



## ANNEX 2

# EXPERT GROUP ON GRADUATE TRACKING

## **Task force 2:**

Final conclusions on  
tracking mobile graduates

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# 1.0 Introduction

The Council Recommendation on tracking graduates places a strong focus on understanding the causes of graduate employability problems in particular regions, economic sectors, particular higher education study fields or vocational education and training (VET) programmes, and among graduates with particular socio-economic or demographic characteristics. Examining the experiences of graduates who migrate can play an important role in understanding and addressing these policy concerns.

Workers' mobility across Europe has risen significantly in recent years, also as a result of the increased (relative) opportunities that richer countries can offer to those endowed with medium and high levels of human capital. Recent evidence (see European Commission, 2018) shows that, while mobile workers are still a small fraction of the overall workforce, the number of EU movers is rising in almost all countries, with higher numbers for medium and high skilled individuals<sup>1</sup>.

The possibility of tracking mobile graduates across Europe (and beyond) would provide policy makers with important information on highly relevant dimensions such as:

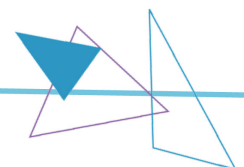
1. individual/regional/country factors associated with international graduate mobility;
2. patterns, volumes, causes, and effects of brain drain and brain gain.

Greater insights into this area would enable policy makers and stakeholders to facilitate mobility of EU-citizens and to better understand its socio-economic consequences.

Against this background, Task Force 2 was mandated to explore options on how to best capture graduates who have migrated across borders for the purpose of employment or further education and training. The group focused on the potential for cross-country collaboration in the collection and sharing of data, by assessing data sources to be used, new data collection which might be required, data protection rules to be considered, and core indicators that would ideally be collected and defined consistently across two or more countries.

In line with the Council Recommendation, the Task Force agreed to limit the scope of the population to graduates migrating within the European Union (EU) and the European Economic Area (EEA). In addition, members of the Task Force 2 examined several definitions of the target population, such as the ones used by the European Migration Network, the Organisation for Economic Cooperation and Development, the European Union Labour Force Survey, and the International Organisation for Migration. Although many definitions include a reference to a period of at least 12 months that a person needs to be in a country other than that of his/her usual residence, the group decided that introducing a minimum period of permanence abroad was not useful<sup>2</sup>. The Task force 2 converged to the following definition of a mobile graduate:

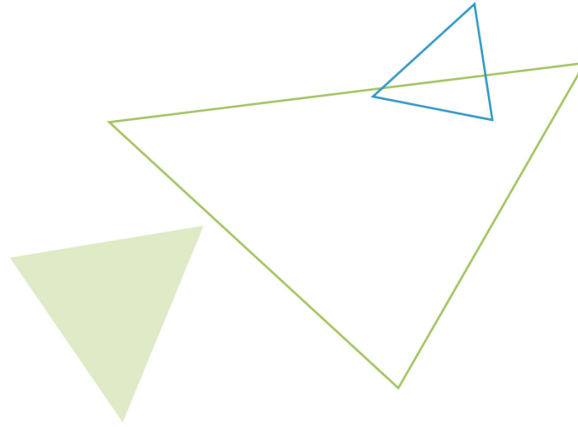
A mobile graduate is a person possessing an academic (equivalent to EQF-level 6 and higher) or a vocational degree (equivalent to EQF-level 4 and higher) and working or learning in a different country from that of graduation at any point following completion of his/her studies.



<sup>1</sup> Medium skilled individuals are those with completed ISCED 3-4 levels of education (including VET graduates), while high skilled individuals are those with completed ISCED 5-6-7-8 levels (including bachelor, masters and doctoral graduates).

<sup>2</sup> Most Member States have a legislative minimum period of residency for a person to be encoded in one or other countries social security, taxation, etc. systems. In most countries it is 'more than 6 months' for social security, and 'more than 3 months' for taxation.

In addition, we could consider whether it would be appropriate to also use the location of work (as an alternative to the area of residence), as some graduates move daily or weekly to another country for work purposes, while keeping residency in their own country<sup>3</sup>. If the residency criterion was used, these graduates would not be counted as mobile graduates.



<sup>3</sup> This, for example, is an issue in Italy: about 70.000 Italians move daily to Switzerland for work, but they reside in Italy.

