europe at the time of the survey (0=No; 1=Yes)
migr_ret*	Categorical variable	Return migrant in Africa at the time of the survey (0=No; 1=Yes)
migr_cjt*	Categorical variable	Non migrant partner (living in Africa) of a migrant at the time of the survey (0=No; 1=Yes)
migr_no*	Categorical variable	Other non migrant (living in Africa) at the time of the survey (0=No; 1=Yes)
q19d_c1	Categorical variable	Coded variable on highest educational qualification from the open question q19d
q19d_c2	Categorical variable	Coded variable on highest educational qualification from the open question q19d
q19e_c1 (not in MAFE Senegal)	Categorical variable	Coded variable on the subject area of the highest educational qualification(from the open question q19e)
q19e_c2 (not in MAFE Senegal)	Categorical variable	Coded variable on the subject area of the highest educational qualification(from the open question q19e
* A same individual can be coded 1 in several of the migratory status variables; e.g. one individual can be both returnee and partner of a migrant at the time of the survey. NB: these variables may show different results from the stratification variable (strata_ind), whose content was determined by answers given by proxy respondents in the household surveys. These variables (migr_*, presented in this table) are computed using the information obtained in the life event history surveys.		

7.2.2. Qb_union

Observations : One line per union for the respondents who reported at least one union, in addition to one line per individual who had no partnership.

Variables: This dataset contains all the answers to the Union module, in addition to the following:

Table 17. Computed variables in Qb_union

Variable name	variable Kind	variable description
id_uni	String variable	Variable computed from ident and num_union

7.2.3. Qb_children

Observations: One line per child for the respondents who reported at least one child, in addition to one line per individual who had no child.

Variables: This dataset contains all the answers to the Children module , in addition to the following:

Table 18. Computed variables in Qb_children

Variable name	variable Kind	variable description

id_enf	String variable	Variable computed from ident and num_enf
id_uni	String variable	Variable computed from ident and q203

7.2.4. Qb_house

Observations: One line per home for each respondent (everybody had to report at least one home).

Variables: This dataset contains…

- All the answers to the Housing module.
- A series of dichotomous variables created from the question q307 (multiple answers, see section 5.4, p.22)

7.2.5. Qb_activity

Observations: One line per activity for all the respondents (everybody reports at least one activity).

Variables: This dataset contains

- All the answers to the Activity module.
- A series of dichotomous variables created from the question q407 (multiple answers, see section 5.4, p.22)
- And the following variables:

Table 19. Computed variables in Qb_activity

Variable name	variable Kind	variable description
q403_c	categorical variable	Variable computed from the open question of q403.
isco	Categorical variable	International Standard Classification of Occupations Variable constructed (isco08) from q403. List of codes in Appendix 2.
isei	Categorical variable	International Socio Economic Index. Variable constructed from q403 [see Appendix 2]

7.2.6. Qb_assets

Observations: One line per property for each person who declared at least one property and one line per individual with no assets.

Variables: This dataset contains

- All the answers to the Assets & Business module.
- A series of dichotomous variables created from the questions q509, q514, q515 (multiple answers, see section 5.4, p.22)
- And the following variables:

Table 20. Computed variables in Qb_assets

Variable name	variable Kind	variable description
q508c2	Categorical variable	Variable computed from the open question q508
q508c1	Categorical variable	Variable computed from the open question q508

7.2.7. Qb_migration

Observations: One line per long & short stay outside Congo, Ghana or Senegal for each person who reports at least one stay and one line per individual who did no stay abroad.

Variables: This dataset contains

- All the answers to the module Long & Short Stays Outside Congo, Ghana or Senegal
- A series of dichotomous variables created from the question q610, q614, q615, q616, q617, q619 (multiple answers, see section 5.4, p.22)
- And the following variables:

Table 21. Computed variables in Qb_migration

Variable name	variable Kind	variable description
q604c2	Categorical variable	Reasons for migration coded level 2 (from q604)
q604c1	Categorical variable	Reasons for migration coded level 1 (from q604)
q605c2	Categorical variable	Reasons for the choice coded level 2 (from q605)
q605c1	Categorical variable	Reasons for the choice coded level 1 (from q605)

7.2.8. Qb_return

Observations: One line per return to Congo, Ghana or Senegal for each person who reported at least one return and one line for the other respondents. Note: returns listed in this module are returns that lasted at least 1 year and shorter returns but with the intention of settling. Other returns (less than a year without intention to resettle) are listed in the qb_short_return datafiles.

Variables: This dataset contains

- All the answers to the module Return to Congo, Ghana or Senegal.
- A series of dichotomous variables created from the question q707, q708 (multiple answers, see section 5.4, p.22)
- And the following variables:

Table 22. Computed variables in Qb_return

Variable name	variable Kind	variable description
q706c2	Categorical variable	Reasons for return coded level 2 (from 706)
q706c1	Categorical variable	Reasons for return coded level 1 (from 706)

7.2.9. Qb_mig_attempts

Observations: One line per attempt for each person who reported at least one attempt and one line for the other respondents.

Variables: This dataset contains

- All the answers to the Migration Attempts module.
- A series of dichotomous variables created from the question q805 (multiple answers, see section 5.4, p.22)
- And the following variables:

Table 23. Computed variables in Qb_mig_attempts

Variable name	variable Kind	variable description
q803c2	Categorical variable	Reasons for migration coded level 2 (from q803)
q803c1	Categorical variable	Reasons for migration coded level 1 (from q803)
q804c2	Categorical variable	Reasons for the choice coded level 2 (from q804)
q804c1	Categorical variable	Reasons for the choice coded level 1 (from q804)
q806c2	Categorical variable	Reasons for attempt failure coded level 2. (from q806)
q806c1	Categorical variable	Reasons for attempt failure coded level 1 (from q806)
q807c2	Categorical variable	Reasons for stopping attempt coded level 2 (from q807)
q807c1	Categorical variable	Reasons for stopping attempt coded level 1 (from q807)

7.2.10. Qb_short_return

Observations: One line per return to Congo, Ghana or Senegal of less than a year for each person who declared at least one short return (without a resettlement intention) or one line for a multiple return period; and one line for all other individuals. A multiple return period is a period during which the respondent returned regularly to his/her country of origin. They can be identified by comparing the start and end dates: they differ in case of a multiple return period, whereas they are identical in case of a single short return.

Variables: This dataset contains all the answers to the module Return to Congo, Ghana or Senegal for less than a year.

7.2.11. Qb_short_stay

Observations: One line per stay of less than a year outside Congo, Ghana or Senegal for each person who reported at least one stay.

Note: If over a period of several years the respondent travels every year to one or several countries for the same reason, these stays are grouped on a single line (this a case of “multiple stays”).

Variables: This dataset contains all the answers to the module Stays of Less than a Year outside Congo, Ghana or Senegal

From the questionnaire to dataset

Questionnaire

	Start and end years	COUNTRY note in plain text	Motive
1101D – 1101F 1st stay outside Ghana	97 (Start) 04 (End)	1101P Belgium	1101M 1. HOL 2. BUS
1102D – 1102F 2nd stay outside Ghana	05 (Start) 05 (End)	1102P Congo	1102M 1. HOL 2. BUS
1103D – 1103F 3rd stay outside Ghana	06 (Start) 06 (End)	1103P Mali	1103M 1. HOL 2. BUS
1104D – 1104F 4th stay outside Ghana	07 (Start) 07 (End)	1104P France	1104M 1. HOL 2. BUS
1105D – 1105F 5th stay outside Ghana	08 (Start) 08 (End)	1105P France	1105M 1. HOL 2. BUS

	Start and end years	COUNTRY note in plain text	Motive
1106D – 1106F 6th stay outside Ghana	08 (Start) 08 (End)	1106P United Kingdom	1106M 1. HOL 2. BUS
1107D – 1107F 7th stay outside Ghana	(Start) (End)	1107P	1107M 1. HOL 2. BUS
1108D – 1108F 8th stay outside Ghana	(Start) (End)	1108P	1108M 1. HOL 2. BUS
1109D – 1109F 9th stay outside Ghana	(Start) (End)	1109P	1109M 1. HOL 2. BUS
1110D – 1110F 10th stay outside Ghana	(Start) (End)	1110P	1110M 1. HOL 2. BUS

Dataset

	ident	num_sh_stay	q1100d	q1100f	country	motif
1	B0000010	1	1997	2004	BELGIUM	Business
2	B0000010	2	2005	2005	CONGO	Holidays
3	B0000010	3	2006	2006	MALI	Holidays
4	B0000010	4	2007	2007	France	Holidays
5	B0000010	5	2008	2008	France	Holidays
6	B0000010	6	2008	2008	UNITED KINGDOM	Holidays

7.2.12. Qb_citizenship

Observations: One line per citizenship for each person (everybody should have at least one citizenship).