## 2.0 How data on graduates' mobility should be structured in order to answer the key policy questions

Collecting European harmonized information about the volumes and patterns of mobile graduates is important, for at least two reasons. First, because the perspective on labour market outcomes of graduates would be incomplete if mobile graduates were not considered<sup>4</sup>. Second, because expanding knowledge on mobile graduates is an important objective per se, as it provides insights on one of the key dimensions of the EU (free movement of people), and on establishing the European Education Area.

Task Force 2 identified two broad issues as particularly relevant for mobile graduates and which could be derived from a harmonized European graduate tracking mechanism. The first one includes the (individual/regional/country) drivers of international graduate mobility, whilst the second one relates to the socio-economic effects of brain drain/brain gain.

The main policy questions related to these issues are reported below:

1. What are the sectors that attract most mobile graduates?
2. To what extent are the skills and knowledge acquired by individuals while studying in a given country relevant for a job in another country?
3. What are the skills and knowledge needed in an international market?
4. Do mobile graduate workers earn, on average, more than similar workers who do not move abroad? If yes, does the wage premium associated with moving abroad change depending on the home country or destination country?
5. Do mobile graduate workers display higher levels of job satisfaction than similar workers who do not move abroad?

Data on mobile graduates, in relation to the above policy questions, can be obtained by survey and/or administrative data (see Section 3 [EU data sources](#) below; see also Task Force 1 Annex, section 6.0). Also, data on mobile graduates needs to satisfy the quality criteria defined by Task Force 1 (see Task Force 1 Annex), with one additional criterion: it is necessary to ensure that mobile graduates are well represented by the data. If it were possible to use administrative data and identify mobile graduates, representativeness would be guaranteed. However, this criterion might be difficult to satisfy with survey data, since the information on the population of mobile graduates is not readily available, making it difficult to draw any sample. Moreover, to survey a sufficient number of graduates who migrated, one would need up-to-date contact information, which might be especially challenging for mobile graduates (and even more so for mobile VET graduates).

On the other hand, the existing data/legal infrastructure does not allow identifying and hence tracking mobile graduates with administrative data. Currently, it is not possible to link educational register data from one country with employment-social security-tax database of another country. For this, we would need a unique EU identifier (EU-ID) or another way for linking records from different databases<sup>5</sup>. However, even in the case of such an EU-ID, countries would first need to harmonize administrative data and reach an agreement on

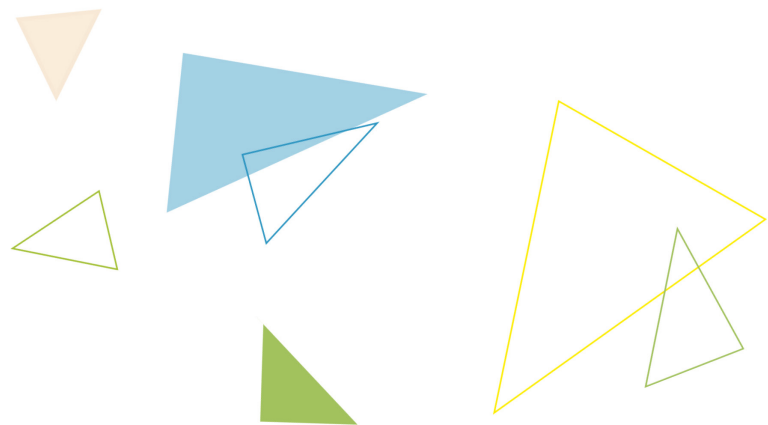
<sup>4</sup> The key policy questions relevant under this first objective are the same as those for graduates in general and are discussed in the report by Task Force 1 (Section 4.0).

<sup>5</sup> Some relevant EU projects could provide relevant information on how this could be done (see: Erasmus Without Paper, Mobility Tool, EMREX, eIDAS).

shared access to a common set of key data necessary to answer the above listed policy questions. Since the educational systems differ among EU Member States, this might be a very demanding process.

Moreover, administrative data have the drawback that they are not informative of opinions, motivations, expectations and/or evaluations - i.e. non-factual characteristics. Additionally, Task Force 3 noticed that even if shared linked administrative data were available for EU Member States and other EEA countries, this data would not cover mobile graduates that come from (or move to) countries outside the EU or the EEA. Information on these extra-EU mobile graduates could be obtained only with the help of a survey.

Since completing databases with information on mobile graduates requires time and resources, Task Force 2 agreed that it is crucial to clearly communicate the benefits of collecting and sharing data on mobile graduates to both sending and receiving countries. Specific needs of higher education and VET institutions should be considered to ensure their participation. This includes, inter alia, their active involvement in designing the graduate tracking initiative, access to data for further institutional analysis and financial support.