Variables: This dataset contains the answers to the Citizenship module (q1200 etc.). Note that several variables have been renamed, as shown in the example below.

From the questionnaire to the dataset

Questionnaire

1200 – Count in the grid the number of periods during which ego had one or several nationalities: 03

	Start and end years	Nationalities held *in CAPITAL letters*	
1200D – 1200F– Nationality or nationalities by birth	54 (Start) 87 (End)	N : GHANA	N :
		N :	N :
1201D – 1201F – 1st change *Cross out if no change*	87 (Start) 96 (End)	N : UNITED KINGDOM	N :
		N :	N :
1202D – 1202F – 2nd change *Cross out if no change*	96 (Start) / / (End)	N : NETHERLANDS	N : GHANA
		N :	N :
1203D – 1203F – 3rd change *Cross out if no change*	(Start) (End)	N :	N :
		N :	N :

Dataset

ident	num_natio	q1200d	q1200f	first_nat	second_nat
N034600	1	1954	1987	GHANA	.
N034600	2	1987	1996	UNITED KINGDOM	.
N034600	3	1996	.	NETHERLANDS	GHANA

7.2.13. Qb_asylum

Observations: One line per asylum application for each person who has made at least one application; and one line for the other individuals.

Variables: This dataset contains the answers to the Asylum module (Q1300 etc.). Note that several variables have been renamed, as shown in the example below.

From the questionnaire to the dataset

Questionnaire

1300 – Count in the grid the number of times ego sought asylum: |__|__|

	Country where asylum was sought	Year of application	Year when refugee status was obtained *Cross out if not obtained*	Year when refugee status was denied *Cross out if not denied*	End year of refugee status *Cross out if no end year*
1301- 1st application for asylum	1301P BELGIUM	1301D |9|3|	1301O |__|__|	1301R |9|7|	1301F |__|__|
1302- 2nd application for asylum	1302P BELGIUM	1302D |9|7|	1302O |__|__|	1302R |9|9|	1302F |__|__|
1303- 3rd application for asylum	1303P BELGIUM	1303D |9|9|	1303O |0|0|	1303R |__|__|	1303F |__|__|
1304- 4th application for asylum	1304P	1304D |__|__|	1304O |__|__|	1304R |__|__|	1304F |__|__|

Databaset

ident	num_asyl	country	y_request	y_obtaining	y_refusal	y_ending
B0000256	1	BELGIUM	1993	.	1997	.
B0000256	2	BELGIUM	1997	.	1999	.
B0000256	3	BELGIUM	1999	2000	.	2003

7.2.14. Qb_residence_permit

Observations: One line per residence permit for each person who has had at least one permit; and one line for the other persons.

Variables: This dataset contains the answers to the Residence Permits module (Q1410, etc.). Note that several variables have been renamed, as shown in the example below.

From the questionnaire to the dataset

Questionnaire

MODULE RESIDENCE PERMITS GRID COLUMN 11

1410 – Number of periods of residence status: |_0_|_3_|

	Start and end years *Cross out end date if status is ongoing*	Residence status *Encircle the status(es). If "other" indicate answer in plain text*
1411D – 1411F – 1st period of residence permit	|_7_|_7_| Start |_7_|_8_| End	V RP NP **NNRP**
1412D – 1412F- 2nd period of residence permit	|_7_|_8_| Start |_8_|_3_| End	V **RP** NP NNRP
1413D – 1413F – 3rd period of residence permit	|_8_|_3_| Start |_8_|_4_| End	**V** **RP** NP NNRP

Dataset

	ident	num_rp	nnrp	v	rp	np
1	G0471001	1	Yes	No	No	No
2	G0471001	2	No	No	Yes	No
3	G0471001	3	No	Yes	Yes	No

The "nnrp", "v", "rp", "np" variables correspond to answers given to the questions in the "Residence and work permits" module. The corresponding labels in the French, Italian and Spanish questionnaires are the following:

	English	French	Spanish	Italian
No need Residence permit	NNRP	PBT	NEAR	NBTS
Visa	V	V	V	V
Residence Permit	RP	TS	AR	TS
No permit	NP	PT	SAR	NT

7.2.15. Qb_work_permit

Observations: One line per work permit for each person who has had at least one permit and one line for the others.

Variables: This dataset contains the answers to the Work Permits module (Q1510, etc.). Note that several variables have been renamed, as shown in the example below.

From questionnaire to dataset

Questionnaire

1510 – Number of periods of work permits: |_0_|_3_|

	Start and end years *Cross out end date if status is ongoing*	**Work status** *Encircle the status(es). If "other" indicate answer in plain text*
1511D – 1511F – 1st period of work permit	|_7_|_7_| Start |_7_|_8_| End	**WP NWP SWP (NNWP)** .....
1512D – 1512F – 2nd period of work permit	|_7_|_8_| Start |_8_|_3_| End	**(WP) NWP SWP NNWP** .....
1513D – 1513F – 3rd period of work permit	|_8_|_3_| Start |_8_|_4_| End	**(WP) NWP SWP NNWP** .....

Dataset

ident	num_wp	nnwp	wp	swp	nwp
G0471001	1	Yes	No	No	No
G0471001	2	No	Yes	No	No
G0471001	3	No	Yes	No	No

The "nnwp", "wp", "swp", "nwp" variables correspond to answers given to the questions in the "Residence and work permits" module. The corresponding labels in the French, Italian and Spanish questionnaires are the following:

	England	France	Spain	Italy
No Need Work Permit	NNWP	PBAT	NEAT	NBAL
Work Permit	WP	AT	AT	AL
Selective Work Permit	SWP	ATP	ATP	ALS
No Work Permit	NWP	PAT	SAT	NAL

7.2.16. Qb_transfer

Observations: One line per transfer for each person who has sent remittances at least once; and one line for the other persons.

Variables: This dataset contains all the answers to the Transfers module (about remittances).

7.2.17. Qb_association

Observations: One line per period during which each person has joined a migrant association; and one line for the other persons.

Variables: this dataset contains all the answers to the Associations module .

7.2.18. Qb_network

The Qb_network file describes the stays abroad (out of Congo, Ghana or Senegal) of the respondent's relatives and friends (to better understand the boundaries of this social circle, see the questionnaire).

Note: Even though all individuals cited in this module live or have lived out of the African MAFE countries, some of them are not international migrants. For instance, a Senegalese respondent could have cited a friend who has always lived in Spain.

The Qb_network file is a quite tricky file to manage because using it may require multiple matching operations with several files (and several identifiers). The example below shows how the information has been recorded in the questionnaires and transformed in the datafiles.

From the questionnaire to the dataset

Questionnaire

900 – Count in the GRID the number of family or personal network members who have lived outside Ghana |0|2| and fill in one column per person. (in principle, number equal to Q17TOT).

PEOPLE IN THE FAMILY/NETWORK WHO LIVE(D) OUTSIDE GHANA	M1	M2	M3	M4	M5
901 – Relationship: the person is Ego's *Code:* **1.** Partner + No. **2.** Son / daughter + No. **16.** Foster / adopted child + No. **3.** Father / mother **4.** Brother / sister **5.** Uncle / aunt **6.** Nephew / niece **7.** Cousin **8.** Grandfather / grandmother **9.** Grandson / granddaughter **10.** Son-in-law / daughter-in-law; stepson / stepdaughter **11.** Brother-in-law / sister-in-law **12.** Co-wife **13.** Other relative, *Specify* **14.** Friend **15.** Other, *Specify* *If the person is Ego's child or partner indicate his or her number given in the grid.*	Relationship: |0|4| No. Partner (Q101): |__|__| No. Child (Q202): |__|__|	Relationship: |1|4| No. Partner (Q101): |__|__| No. Child (Q202): |__|__|	Relationship: |__|__| No. Partner (Q101): |__|__| No. Child (Q202): |__|__|	Relationship: |__|__| No. Partner (Q101): |__|__| No. Child (Q202): |__|__|	Relationship: |__|__| No. Partner (Q101): |__|__| No. Child (Q202): |__|__|
902 – Sex: 1. Male 2. Female	|1|	|1|	|__|	|__|	|__|
903C – Year in which they met *Cross out if the person is not a partner or a friend*	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|
903D – Year of death *Cross out if the person is not deceased*	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|

PEOPLE IN THE FAMILY/NETWORK WHO LIVE(D) OUTSIDE GHANA	M1	M2	M3	M4	M5
904 – Country 1 (1st country outside of Ghana). *In plain text and CAPITAL letters*	IVORY COAST	SPAIN			
904D – 904F – Start and end year of the stay in "Country 1" *Cross out if the person is currently still living in this country*	7 7 (Start) 0 6 (End)	0 3 (Start) / / (End)	(Start) (End)	(Start) (End)	(Start) (End)
905 – Country 2 *In plain text and CAPITAL letters*	SENEGAL				
905D – 905F – Start and end year of the stay in "Country 2" *Cross out if the person is currently still living in this country*	0 6 (Start) / / (End)	(Start) (End)	(Start) (End)	(Start) (End)	(Start) (End)

Dataset

ident	num_net	id_net	num_netmig	id_netmig	q904d	q904f	country	q901	q902
E110	1	M_E1101	1	M_E11011	1977	2006	COTE DIVOIRE	Sister/brother	Man
E110	1	M_E1101	2	M_E11012	2006	.	SENEGAL	Sister/brother	Man
E110	2	M_E1102	1	M_E11021	2003	.	SPAIN	Friend	Man

The questionnaire excerpt shows the case of a respondent who has two persons in his social circle who lived abroad (out of Ghana) at some point. The first (num_net=1) is his brother who used to live in Ivory Coast between 1977 and 2006, and has been living in Senegal since 2006. He also has a friend who has been living in Spain since 2003.

This information is "translated" in the datafile, where identifiers have been added for the respondent (ident), each member of his social circle (id_net) and each of their stays abroad (id_netmig). Variables related to the country of stay and the dates of migration have also be renamed.

Observations: One line per migration (for stays of at least one year) for each person in the respondent's network ; and one line for each respondent who has nobody abroad.

Variables: This dataset contains

- all the answers to the Networks module. Note that some variables have been renamed (see the example given above)
- computed variables presented below

Table 24. Computed variables in Qb_network

Variable name	variable Kind	variable description
id_net	String variable	Computed variable from ident and num_net
id_netmig	String variable	Constructed variable from id_net and num_netmig
id_uni	String variable	Computed variable from ident and q901c (num_uni in the union database), useful to link this file to qb_union
id_enf	String variable	Computed variable from ident and q901e (num_enf in the children database), useful to link this file to qb_children

How to link qb_network with qb_union and/or qb_children

Example a: no link with with qb_union and/or qb_children

	ident	num_net	id_net	num_netmig	id_netmig	q904d	q904f	country	q901
1	S055702	1	M_S0557021	1	M_S05570211	1988	1990	LIBERIA	Sister/brother
2	S055702	1	M_S0557021	2	M_S05570212	1990	.	SENEGAL	Sister/brother
3	S055702	2	M_S0557022	1	M_S05570221	1990	1995	ITALY	Sister/brother-in-law
4	S055702	2	M_S0557022	2	M_S05570222	1995	.	UNITED STATES	Sister/brother-in-law
5	S055702	3	M_S0557023	1	M_S05570231	1995	1997	FRANCE	Friend
6	S055702	3	M_S0557023	2	M_S05570232	1997	.	SENEGAL	Friend
7	S055702	4	M_S0557024	1	M_S05570241	1992	1996	ITALY	Friend
8	S055702	4	M_S0557024	2	M_S05570242	1996	1999	SPAIN	Friend
9	S055702	4	M_S0557024	3	M_S05570243	1999	.	SENEGAL	Friend

The excerpt shows a Senegalese respondent's entire network abroad. He has 5 migrants in his social network:

- the first (his sister) moved to Liberia in 1988 and came back in Senegal in 1990, where she still lives;
- the second (brother in law) moved to Italy in 1990, then to the USA in 1995, where he still lives;
- the third went to France and came back in Senegal;
- the fourth went first to Italy, then to Spain and came in Senegal;

Example b: qb_network and qb_union

Union database:

ident	num_union	id_uni	q102d	q102f	q103	q106
E8	1	U_E81	1977	1992	Partner deceased	Single, never married
E8	2	U_E82	1995	.	.	Separated/Divorced

Network database

	ident	num_migr	personid	persmigid	q904d	q904f	country	q901	id_uni
1	E8	1	M_E81	M_E811	1954	.	SPAIN	Partner	U_E82
2	E8	2	M_E82	M_E821	1984	1992	SPAIN	Partner	U_E81

The variable id_uni allows us to link the two files. This respondent E8 started her relationship with U_E81 in 1977 (q102d, union database). U_E81 moved to Spain in 1984 (q904d, network database) and died in 1992 (q102 and q103 from union database). Here, the end of the migration period (q904f) corresponds to the death of the partner. E8 started a new relationship 3 years later (q102d=1995), with a man who has lived in Spain since 1954. Actually, this person is Spanish and was born in Spain (q107 from union database, not shown here). 1954 is his year of birth.

Example b: qb_network and qb_children

Children database

	ident	num_enf	id_enf	q201n	q201d	q205
1	E101	1	E_E1011	1997	.	SENEGAL
2	E101	2	E_E1012	2002	.	SENEGAL
3	E101	3	E_E1013	2006	.	SENEGAL
4	E103	1	E_E1031	1993	.	ESPAGNE
5	E103	2	E_E1032	2002	.	ESPAGNE

Network database

	ident	num_net	id_net	num_netmig	id_netmig	q904d	q904f	country	id_enf
1	E101	3	M_E1013	1	M_E10131	2006	.	SPAIN	E_E1013
2	E101	4	M_E1014	1	M_E10141	2006	.	SPAIN	E_E1012
3	E103	4	M_E1034	1	M_E10341	1993	1995	SPAIN	E_E1031
4	E103	4	M_E1034	2	M_E10342	1995	1997	SENEGAL	E_E1031
5	E103	4	M_E1034	3	M_E10343	1997	.	SPAIN	E_E1031
6	E103	7	M_E1037	1	M_E10371	2002	.	SPAIN	E_E1032

The respondent E101 has 3 children, all of them were born in Senegal (q205, children database). The child E_E1011, born in 1997 (q201n), is not in the network datase because he has always lived in Senegal. The two others, born in 2002 and 2006, moved to Spain in 2006 (q904d – country in network database), where they still live (q904f is missing).

The respondent E103 has 2 children born in Spain. The first child (E_E1031) was born in 1993 (q904d =q201n), moved to Senegal in 1995 and returned to Spain 1997. The second one (E_E1032) was born in Spain in 2002 and has not moved since then (q904d = q201n). He did not migrate, but he is included in the network database because he was born out of Senegal. Note that some individuals of the network module are not migrants.

8 CONTEXTUAL DATA

Two contextual databases have been prepared during the MAFE project:

- **A general database (MAFE CDB)** based on existing and publicly available contextual data will be delivered in late 2014. Users will be able to browse the data and linked meta-data from Ined Nesstar webview tool, available at :

http://nesstar.ined.fr/webview/?v=2&study=http://nesstar.ined.fr/obj/fCatalog/Catalog17&language=en.

The same link will give direct access to the downloadable data files in excel and STATA formats as well as to meta-data in pdf.

The database consists of about 85 indicators covering domains relevant for research on migration. This includes demography, economics, employment and unemployment, education, political context, etc. The sources used to collect the data are mainly international databases e.g., Eurostat, World Bank, OECD Interantional Migration Database. Most indicators cover all the nine "MAFE countries" and provide, as far as possible, data comparable across countries and years. Specific meta-data provide information on the sources used, on indicator definitions, as well as on possible comparability issues.

- A policy database (Impol) which is still a work in progress. This base is presented in a working paper (available on the MAFE website):

Mezger, C. and A. Gonzalez-Ferrer (2013). The ImPol Data-base: A New Tool to Measure Immigration Policies in France, Italy and Spain since the 1960s. MAFE Working Paper 34. Paris, INED: 43.