## 3.0 Status of current data collection on mobile graduates

Answering the specific key policy questions outlined above (and those common to all graduates) requires drawing on data, which is currently not available in all EU Member States. The analysis of Task Force 3 on administrative data for mobile graduates concluded that it is currently impossible to link administrative data across countries (including EU Member States), even when they exist and cover all the relevant aspects within the country. Moreover, many countries (and Member States) do not have in place data infrastructures linking (internally) education register-social security-employment-tax data (see Task Force 3 Annex).

### 3.1 EU data sources

At the EU level, there are some data sources that Task Force 2 has considered (with support from Task Force 3). Currently, they do not provide the necessary information to track labour market outcomes (and other relevant data) of mobile graduates (based on the definition agreed within the Task Force 2).

The [Eurostat database of migration and citizenship data](#) (Regulation on Community statistics on migration and international protection, No 862/2007) provides data on in- and out-flows of foreigners and nationals, according to citizenship or previous/next country of residence. However, there is no obligation for the Member States to break down the numbers of EU foreigners by individual citizenship (although this aspect is improving). The only additional variables available (apart from citizenship) are age group and gender, but no information is provided on the duration of residence, **employment status**, or the **education level**. Another limitation of data based on administrative registers is that they might underestimate the number of migrants, since some foreigners may not register out of fear, lack of discipline or motivation; or registration may occur with a delay, therefore possibly involving a bias in any dynamic analysis of these data.

The [EU Labour Force Survey](#) is a large household sample survey providing quarterly results on labour participation of people aged 15 and over, as well as on persons outside the labour force. Main limitations include: the non-response rates among foreigners are very high, due notably to language issues; in many Member States there is a delay in entering the reference sample frame and very recently arrived foreigners may not be covered well; small sample size in many countries reduces the possible use of the data broken down by citizenship. Finally, a major problem with EU LFS data is that it is **not possible to identify the nationality of migrant workers, nor the place in which they graduated**. National LFS might provide more information.

Task Force 2 discussed other instruments which could be used to build evidence on graduates' mobility, such as the [European Student Card initiative](#), which, as part of the European Education Area objectives, should ensure seamless student mobility by 2025. The European Student Card, based on the [MyAcademicID](#), will provide a unique student e-identifier to allow students to securely share authenticated personal data and qualifications with their host institutions. By using their smartphones, students will be able to register for courses, or sign up for services such as libraries and accommodation. With regards to the mandate of the Task Force, this student identifier would be lost after graduation and hence could not be used to link educational and labour market data.

Another option that could be relevant for establishing links between different records is the current work on the eIDAS Regulation as a tool that should be available to all EU citizens<sup>6</sup>. Task force 3 looked more closely into this option (see Task force 3 Annex).

<sup>6</sup> See: <https://ec.europa.eu/digital-single-market/en/news/digital-identity-and-trust-commission-launches-public-consultation-eidas-regulation>.



Other sources mentioned by Task Force 2 members:

- > OECD databases on international migration: <http://www.oecd.org/els/mig/oecdmigrationdatabases.htm>
- > OECD Statistics on Health Workforce Migration: [https://stats.oecd.org/Index.aspx?DataSetCode=HEALTH\\_WFMI](https://stats.oecd.org/Index.aspx?DataSetCode=HEALTH_WFMI)
- > DG GROW database on regulated professions: <http://ec.europa.eu/growth/tools-databases/regprof/>
- > European Social Survey
- > EU Statistics on Income and Living Conditions (EU-SILC)

### 3.2 National sources

On the other hand, there are a few **national (higher education) graduate surveys** containing information on individuals who completed higher education studies in a given country, but moved abroad at some point after graduation. Examples of these surveys are:

- a. **German Panel Graduate Survey**- this survey is conducted to give a nationally representative longitudinal sample of individuals who completed their undergraduate studies in Germany. Graduates are surveyed at about 1 and 5 years after graduation. It allows identifying those graduates who moved outside Germany as the relevant questionnaire contains a question about the location of work. The latest wave (AP2017) is a nationwide survey of the 2017 graduate cohort. A random sample of 75,000 graduates was drawn, including graduates of all degree levels and all types of HEIs in Germany (with the exception of colleges of public administration and the Military Universities/"*Universitäten der Bundeswehr*")<sup>7</sup>. The survey was carried out using an online questionnaire; the graduates were invited both by post and email. For data protection reasons, contact was made via the HEIs. An average response rate of about 25 % was reached.
- b. **Survey on University to Work Transition (*Inserimento professionale dei laureati*)** - this survey is conducted by the Italian National Statistical Institute (ISTAT). This is a nationally representative survey targeted at individuals who graduated from Italian universities. Graduates are surveyed at about 4 years following completion of their studies (but they are also asked to report retrospectively about their labour market status one year after graduation). It allows identifying those graduates who moved outside of Italy, as the relevant questionnaire comprises a question about graduates' area of residence at the time of the survey. However, it does not contain any information on the location of work. Graduates are invited to reply to the questionnaire through a letter from the President of ISTAT. They can fill in the electronic questionnaire via CAWI (*Computer-Assisted Web Interviewing*), or they can opt for a phone call via CATI (*Computer-Assisted Telephone Interviewing*). The latest survey was held in 2018, with graduates from 2015.
- c. **Survey on Graduates' occupational status (*Condizione occupazionale dei laureati*)** conducted by Almalaura (a consortium of Italian universities collecting information on graduates). Graduates are surveyed at about 1, 3 and 5 years after graduation. The survey also keeps track of graduates even if they move abroad. The 22<sup>nd</sup> Survey on Graduates' Employment Status has involved overall 650,000 graduates from 76 Italian Universities<sup>8</sup>. Graduates have been contacted first with a series of emails (up to 5), inviting them to respond to the questionnaire via CAWI (*Computer-Assisted Web Interviewing*). If this failed, graduates were contacted by telephone, with the invitation to respond to the questionnaire via CATI (*Computer-Assisted*

<sup>7</sup> Individual study programmes of various HEIs are included in the sample. It is also possible to include multiple programmes from a single HEI. The field phase for the first wave of the survey took place from October 2018 to April 2019.

<sup>8</sup> The Survey refers to 278,000 2018 post-reform first- and second-level degree programme graduates interviewed at one year from graduation; all the 2016 second-level degree programme graduates (114,000) interviewed at three years from the achievement of the degree and all the 2014 second-level degree programme graduates (110,000) investigated at five years from the completion of their studies. Finally, two specific investigations have focused on the first-level graduates of 2016 and 2014 that did not continue their university studies (79,000 and 69,000), interviewed respectively at three and five years from graduation.

*Telephone Interviewing*). The availability of email addresses was between 92.7 % to 95.1%, depending of the graduation cohort. The response rates for the CAWI interviews were between 23.7 and 27.75.

- d. Although regular waves of the **Norwegian graduate surveys**<sup>9</sup>, undertaken 6 months following graduation, do not comprise information about mobility after graduation, the special graduate surveys conducted in 2002 and 2007 (looking at graduates 3-4 years after graduation) include graduates working abroad.

Information included in the above surveys on HE graduates who moved to another country following graduation has been mainly exploited by studies aimed at investigating the relationship between studying abroad during higher education and international labour mobility later in life (e.g. Parey and Waldinger, 2011; Di Pietro, 2012).

Schomburg (2011), putting together information contained in various country reports (6 countries), mainly based on graduate surveys, looks at the proportion of graduates working abroad after graduation at the time of the survey. He finds that this measure varies from less than 5% to less than 10% among Bachelor graduates.

Ongoing work by the European Commission Joint Research Centre (JRC) uses national graduate surveys from four European countries to assess the impact of mobility during tertiary education on labour market outcomes after graduation.

There are also **impact studies of Erasmus and Erasmus+ programmes**, carrying out ad-hoc surveys addressed to alumni (graduates), distinguishing between those who were mobile and those who were not during the course of their degree (see Brandenburg et al., 2014; Souto-Otero, et al., 2019). Through the data included in these surveys, it is possible to compare these two groups of individuals based on several outcomes, including living/working abroad following graduation.

Two **EU-funded graduate surveys** (REFLEX - *Research into employment and professional flexibility*- and HEGESCO - *Higher Education as a generator of strategic competences*) collected survey data on graduates from 19 countries, contacted 5 years after graduation. The data contain relevant information about graduates who moved abroad. In particular, they track whether the first job after graduation was in a different country from that of graduation and whether the graduate was living abroad 5 years after graduation.