It can be accessed on request by contacting its authors at:

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9 APPENDICES

1. List of differences between MAFE-Congo, MAFE-Ghana and MAFE-Senegal databases
2. Explanation of the coding of the activity variable to ISCO-08 and ISEI-08 codes

Differences between the MAFE datasets
Household & Biographic questionnaires

« HOUSEHOLD » bases

Variable / Country	Senegal	DR Congo	Ghana
quartvill (Dakar Neighbourhood)	X		
comr (Locality)		X	X
hdeb_inter (Start hour of the interview)			X
hh_q4_cont (Ego has contact abroad)	X		
hh_q4_child (Ego's father and/or mother live(s) abroad)		X	X
hh_q4_return (Ego returned from a migration)		X	X
nb_cm_enf (If yes how many (children of the HH head currently not living here))		X	X
nb_mar_migrant (If yes how many (persons engaged in a relationship with a migrant living abroad))		X	X
child_migrant (Any children under 18 years old in your HH whose parents are migrants living abroad)		X	X
nb_child_migrant (If yes how many (children under 18 whose parents are migrants)		X	X
hh_a2_vivant (Is she/he still alive)		X	X
hh_a3 (Relation with the HH head)	X		
hh_a3_1 & 2 (Relation with the HH head 1 & 2)		X	X
hh_a5 (Nucleus number)	X		
hh_a6 (Relation with the nucleus number)	X		

hh_a7c_2 (Number of the 2nd partner living abroad)	X		
hh_a14cod (Town code of birth)	X		
hh_a14imm_an (Year of moving in Congo/Ghana for the first time)		X	X
hh_a14imm_age (Age of moving in Congo/Ghana for the first time)		X	X
hh_a15_natio3 (Current nationality 3)		X	
hh_a17_preci (Specify the other religion)		X	X
hh_a20b (Profession codification)	X		
migrant (Currently do you have at home someone who lives in Europe)	X		
e3 (Your toilets are) **e3_1 & 2** (Your toilets facilities are 1 & 2) **e3_3 & 4** (Your toilets facilities are 3 & 4)	X	X	X X
[!] Dichotomous : **e4_1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & NR** [!] Multiple answers : **e4_1 & 2 & 3**	X	X	X
[!] Dichotomous : **e6_1 & 2 & 3 & 4 & 5 & NR** [!] Multiple answers : **e6_1 & 2 & 3 & 4**	X	X	X
e9_l (E9: plain text answers)	X		X
[!] Dichotomous : **e15** (Kind of financement for the plot) / **e15_a & b & c** (Plot: financement from Africa & Europe & Another country) [!] Multiple answers : **e15_1 & 2 & 3** (Kind of financement for the plot 1 & 2 & 3)	X	X	X
e16_num3 (3rd person ID who earned this money for the plot)		X	X
[!] Dichotomous : **e17** (Kind of financement for the house) / **e17_a & b & c** (House: financement from Africa & Europe & Another country) [!] Multiple answers : **e17_1 & 2 & 3** (Kind of financement for the house 1 & 2 & 3)	X	X	X

e18_num3 (3rd person ID who earned this money for the house)		X	X
[!] Dichotomous : **e20** (Kind of financement for the modifications) / **e20_a & b & c** (Modifications: financement from Africa & Europe & Another country) [!] Multiple answers : **e20_1 & 2 & 3** (Kind of financement for the modifications 1 & 2 & 3)	X	X	X
e22a / e22 (Do you own other plots)	X	X	X
e22b (Do you own plots)	X		
[!] Dichotomous : **e24** (Kind of financement for the plots) / **e24_a & b & c** (Plots: financement from Africa & Europe & Another country) [!] Multiple answers : **e24_1 & 2 & 3** (Kind of financement for the plots 1 & 2 & 3)	X	X	X
e25_num2 & 3 (2nd & 3rd person ID who earned this money for the plots)		X	X
e27_4 (Utilisation of the agricultural land 4)			X
e27_a & b & c & d & NR (…)	X		
hfin_inter (End hour of the interview)			X
hnucleus (Number of nucleus in the HH)	X		
exp_fact_men (Inflating factor household)		X	X

« INDIVIDUAL » bases

Variable / Country	Senegal	DR Congo	Ghana
reg (District)		X	X
comr (Locality)		X	X
q4_cont (Ego has contact abroad)	X		
q4_child (Ego's father and/or mother live(s) abroad)		X	X
q4_return (Ego returned from a migration)		X	X
a2_vivant (Is she/he alive?)		X	X
a3 (Relation with the HH head)	X		
a3_1 & 2 (Relation with the HH head 1 & 2)		X	X
a5 (Nucleus number)	X		
a6 (Relation with the nucleus head)	X		
a7c_2 (Number of the 2nd partner living abroad)	X	X	
a7_fath (Father abroad)		X	X
a7_fath_ID (Father abroad: number)		X	X
a7_moth (Mother abroad)		X	X

a7_moth_ID (Mother abroad: number)		X	X
a8d (Child under 18 who lives in the HH)		X	X
a8e_1 & 2 & 3 & 4 & 5 & 6 & 7 (Child under 18 who lives in the HH number 1 & 2 & 3 & 4 & 5 & 6 & 7)		X	X
a8e_8 & 9 & 10 (Child under 18 who lives in the HH number 8 & 9 & 10)			X
a14cod (Town code of birth)	X		
a14imm_an (Year of moving in Congo/Ghana for the first time)		X	X
a14imm_age (Age of moving in Congo/Ghana for the first time)		X	X
a15_natio3 (Current nationality 3)		X	X
a17_preci (Specify the other religion)		X	X
a20b (Profession codification)	X		
b3_a & b & c & d & e & NR (…)	X		
b5 (Did you have contact with this person during the past 12 months)	X		
b5_1 & 2 & 3 (1st & 2nd & 3rd contact with this person)		X	X
c3 (Generally how does she/he send you money?)	X		
c3_1 & 2 & 3 (Generally how does she/he send you money? 1st & 2nd & 3rd answer)		X	X
c5_7 (How did you spend this money: 7th answer)			X
c6_2 (What kind of purchase did you make? 2nd answer)	X		X
c8_6 & 7 (6th & 7th good she/he sent you)	X	X	
hhmember (Total number of persons in the HH (living in or outside))		X	X
hnucleus (Children of the HH head living in the HH)	X		
isco (ISCO codification)	X		
isei (ISEI codification)	X		
exp_fact_men (Inflating factor household)		X	X

Differences between the MAFE datasets
Biographic questionnaire

« GENERAL » bases

Variable / Country	Senegal	DR Congo	Ghana
quartier (Survey district)		X	X
nomenq (ID of the interviewer)	X		X
q2v_a (Other locality)	X		
q3 (Ethnic group)	X		X
q3_1 & 2 (Ethnic group 1 & 2)	X		
q3a (Other ethnic group)	X		X
q11_3 (Father nationality 3)	X		X
q13_3 (Mother nationality 3)	X		
q19e (In which discipline)		X	X
q19e_c1 & 2 & 3 (Study field level 1 & 2 & 3)		X	X
q19y (In what year did you receive this diploma)		X	X
q22p_5 & 6 (5th & 6th country EGO wanted to go)	X		X
q22p_7 (7th country EGO wanted to go)			X
e3 (In what language did you conduct the interview)	X		

e3_2 & 3 (2nd & 3rd language used in the interview)	X		X
e9 (Did you give a gift to the interviewee)		X	X
rem_ageven (Ageven remarks)	X		
year (Year of survey)	X		
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« UNION » bases

Variable / Country	Senegal	DR Congo	Ghana
q108u_3 (At the beginning of your relationship what was her/his 3rd nationality)	X		
q112 (Did you have co-wife in this partnership)	X		
q113 (How many co-wife)	X		
q114 (What was your rank among the wives)	X		
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« CHILDREN » bases

Variable / Country	Senegal	DR Congo	Ghana
q201e (Year when child started living with Ego)		X	X
q201f (Year when child stopped living with Ego)		X	X
q206_3 (What is/are her/his nationality/ies: 3rd nationality)			X
q207 (What is the child's relationship to you)		X	X
q207p (Specify the child's relationship to you)		X	X
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« HOUSE » bases

Variable / Country	Senegal	DR Congo	Ghana
q309p (Specify q309)		X	X
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« ACTIVITY » bases

Variable / Country	Senegal	DR Congo	Ghana
q403_a (What was your exact occupation during this period: 2nd activity)	X		
q407_9 (During this period did you receive: Transfers from abroad)		X	X
q407p / q407_a (Specify the other resources)	X	X	X
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« ASSETS » bases

Variable / Country	Senegal	DR Congo	Ghana
q516_c & d (Migrant code 3 & 4)			X
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« MIG_ATTEMPTS » bases

Variable / Country	Senegal	DR Congo	Ghana
q805_12 (Step: Nothing at all)	X		
q805_NR (Steps: No answer)		X	X
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« MIGRATION » bases

Variable / Country	Senegal	DR Congo	Ghana
q613_3 (For how long did you stay in the end (other))	X	X	
q614_6 (Would you tell me if during your stay you were an asylum seeker)		X	X
q616_a (Specify the other relative)	X	X	
q616_b (Specify somebody else)	X	X	
q628_5 & 6 (Did you contributed to building... answer 5 & 6)	X	X	
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« RETURN » bases

Variable / Country	Senegal	DR Congo	Ghana
q704_4 (For how long did you stay (other))	X		
q705_3 (When you arrived back, for how long did you intend to stay (in weeks))		X	X
q707_b (Specify the return with other)		X	X
q709_d (Migrant code 4)	X	X	
q710 (How would you qualify this return to DR Congo)		X	X
q711 (Could you give me the reason for this)		X	X
q711c1 & 2 & 3 (Return coded level 1 & 2 & 3)			X
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« NETWORK » bases

Variable / Country	Senegal	DR Congo	Ghana
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« SHORT_RETURN » bases

Variable / Country	Senegal	DR Congo	Ghana
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« SHORT_STAY » bases

Variable / Country	Senegal	DR Congo	Ghana
reason / motif (Motivation)	X	X	X
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« CITIZENSHIP » bases

Variable / Country	Senegal	DR Congo	Ghana
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« ASYLUM » bases

Variable / Country	Senegal	DR Congo	Ghana
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« RESIDENCE_PERMIT » bases

Variable / Country	Senegal	DR Congo	Ghana
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« WORK_PERMIT » bases

Variable / Country	Senegal	DR Congo	Ghana
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« TRANSFER » bases

Variable / Country	Senegal	DR Congo	Ghana
q1601p2 (Destination country of transfer 2)	X		
nom_trans / nom_transr (Number of transfers)	X	X	X
flag_visitor (Resident in Europe but surveyed in Africa)	X		

« ASSOCIATION » bases

Variable / Country	Senegal	DR Congo	Ghana
flag_visitor (Resident in Europe but surveyed in Africa)	X		

EXPLANATION OF THE CODING OF THE ACTIVITY VARIABLE TO ISCO-08 AND ISEI-08 CODES

This document explains how the activity variable has been coded into ISCO and ISEI codes according to the ILO classification and Ganzeboom's ISEI coefficients. This document has been proposed by Pau Baizan and the coding syntax (in stata) he used for the Senegal has been adapted in the two others countries (Congo and Ghana).

As we know, the same values of the variable q403 may contain very different occupations which made it impossible to assign ISCO codes to immigrant jobs. The problem is substantially alleviated by looking at the variable q403_b, from which more precise job descriptions can be extracted. The first dilemma was whether to use ISCO-88 or ISCO-08. The ISCO-08 has replaced its 88 counterpart as the official job classification by the ILO, so the choice may seem clear. However, ISEI coefficients are based on ISCO schemes and there is hardly any evidence of use of ISEI-08 yet. This is because the ISEI-08 coefficients, (i.e. coefficients based on ISCO-08 scheme) found on Ganzeboom's web page were calculated very recently (in 2010). However, ISEI-08 is based on a broader dataset and considers women's occupational attainment too. Therefore, it seems reasonable to choose ISEI-08 rather than ISEI-88. There is a trade-off involved here, but more details thereon will be presented below.

1. Basic approach

As there is some initial job classification in MAFE that is fairly similar to ISCO (i.e. the variable q403), this basic classification was respected to a certain extent. For example, if the job description (q403_b) is vague, then the value of q403 was decisive for the assignment of the ISCO code. One assigned four digit ISCO coefficients to occupations, unless the job description was too general, in which case the three-digit ISCO was assigned (which is no problem, as three digit ISCOs are also assigned ISEIs).

2. Difficulties

While in a great majority of cases the assignment of the ISCO was straightforward, there were some troubles with certain categories, primarily due to insufficiently detailed information in the dataset. This is no wonder, because in some cases several questions would be necessary to be sure about the right "choice" of ISCO. The agricultural jobs are especially affected by this and we find this the single biggest problem that we have concerning the job classification. Namely, ISCO-08 (just like ISCO-88) distinguishes between the following categories in the agriculture:

6110 – Market-oriented skilled agricultural workers (mostly crop growers), with ISEI value of 18

6310 – Subsistence farmers, fishers, etc, with ISEI value of 10

9210 – Agricultural labourers, ISEI value of 15

So, we have three categories, each with different ISEIs (even though all the three very low). On the other hand, most responses in MAFE were very general, as can be seen from these examples listed below:

Agricultor

Agriculture

Aider Les Parents Dans Les Champs

Cultivador

Lavorava La Terra Del Padre

Trabajando En El Campo Con Su Padre

Since one assumes that very few African immigrants in France, Spain or Italy are engaged in agricultural activities for subsistence or are market-oriented agricultural workers, we would be confident enough to assign them to category 9210 (i.e. farm labourers). But, when it comes to agricultural activities performed in Senegal (prior to migration or by non-migrants) the answers listed above leave the possibility open to classify jobs in any of the three ISCO categories. It is especially difficult to know whether the agricultural activity was only meant to provide subsistence or whether there was also some market activity involved. So, some feedback on this would be necessary. For now, one classified all these "unclear" answers (for q403=111) into 9210, but only because it seemed as the safest solution since its ISEI is between the ISEIs of two other categories.

There is another doubt one has regarding the agricultural jobs. As we said, there is some initial classification already incorporated into the dataset (q403). There is a very broad and the biggest group called "Agriculture, cultivateur", but there are also other smaller categories such as breeders, shepherds or agricultural labourers. However, when one looks into more detailed job description we notice that some jobs are represented in different categories. For example, job description "working in the field" can be found under q403=111, q403=112, q403=115 and q403=117. So, it is not clear to me whether this assignment of job descriptions was based on some extra information not reported in the dataset or whether it was rather arbitrary. Anyhow, concerning all these "unclear" cases, we respected the classification already present in the dataset for the time being and until getting some feedback from the others.

In summary, it is very possible that some assumptions need to be made regarding the classification of the agricultural jobs and we believe that the decision upon that question should be a result of a group discussion.

3. Some other, hopefully less serious difficulties

It can also be argued that some changes of ISCO classification produced even more doubts when deciding on job classification of immigrants. For example, ISCO-88 contained the category "Small enterprise general managers" which included small merchants and shop owners. However, the size of enterprise matters much less in the new ISCO than was the case in the old version and it is sometimes not easy to determine how these small merchants (a sizeable "population" in the dataset) should be classified. Using ILO conversion tables and Ganzeboom's comments on the new classifications, it seemed most appropriate to classify most of these small traders as shop owners.

Another novelty of ISCO-08 is the separate category for job supervisors. However, it is very likely that not all interviewees actually indicated that their job included some supervising activities too. Hence, one could only classify as supervisors those respondents who actually indicated that they performed this task too.

4-ISCO and ISEI codes

Harry B.G. Ganzeboom

INTERNATIONAL STANDARD CLASSIFICATION OF OCCUPATIONS

ISCO-08

With ISEI-08 scores

http://www.ilo.org/public/english/bureau/stat/isco/index.htm
http://home.fsw.vu.nl/hbg.ganzeboom/isco08

ISCO in the MAFE-DATA

ISEI in the MAFE-DATA

Last revised: July 27 2010

Major	sub-major	minor	unit	TITLE	ISEI-08	ISSP-N
0000				Armed forces occupations	53	1207
	0100			Commissioned armed forces officers	65	79
		0110		Commissioned armed forces officers	65	79
	0200			Non-commissioned armed forces officers	53	1090
		0210		Non-commissioned armed forces officers	53	1090
	0300			Armed forces occupations, other ranks	30	38
		0310		Armed forces occupations, other ranks	30	38
1000				Managers	62	14458
	1100			Chief executives, senior officials and legislators	69	2361
		1110		Legislators and senior officials	68	815
			1111	Legislators	66	126
			1112	Senior government officials	70	466
			1113	Traditional chiefs and heads of village	57	91
			1114	Senior officials of special-interest organizations	68	101
		1120		Managing directors and chief executives	70	1546
	1200			Administrative and commercial managers	68	3281
		1210		Business services and administration managers	68	1503
			1211	Finance managers	68	675
			1212	Human resource managers	68	332
			1213	Policy and planning managers	68	
			1219	Business services and administration managers not elsewhere classified	63	70
		1220		Sales, marketing and development managers	68	976
			1221	Sales and marketing managers	66	669
			1222	Advertising and public relations managers	67	158
			1223	Research and development managers	79	149
	1300			Production and specialised services managers	60	5031
		1310		Production managers in agriculture, forestry and fisheries	49	isei68
			1311	Agricultural and forestry production managers	60	
			1312	Aquaculture and fisheries production managers	60	
		1320		Manufacturing, mining, construction, and distribution managers	60	1975