Finally, according to the Graduate tracking mapping study (ICF Consulting (2020)), there are only a few additional (i.e. beyond those mentioned above) graduate tracking measures in EU MS collecting information on individuals completing higher education who move abroad after graduation. They are:

- > Germany: administrative data (*Integrated Employment Biographies Sample*, SIAB);
- > Spain: a combination of administrative and survey data (*Survey of the labour insertion of university graduates*, EILU);
- > Netherlands: administrative data (*SEO Study & Work*, by Amsterdam Economics);
- > Netherlands: *Insight into career outcomes and skills of Dutch graduates* with LinkedIn;
- > Finland.

As for VET, ICF Consulting (2020) reports that the following countries record information on migrant VET graduates:

- > Austria: a combination of administrative and survey data (Monitoring of graduates of vocational education/ “*Ibw-LehrabsolventInnenmonitoring*”);
- > Germany: administrative data (*Integrated Employment Biographies Sample*, SIAB);
- > Latvia: administrative data (VET graduate tracking system);

<sup>9</sup> This survey is conducted every two years, interviewing master's graduates from the spring term. With a few exceptions, all graduates from Norwegian higher education institutions are included and the overall response level is around 50%.

- > Portugal: a combination of administrative and survey data (*Observatory of secondary students' trajectories; Youth in post-secondary survey*).
- > Information on mobile graduates was also collected by the Eurograduate Pilot project for the eight participating countries<sup>10</sup> (Austria, Croatia, Czechia, Germany, Greece, Lithuania, Malta, Norway).

### 3.3 Non-EU sources

The Task Force also recognised several interesting examples of graduate tracking (including of mobile graduates) outside of the EU which can inspire the EU graduate tracking initiative:

#### Australia

In Australia, there is the [Quality Indicators for Learning and Teaching](#) (QILT) programme, which drives a suite of [Graduate Outcome Surveys](#) (GOS) and associated analysis and reporting on [Graduate Employment, Graduate Satisfaction and Employer satisfaction](#). It also feeds into a [targeted website](#) that can be referenced by, for example, prospective students to compare institutions/study areas on dimensions like student satisfaction, skills, labour market outcomes etc. The GOS is completed by graduates of Australian higher education institutions, approximately four months after completion of their courses. GOS is funded by the federal government and has been in place since 2016.

#### New Zealand

While NZ authorities do not track students once they are overseas, the labour market outcomes of tertiary graduates inside NZ are examined. [This link](#) shows the work undertaken by the Tertiary Education Commission (TEC), and the statistics that are made available to the public. The work is done in the Integrated Data Infrastructure (IDI) datalab run by Statistics NZ. It uses the National Student Number, enrolment and achievement data supplied by the Ministry and tax and other data supplied by other parts of the Government. It mostly requires the ability to link data from a number of sources, ensuring the results do not allow the identification of individual students and then publish the findings (see also [this link](#)). Alongside the IDI work, there is a major tertiary graduate survey conducted by universities – see [here](#).

#### USA

In the United States, in the context of a US Department of Treasury led initiative, States have individually sought to combine data in a national database, and to publish the wage outcomes of their college graduates by institution. Such rich dataset has been used to study intergenerational mobility (Chetty et al., 2017)). Task Force 2 members were informed that the National Student Clearinghouse and Research Centre (NSC) is in the process of superseding this with a national platform. Concerning matching different records, the Census Bureau's Person Identification Validation System (PVS) assigns unique person identifiers (Protected Identification Key or PIK) to federal, commercial, census, and survey data to facilitate linkages across and within files. PVS uses probabilistic matching to assign a unique Census Bureau identifier for each person. The PVS matches incoming files to reference files created with data from the Social Security Administration (SSA) Numerical Identification file, and SSA data with addresses obtained from federal files. Importantly the PIK is an anonymous identifier as unique as a SSN. As such and once assigned it is used to replace all personal 9 identifiable information (PII) such as name, address or date of birth from the files. The PIK serves as a person linkage key across all files that have been processed using PVS. The PIK also serves as a person unduplication key within files. Its use enhances the confidentiality of respondents' information by protecting their identity.

<sup>10</sup> See Task Force 1 Annex for a discussion of the lessons learned from the Eurograduate Project concerning sampling and contact details (including for mobile graduates).

## 4.0 Possible ways forward

Task force 2 recognizes that there are several obstacles to creating a harmonized European system including information on mobile graduates:

1. A central registry of education is missing in several countries.
2. Cooperating with educational institutions is sometimes complex.
3. A number of Member States lack a comprehensive national graduate tracking system.
4. When they exist, graduate tracking systems are often structurally different and not easily comparable across countries.
5. In several countries, administrative data on the different relevant aspects (education, social security, employment, tax register, tax authority etc.) are either missing or not linked to each other.