			1321	Manufacturing managers	63	808
			1322	Mining managers	60	
			1323	Construction managers	59	598
			1324	Supply, distribution and related managers	57	569
		1330		Information and communications technology service managers	77	148
		1340		Professional services managers	59	2183
			1341	Child care services managers	59	
			1342	Health services managers	59	
			1343	Aged care services managers	59	
			1344	Social welfare managers	59	
			1345	Education managers	59	
			1346	Financial and insurance services branch managers	59	
			1349	Professional services managers not elsewhere classified	59	2183
	1400			Hospitality, retail and other services managers	53	3477
		1410		Hotel and restaurant managers	43	716
			1411	Hotel managers	43	
			1412	Restaurant managers	47	2007
		1420		Retail and wholesale trade managers	56	253
		1430		Other services managers	59	1008
			1431	Sports, recreation and cultural centre managers	59	
			1439	Services managers not elsewhere classified	59	1008
2000				Professionals	65	32064
	2100			Science and engineering professionals	69	4871
		2110		Physical and earth science professionals	77	344
			2111	Physicists and astronomers	79	29
			2112	Meteorologists	70	6
			2113	Chemists	76	171
			2114	Geologists and geophysicists	80	69
		2120		Mathematicians, actuaries and statisticians	73	92
		2130		Life science professionals	67	363
			2131	Biologists, botanists, zoologists and related professionals	71	129
			2132	Farming, forestry and fisheries advisers	64	169
			2133	Environmental protection professionals	67	
		2140		Engineering professionals (excluding electrotechnology)	72	2389
			2141	Industrial and production engineers	65	isei68
			2142	Civil engineers	76	483
			2143	Environmental engineers	72	
			2144	Mechanical engineers	69	367
			2145	Chemical engineers	71	118
			2146	Mining engineers, metallurgists and related professionals	74	73
			2149	Engineering professionals not elsewhere classified	70	551
		2150		Electrotechnology engineers	74	462
			2151	Electrical engineers	74	256
			2152	Electronics engineers	75	206
			2153	Telecommunications engineers	74	
		2160		Architects, planners, surveyors and designers	60	983
			2161	Building architects	71	349
			2162	Landscape architects	60	

			2163	Product and garment designers	51	540
			2164	Town and traffic planners	60	
			2165	Cartographers and surveyors	67	94
			2166	Graphic and multimedia designers	60	
	2200			Health professionals	66	4030
		2210		Medical doctors	89	850
			2211	Generalist medical practitioners	89	
			2212	Specialist medical practitioners	89	
		2220		Nursing and midwifery professionals	54	1534
			2221	Nursing professionals	42	isei68
			2222	Midwifery professionals	52	isei68
		2230		Traditional and complementary medicine professionals	49	isei88
		2240		Paramedical practitioners	51	isei88
		2250		Veterinarians	71	120
		2260		Other health professionals	66	1135
			2261	Dentists	86	223
			2262	Pharmacists	69	283
			2263	Environmental and occupational health and hygiene professionals	66	
			2264	Physiotherapists	55	388
			2265	Dieticians and nutritionists	53	73
			2266	Audiologists and speech therapists	51	isei88
			2267	Optometrists and ophthalmic opticians	58	isei68
			2269	Health professionals not elsewhere classified	64	168
	2300			Teaching professionals	63	12622
		2310		University and higher education teachers	76	1142
		2320		Vocational education teachers	65	98
		2330		Secondary education teachers	71	3281
		2340		Primary school and early childhood teachers	57	5194
			2341	Primary school teachers	61	3429
			2342	Early childhood educators	47	1339
		2350		Other teaching professionals	56	2308
			2351	Education methods specialists	67	189
			2352	Special needs teachers	58	516
			2353	Other language teachers	54	
			2354	Other music teachers	54	
			2355	Other arts teachers	54	
			2356	Information technology trainers	54	
			2359	Teaching professionals not elsewhere classified	54	1459
	2400			Business and administration professionals	64	3491
		2410		Finance professionals	66	1364
			2411	Accountants	66	1364
			2412	Financial and investment advisers	66	
			2413	Financial analysts	66	
		2420		Administration professionals	59	574
			2421	Management and organization analysts	59	
			2422	Policy administration professionals	62	199
			2423	Personnel and careers professionals	58	375
			2424	Training and staff development professionals	59	
		2430		Sales, marketing and public relations professionals	64	

			2431	Advertising and marketing professionals	64	
			2432	Public relations professionals	64	
			2433	Technical and medical sales professionals (excluding ICT)	64	
			2434	Information and communications technology sales professionals	64	
	2500			Information and communications technology professionals	69	1662
		2510		Software and applications developers and analysts	70	918
			2511	Systems analysts	70	560
			2512	Software developers	70	
			2513	Web and multimedia developers	70	
			2514	Applications programmers	70	
			2519	Software and applications developers and analysts not elsewhere classified	70	
		2520		Database and network professionals	68	185
			2521	Database designers and administrators	68	
			2522	Systems administrators	68	
			2523	Computer network professionals	68	
			2529	Database and network professionals not elsewhere classified	68	185
	2600			Legal, social and cultural professionals	66	4730
		2610		Legal professionals	81	922
			2611	Lawyers	85	491
			2612	Judges	88	46
			2619	Legal professionals not elsewhere classified	72	246
		2620		Librarians, archivists and curators	55	394
			2621	Archivists and curators	55	67
			2622	Librarians and related information professionals	55	246
		2630		Social and religious professionals	65	1848
			2631	Economists	72	500
			2632	Sociologists, anthropologists and related professionals	75	70
			2633	Philosophers, historians and political scientists	76	35
			2634	Psychologists	74	240
			2635	Social work and counselling professionals	59	547
			2636	Religious professionals	53	255
		2640		Authors, journalists and linguists	65	674
			2641	Authors and related writers	65	
			2642	Journalists	65	
			2643	Translators, interpreters and other linguists	68	138
		2650		Creative and performing artists	53	661
			2651	Visual artists	51	208
			2652	Musicians, singers and composers	50	214
			2653	Dancers and choreographers	53	35
			2654	Film, stage and related directors and producers	63	134
			2655	Actors	64	isei68
			2656	Announcers on radio, television and other media	47	49
			2659	Creative and performing artists not elsewhere classified	41	21
3000				Technicians and associate professionals	51	25797
	3100			Science and engineering associate professionals	51	5510
		3110		Physical and engineering science technicians	52	3953
			3111	Chemical and physical science technicians	49	239

			3112	Civil engineering technicians	55	495
			3113	Electrical engineering technicians	51	351
			3114	Electronics engineering technicians	53	484
			3115	Mechanical engineering technicians	52	446
			3116	Chemical engineering technicians	52	152
			3117	Mining and metallurgical technicians	59	83
			3118	Draughtspersons	49	273
			3119	Physical and engineering science technicians not elsewhere classified	50	740
		3120		Mining, manufacturing and construction supervisors	49	336
			3121	Mining supervisors	49	
			3122	Manufacturing supervisors	49	
			3123	Construction supervisors	49	
		3130		Process control technicians	37	373
			3131	Power production plant operators	41	105
			3132	Incinerator and water treatment plant operators	38	79
			3133	Chemical processing plant controllers	37	
			3134	Petroleum and natural gas refining plant operators	37	
			3135	Metal production process controllers	37	
			3139	Process control technicians not elsewhere classified	35	189
		3140		Life science technicians and related associate professionals	47	249
			3141	Life science technicians (excluding medical)	47	
			3142	Agricultural technicians	48	124
			3143	Forestry technicians	47	
		3150		Ship and aircraft controllers and technicians	59	354
			3151	Ships' engineers	55	50
			3152	Ships' deck officers and pilots	47	116
			3153	Aircraft pilots and related associate professionals	74	73
			3154	Air traffic controllers	67	29
			3155	Air traffic safety electronics technicians	66	24
	3200			Health associate professionals	46	4848
		3210		Medical and pharmaceutical technicians	45	557
			3211	Medical imaging and therapeutic equipment technicians	51	112
			3212	Medical and pathology laboratory technicians	45	287
			3213	Pharmaceutical technicians and assistants	40	158
			3214	Medical and dental prosthetic technicians	45	
		3220		Nursing and midwifery associate professionals	48	2394
			3221	Nursing associate professionals	48	1775
			3222	Midwifery associate professionals	42	80
		3230		Traditional and complementary medicine associate professionals	42	27
		3240		Veterinary technicians and assistants	30	37
		3250		Other health associate professionals	45	1767
			3251	Dental assistants and therapists	43	167
			3252	Medical records and health information technicians	45	
			3253	Community health workers	45	
			3254	Dispensing opticians	48	85
			3255	Physiotherapy technicians and assistants	40	448
			3256	Medical assistants	46	549
			3257	Environmental and occupational health inspectors and	50	290

				associates		
			3258	Ambulance workers	45	
			3259	Health associate professionals not elsewhere classified	45	
	3300			Business and administration associate professionals	53	11919
		3310		Financial and mathematical associate professionals	51	3521
			3311	Securities and finance dealers and brokers	67	258
			3312	Credit and loans officers	51	
			3313	Accounting associate professionals	47	1483
			3314	Statistical, mathematical and related associate professionals	63	61
			3315	Valuers and loss assessors	52	165
		3320		Sales and purchasing agents and brokers	55	3003
			3321	Insurance representatives	57	559
			3322	Commercial sales representatives	55	1788
			3323	Buyers	52	399
			3324	Trade brokers	54	132
		3330		Business services agents	56	909
			3331	Clearing and forwarding agents	54	155
			3332	Conference and event planners	56	
			3333	Employment agents and contractors	55	110
			3334	Real estate agents and property managers	57	399
			3339	Business services agents not elsewhere classified	57	245
		3340		Administrative and specialised secretaries	49	2785
			3341	Office supervisors	57	64
			3342	Legal secretaries	47	969
			3343	Administrative and executive secretaries	49	
			3344	Medical secretaries	49	
		3350		Regulatory government associate professionals	55	1361
			3351	Customs and border inspectors	63	99
			3352	Government tax and excise officials	61	102
			3353	Government social benefits officials	50	87
			3354	Government licensing officials	52	59
			3355	Police inspectors and detectives	54	329
			3359	Regulatory government associate professionals not elsewhere classified	55	339
	3400			Legal, social, cultural and related associate professionals	45	2199
		3410		Legal, social and religious associate professionals	45	1423
			3411	Legal and related associate professionals	52	516
			3412	Social work associate professionals	42	816
			3413	Religious associate professionals	31	91
		3420		Sports and fitness workers	46	229
			3421	Athletes and sports players	46	
			3422	Sports coaches, instructors and officials	46	
			3423	Fitness and recreation instructors and program leaders	46	
		3430		Artistic, cultural and culinary associate professionals	47	547
			3431	Photographers	50	169
			3432	Interior designers and decorators	47	
			3433	Gallery, museum and library technicians	47	
			3434	Chefs	47	
			3435	Other artistic and cultural associate professionals	45	378

	3500			Information and communications technicians	57	944
		3510		Information and communications technology operations and user support technicians	58	789
			3511	Information and communications technology operations technicians	56	199
			3512	Information and communications technology user support technicians	60	325
			3513	Computer network and systems technicians	50	155
			3514	Web technicians	50	94
		3520		Telecommunications and broadcasting technicians	46	isei68
			3521	Broadcasting and audio-visual technicians	46	isei68
			3522	Telecommunications engineering technicians	46	
4000				Clerical support workers	41	21591
	4100			General and keyboard clerks	41	5787
		4110		General office clerks	41	
		4120		Secretaries (general)	42	3566
		4130		Keyboard operators	39	977
			4131	Typists and word processing operators	42	582
			4132	Data entry clerks	36	395
	4200			Customer services clerks	40	3931
		4210		Tellers, money collectors and related clerks	44	1603
			4211	Bank tellers and related clerks	44	694
			4212	Bookmakers, croupiers and related gaming workers	46	81
			4213	Pawnbrokers and money-lenders	70	20
			4214	Debt-collectors and related workers	46	98
		4220		Client information workers	37	2039
			4221	Travel consultants and clerks	42	249
			4222	Contact centre information clerks	37	
			4223	Telephone switchboard operators	34	472
			4224	Hotel receptionists	37	
			4225	Enquiry clerks	37	
			4226	Receptionists (general)	37	1114
			4227	Survey and market research interviewers	37	
			4229	Client information workers not elsewhere classified	37	
	4300			Numerical and material recording clerks	43	5756
		4310		Numerical clerks	47	3266
			4311	Accounting and bookkeeping clerks	45	2076
			4312	Statistical, finance and insurance clerks	52	698
			4313	Payroll clerks	47	
		4320		Material-recording and transport clerks	38	2490
			4321	Stock clerks	36	1364
			4322	Production clerks	41	416
			4323	Transport clerks	41	517
	4400			Other clerical support workers	40	4916
		4410		Other clerical support workers	40	4916
			4411	Library clerks	42	395
			4412	Mail carriers and sorting clerks	32	634
			4413	Coding, proof-reading and related clerks	42	47
			4414	Scribes and related workers	45	96

			4415	Filing and copying clerks	40	
			4416	Personnel clerks	40	
			4419	Clerical support workers not elsewhere classified	40	
5000				Service and sales workers	31	34316
	5100			Personal service workers	30	9995
		5110		Travel attendants, conductors and guides	42	477
			5111	Travel attendants and travel stewards	44	145
			5112	Transport conductors	40	163
			5113	Travel guides	41	90
		5120		Cooks	27	2504
		5130		Waiters and bartenders	29	2433
			5131	Waiters	28	isei68
			5132	Bartenders	30	isei68
		5140		Hairdressers, beauticians and related workers	32	1458
			5141	Hairdressers	32	
			5142	Beauticians and related workers	32	
		5150		Building and housekeeping supervisors	29	2125
			5151	Cleaning and housekeeping supervisors in offices, hotels and other establishments	33	isei68
			5152	Domestic housekeepers	33	534
			5153	Building caretakers	26	910
		5160		Other personal services workers	33	809
			5161	Astrologers, fortune-tellers and related workers	43	20
			5162	Companions and valets	24	112
			5163	Undertakers and embalmers	37	45
			5164	Pet groomers and animal care workers	33	
			5165	Driving instructors	33	
			5169	Personal services workers not elsewhere classified	34	417
	5200			Sales workers	33	14600
		5210		Street and market salespersons	28	1149
			5211	Stall and market salespersons	31	676
			5212	Street food salespersons	23	473
		5220		Shop salespersons	33	11694
			5221	Shop keepers	45	1754
			5222	Shop supervisors	40	
			5223	Shop sales assistants	31	9940
		5230		Cashiers and ticket clerks	31	913
		5240		Other sales workers	35	505
			5241	Fashion and other models	37	127
			5242	Sales demonstrators	41	isei68
			5243	Door to door salespersons	34	378
			5244	Contact centre salespersons	35	
			5245	Service station attendants	17	isei68
			5246	Food service counter attendants	25	
			5249	Sales workers not elsewhere classified	25	
	5300			Personal care workers	26	5989
		5310		Child care workers and teachers' aides	26	1519
			5311	Child care workers	26	1519
			5312	Teachers' aides	38	isei88

		5320		Personal care workers in health services	27	2805
			5321	Health care assistants	28	1726
			5322	Home-based personal care workers	24	679
			5329	Personal care workers in health services not elsewhere classified	26	400
	5400			Protective services workers	40	3081
		5410		Protective services workers	40	3081
			5411	Fire-fighters	49	212
			5412	Police officers	53	734
			5413	Prison guards	49	131
			5414	Security guards	27	968
			5419	Protective services workers not elsewhere classified	38	784
6000				Skilled agricultural, forestry and fishery workers	18	8245
	6100			Market-oriented skilled agricultural workers	18	6911
		6110		Market gardeners and crop growers	18	3090
			6111	Field crop and vegetable growers	16	1548
			6112	Tree and shrub crop growers	21	353
			6113	Gardeners, horticultural and nursery growers	24	376
			6114	Mixed crop growers	14	268
		6120		Animal producers	24	1364
			6121	Livestock and dairy producers	23	934
			6122	Poultry producers	20	84
			6123	Apiarists and sericulturists	29	11
			6129	Animal producers not elsewhere classified	27	171
		6130		Mixed crop and animal producers	18	1845
	6200			Market-oriented skilled forestry, fishery and hunting workers	24	812
		6210		Forestry and related workers	26	486
		6220		Fishery workers, hunters and trappers	21	326
			6221	Aquaculture workers	18	35
			6222	Inland and coastal waters fishery workers	19	150
			6223	Deep-sea fishery workers	35	44
			6224	Hunters and trappers	10	8
	6300			Subsistence farmers, fishers, hunters and gatherers	10	332
		6310		Subsistence crop farmers	10	
		6320		Subsistence livestock farmers	10	
		6330		Subsistence mixed crop and livestock farmers	10	
		6340		Subsistence fishers, hunters, trappers and gatherers	10	
7000				Craft and related trades workers	35	25931
	7100			Building and related trades workers, excluding electricians	34	7455
		7110		Building frame and related trades workers	34	4332
			7111	House builders	40	586
			7112	Bricklayers and related workers	32	isei68
			7113	Stonemasons, stone cutters, splitters and carvers	31	1326
			7114	Concrete placers, concrete finishers and related workers	32	220
			7115	Carpenters and joiners	33	1205
			7119	Building frame and related trades workers not elsewhere classified	35	589
		7120		Building finishers and related trades workers	36	1908
			7121	Roofers	36	137
			7122	Floor layers and tile setters	35	352