The most prominent difficulty is the existing impossibility of connecting different systems and different countries. This could potentially be solved by establishing a cross-border (or European) ID, if such connections can be put in place in compliance with the GDPR Regulation.

When considering the options available (see Task Force 1 Annex), based on survey data or administrative data or on a combination of both, some specific aspects should be considered for tracking mobile graduates.

**Survey data:** A graduate survey is designed to be representative with respect to the graduate population (which is known), but, typically, it is not designed to be representative with respect to the sub-population of mobile graduates (whose dimension and characteristics are ex-ante unknown<sup>11</sup>). Sampling design will have to address this problem, making sure that migrant graduates are properly represented. Also, we have to be aware that the contact details (e.g. the email addresses) of graduates collected at the time of graduation might not be operative/functioning (or often checked) when graduates find a job or move to another country. It would be very important to collect contact details that are likely to be stable (e.g. parents address). Additionally, in a survey one has to find ways to cope with challenges of retrospective rationalization, e.g. regarding causes of migration.

**Administrative data** (employment, tax, and social security data linked to education data sources): high cooperation across EU MS is necessary, as these data come from different countries (employment/social security/tax relates to the country where the graduate currently works, while education data relate to the country where the graduate completed his/her studies). This is not possible with the current data/legal infrastructure. Moreover, not all countries have in place linked administrative data that are able to track graduates (irrespective of their mobility abroad or not). These aspects should be kept in mind when proposing programmes for capacity-building in the area of administrative data. With administrative data it would be difficult to link data on education in an EU Member State with data from employment/social security/tax registry outside the EU (and vice-versa). In other words, even under the best scenario (linked administrative data available for every country, which can also be linked across different countries in Europe), graduate tracking would be limited to within-EU mobile graduates. Finally, administrative data do not provide information on the drivers of mobility decisions nor on expectations/opinions. Such information can only be obtained with a survey.

Considering the pros and cons of administrative vs. survey data, and the current legal and data infrastructure, Task Force 2 agrees that it is necessary to distinguish between a short-run and a medium/long run approach. In the short run, and with the caveats on mobile graduates representativeness, an EU-wide survey appears as the only solution able to gather at least some information on the policy questions presented in Section 1 in a

<sup>11</sup> In fact, this is one of the goals of an EU graduate survey.

reasonable time and with limited costs. However, it is important to ensure that such a European survey does not interfere negatively with existing national graduate surveys.

On the other hand, a medium/long run objective would be that of supporting MS towards the development of linked administrative datasets that can be used to track graduates, including migrant ones. For the latter group it would be necessary to solve the problem of linking administrative data across countries.

Moreover, administrative data can hardly provide information on non-factual aspects (such as expectations/motivations). So, the ideal medium/long-term solution would be that of combining administrative data, able to capture factual characteristics (see Task Force 1 Annex), with a EU graduate survey whose ambition and length would depend on the existence/absence of national graduate surveys. In general, if administrative data are linked across countries (e.g. following the introduction of a unique European identifier), it would be possible to use the former to pre-fill the survey with most of the relevant factual characteristics. In countries where a national survey exists, the European graduate survey could be short and focused on gathering information/data on non-factual aspects that are relevant for policy makers (opinions, motivations, expectations etc.). For countries that do not have/intend to have a national graduate survey, the European graduate survey could be more elaborated as well as adapted to the specific needs of the country.

Concerning the use of an EU survey to track mobile graduates, Task Force 2 recommends developing a special module in the questionnaire, directed specifically at mobile graduates. Below we list some of the questions that could be part of this module:

> **Information on potential drivers of the decision to migrate**

*“Have you got more than one nationality? If yes, from which countries?”.*

*Alternatively: “Did you have any prior connection with the country in which you migrated?”.*

*“What is the nationality of the spouse/partner?”*

*“Do you have any special connection with the country you migrated to?”*

> **Personal motivation and expectations**

*“Why did you decide to look for jobs/move abroad?”*

*“Are you planning to go back to the country you graduated from?”;*

> **Work/education related information**

*“How did you get your job abroad?”:* to gather knowledge on factors affecting successful job search;

*“How long have you been working/living abroad?”:* relevant to get information on the length of stay abroad;

*“Was your university/technical school helpful in getting a job abroad?”:* inform about support from the educational institution;

*“Did you get formal recognition of your foreign degree?”:* informs about barriers to graduate mobility.

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