			7123	Plasterers	29	236
			7124	Insulation workers	39	72
			7125	Glaziers	33	83
			7126	Plumbers and pipe fitters	38	832
			7127	Air conditioning and refrigeration mechanics	38	
		7130		Painters, building structure cleaners and related trades workers	34	1087
			7131	Painters and related workers	33	828
			7132	Spray painters and varnishers	34	130
			7133	Building structure cleaners	48	36
	7200			Metal, machinery and related trades workers	38	7001
		7210		Sheet and structural metal workers, moulders and welders, and related workers	37	1718
			7211	Metal moulders and coremakers	38	108
			7212	Welders and flamecutters	37	750
			7213	Sheet-metal workers	36	281
			7214	Structural-metal preparers and erectors	38	338
			7215	Riggers and cable splicers	26	18
		7220		Blacksmiths, toolmakers and related trades workers	38	2313
			7221	Blacksmiths, hammersmiths and forging press workers	34	168
			7222	Toolmakers and related workers	40	720
			7223	Metal working machine tool setters and operators	36	983
			7224	Metal polishers, wheel grinders and tool sharpeners	41	284
		7230		Machinery mechanics and repairers	39	2833
			7231	Motor vehicle mechanics and repairers	38	1500
			7232	Aircraft engine mechanics and repairers	54	89
			7233	Agricultural and industrial machinery mechanics and repairers	38	673
			7234	Bicycle and related repairers	26	isei68
	7300			Handicraft and printing workers	33	1956
		7310		Handicraft workers	31	1240
			7311	Precision-instrument makers and repairers	38	240
			7312	Musical instrument makers and tuners	42	15
			7313	Jewellery and precious-metal workers	36	118
			7314	Potters and related workers	29	90
			7315	Glass makers, cutters, grinders and finishers	35	88
			7316	Sign writers, decorative painters, engravers and etchers	30	80
			7317	Handicraft workers in wood, basketry and related materials	33	20
			7318	Handicraft workers in textile, leather and related materials	25	423
			7319	Handicraft workers not elsewhere classified	34	166
		7320		Printing trades workers	36	686
			7321	Pre-press technicians	38	254
			7322	Printers	37	193
			7323	Print finishing and binding workers	34	154
	7400			Electrical and electronic trades workers	43	2848
		7410		Electrical equipment installers and repairers	43	1955
			7411	Building and related electricians	43	859
			7412	Electrical mechanics and fitters	42	857
			7413	Electrical line installers and repairers	43	239
		7420		Electronics and telecommunications installers and repairers	44	509

			7421	Electronics mechanics and servicers	45	321
			7422	Information and communications technology installers and servicers	41	188
	7500			Food processing, wood working, garment and other craft and related trades workers	27	5386
		7510		Food processing and related trades workers	29	1525
			7511	Butchers, fishmongers and related food preparers	29	485
			7512	Bakers, pastry-cooks and confectionery makers	29	729
			7513	Dairy-products makers	34	43
			7514	Fruit, vegetable and related preservers	24	55
			7515	Food and beverage tasters and graders	32	35
			7516	Tobacco preparers and tobacco products makers	10	19
		7520		Wood treaters, cabinet-makers and related trades workers	32	865
			7521	Wood treaters	27	66
			7522	Cabinet-makers and related workers	34	618
			7523	Woodworking-machine tool setters and operators	21	79
		7530		Garment and related trades workers	25	2824
			7531	Tailors, dressmakers, furriers and hatters	24	1074
			7532	Garment and related pattern-makers and cutters	27	105
			7533	Sewing, embroidery and related workers	24	947
			7534	Upholsterers and related workers	29	94
			7535	Pelt dressers, tanners and fellmongers	30	50
			7536	Shoemakers and related workers	27	304
		7540		Other craft and related workers	32	172
			7541	Underwater divers	32	6
			7542	Shotfirers and blasters	49	14
			7543	Product graders and testers (excluding foods and beverages)	32	
			7544	Fumigators and other pest and weed controllers	32	
			7549	Craft and related workers not elsewhere classified	32	
8000				Plant and machine operators, and assemblers	32	15376
	8100			Stationary plant and machine operators	29	6127
		8110		Mining and mineral processing plant operators	39	693
			8111	Miners and quarriers	40	403
			8112	Mineral and stone processing plant operators	39	27
			8113	Well drillers and borers and related workers	46	51
			8114	Cement, stone and other mineral products machine operators	33	88
		8120		Metal processing and finishing plant operators	33	487
			8121	Metal processing plant operators	35	251
			8122	Metal finishing, plating and coating machine operators	31	133
		8130		Chemical and photographic products plant and machine operators	35	516
			8131	Chemical products plant and machine operators	35	425
			8132	Photographic products machine operators	34	65
		8140		Rubber, plastic and paper products machine operators	31	451
			8141	Rubber products machine operators	29	105
			8142	Plastic products machine operators	31	250
			8143	Paper products machine operators	36	69
		8150		Textile, fur and leather products machine operators	21	1300

			8151	Fibre preparing, spinning and winding machine operators	27	158
			8152	Weaving and knitting machine operators	20	209
			8153	Sewing machine operators	18	464
			8154	Bleaching, dyeing and fabric cleaning machine operators	19	164
			8155	Fur and leather preparing machine operators	22	19
			8156	Shoemaking and related machine operators	18	77
			8157	Laundry machine operators	24	isei88
			8159	Textile, fur and leather products machine operators not elsewhere classified	27	92
		8160		Food and related products machine operators	22	716
		8170		Wood processing and papermaking plant operators	29	503
			8171	Pulp and papermaking plant operators	33	108
			8172	Wood processing plant operators	27	190
		8180		Other stationary plant and machine operators	29	1289
			8181	Glass and ceramics plant operators	25	111
			8182	Steam engine and boiler operators	26	142
			8183	Packing, bottling and labelling machine operators	27	isei68
			8189	Stationary plant and machine operators not elsewhere classified	30	1036
	8200			Assemblers	29	1100
		8210		Assemblers	29	1100
			8211	Mechanical machinery assemblers	33	240
			8212	Electrical and electronic equipment assemblers	27	127
			8219	Assemblers not elsewhere classified	28	527
	8300			Drivers and mobile plant operators	36	7381
		8310		Locomotive engine drivers and related workers	44	357
			8311	Locomotive engine drivers	52	155
			8312	Railway brake, signal and switch operators	35	140
		8320		Car, van and motorcycle drivers	36	1753
			8321	Motorcycle drivers	33	188
			8322	Car, taxi and van drivers	36	1565
		8330		Heavy truck and bus drivers	36	3549
			8331	Bus and tram drivers	37	743
			8332	Heavy truck and lorry drivers	36	1832
		8340		Mobile plant operators	31	1482
			8341	Mobile farm and forestry plant operators	22	291
			8342	Earthmoving and related plant operators	35	358
			8343	Crane, hoist and related plant operators	35	341
			8344	Lifting truck operators	29	294
		8350		Ships' deck crews and related workers	44	199
9000				Elementary occupations	20	20003
	9100			Cleaners and helpers	17	7865
		9110		Domestic, hotel and office cleaners and helpers	17	7087
			9111	Domestic cleaners and helpers	17	2353
			9112	Cleaners and helpers in offices, hotels and other establishments	16	3505
		9120		Vehicle, window, laundry and other hand cleaning workers	20	778
			9121	Hand launderers and pressers	19	323
			9122	Vehicle cleaners	20	
			9123	Window cleaners	20	

			9129	Other cleaning workers	20	
	9200			Agricultural, forestry and fishery labourers	14	2463
		9210		Agricultural, forestry and fishery labourers	15	2376
			9211	Crop farm labourers	16	isei68
			9212	Livestock farm labourers	20	isei68
			9213	Mixed crop and livestock farm labourers	18	isei68
			9214	Garden and horticultural labourers	16	isei68
			9215	Forestry labourers	19	195
			9216	Fishery and aquaculture labourers	19	51
	9300			Labourers in mining, construction, manufacturing and transport	24	5641
		9310		Mining and construction labourers	22	1639
			9311	Mining and quarrying labourers	24	43
			9312	Civil engineering labourers	23	608
			9313	Building construction labourers	22	834
		9320		Manufacturing labourers	23	2391
			9321	Hand packers	23	734
			9329	Manufacturing labourers not elsewhere classified	21	408
		9330		Transport and storage labourers	27	1388
			9331	Hand and pedal vehicle drivers	21	55
			9332	Drivers of animal-drawn vehicles and machinery	31	47
			9333	Freight handlers	28	622
			9334	Shelf fillers	20	
	9400			Food preparation assistants	15	
		9410		Food preparation assistants	15	
			9411	Fast food preparers	20	
			9412	Kitchen helpers	10	isei68
	9500			Street and related sales and service workers	25	547
		9510		Street and related service workers	22	102
		9520		Street vendors (excluding food)	26	445
	9600			Refuse workers and other elementary workers	26	1848
		9610		Refuse workers	17	556
			9611	Garbage and recycling collectors	18	148
			9612	Refuse sorters	17	
			9613	Sweepers and related labourers	17	332
		9620		Other elementary workers	29	1292
			9621	Messengers, package deliverers and luggage porters	30	866
			9622	Odd job persons	20	
			9623	Meter readers and vending-machine collectors	34	66
			9624	Water and firewood collectors	20	
			9629	Elementary workers not elsewhere classified	20	