# PART 5. FLOWS AND NON-EU EUROPE

## Bulgaria

# Bulgaria[1]

## 1. Introduction

Brain drain has been one of the main concerns of Bulgarian society since 1990. The lack of a clear strategy for the transformation of the society and its S&T sector has adversely affected higher educated and skilled personnel. According to the recent evaluations each year the country losses 55,000 to 60,000 of its higher educated and skilled population[2].

The aim of this report is to present a short analysis of international mobility based on the data available on inflow and outflow processes in Bulgaria.

## 2. Emigrant Population

There is not sufficient data on emigration processes in Bulgaria. Here we will try to summarise the facts, collected by different sources.

From the **National Statistical Institute** there are periodic (ad hoc) surveys of Bulgarians, who leave the country have been organised on its boarders by the National Statistical Institute. These surveys are representative for Bulgarian qualified scientists and engineers.

Results from 1995-1996 survey are published in the framework of COST project "Brain drain from Central and Eastern Europe", 1997 and in the Ph.D. thesis of Mr. Kalchev "Foreign migration of Bulgarian population", 2000. (Definitions used follow UN guidelines). They reveal that:

- 11.5% of the outflow from science in Bulgaria between 1989 and 1995 emigrated abroad, and more than 87% of those scientists worked in research.
- The main destinations of scientists were: USA (28%), Canada (9.9%), Germany (16.6%), UK (5.7%), and the Scandinavian countries (8%).
- The main sectors that suffered the brain drain were chemistry, biology, medicine, physics.
- Approximately one fifth of total emigrants are highly educated. These results are similar to a survey conducted in 1991 which found 24.1% of total immigrants highly educated.
- It is suggested that in terms of potential emigration, about half of the students above the age of 18 are potential emigrants.

In 1993, there were 898 Bulgarian students in universities in the USA, and in 2001, it was up to 3,270.[3]

After 1989, the scope and intensity of the emigration dropped:

- The number of total emigration in the period 1990-1991 was some 134,400.

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[1] This report has been prepared by Associate Professor Dr. Rossitsa Chobanova with the coordination of IKU for the project *The Brain-Drain Study — Emigration Flows for Qualified Scientists*.

[2] Data presented by Dr. I. Kalchev, Chief of the Department "Demography" at the National Statistical institute during the working meeting on 19.11.2002 of the State Agency of Bulgarians abroad, and cited in: Science, 2003/1, p.22

[3] Source: "24 hours", 19/11/2001, p.58.

Information on the highly educated personnel (ISCED, classes 5B and 5A) are not well presented

- The number of total emigration in the period 1992-1993 was 136,000. The statistical emigrants (for more then 1 year, but the purpose is not to stay forever) were mainly high-educated persons.
- During the period 1995-1996, about 20% of all emigrants were highly educated personnel ISCED, classes 5a and 5b, and 63%, ISCED 3a. There was a change in the direction of emigration: most went to Germany (20%) followed by Austria (12%). One in ten emigrated out of Europe to the USA, Canada and South Africa.
- In 1996, 19,000 persons returned to Bulgaria. Potential highly education Bulgarian immigrants (ISCED class 5a) was around 17% of total emigrants and 50% of total number of students above age 18.
- There is information available on factors such as age, education, employment possibilities, relatives and colleagues in the country of visit.

The Ministry of Labour and Social Policy has work permission records. The information is collected through the *National employment office*. Table 1 presents information on persons who left Bulgaria between 1990 and 2000 (by home institute).

The State Agency for Bulgarians abroad has some data about Bulgarians abroad.

**Table 1: The number of personnel, left the country by institutes they belong to for the period 1990 – 2000**

| Institute | Emigrants |
|---|---|
| ***Natural sciences*** | 232 |
| Institute of mathematics and informatics | 59 |
| Institute of mechanics | 6 |
| Central Laboratory of parallel processing of information | 13 |
| National laboratory of computer virology | 1 |
| Institute of nuclear investigations | 30 |
| Institute of physics | 19 |
| Institute of electronics | 19 |
| Institute of astronomy | 2 |
| Central laboratory of solar energy and new sources of energy | 2 |
| Central laboratory for optical information | 3 |
| Institute of no organic chemistry | 6 |
| Institute for organic chemistry & Centre of fito chemistry | 8 |
| Institute of catalyse | 5 |
| Central laboratory of electrochemical sources of electricity | 2 |
| Institute of engineering chemistry | 6 |
| Institute of polymers | 3 |
| Institute of physics & chemistry | 5 |
| Institute of molecular biology | 3 |
| Institute of genetics | 1 |
| Institute of physiology | 3 |
| Institute of physiology of plants | 4 |
| Institute of microbiology | 1 |
| Institute of zoology | 1 |
| Institute of forest | 4 |
| Institute of experimental pathology and parasitology | 2 |
| Institute of experimental morphology and anthropology | 2 |
| Institute of biophysics | 9 |
| Institute of biology and immunology of reproduction | 2 |
| Central laboratory of biomedical engineering | 1 |
| Central laboratory of ecology | 1 |
| Institute of oceanology – Varna | 3 |
| Central laboratory of minerals and crystals | 3 |
| Central laboratory of high geodesy | 1 |
| Institute of space research | 2 |
| *Engineering science* | *23* |
| Institute of metals | 6 |
| Institute of informational technologies | 10 |
| Institute of management and system investigations | 4 |
| Central laboratory of mechatronics and tools | 3 |
| *Humanities* | *9* |
| Institute of Bulgarian language | 3 |
| Institute of Balkanistics | 2 |
| Institute of history | 1 |
| Institute of arts | 2 |
| Cyril and Methodius center | 1 |
| *Social science* | *8* |
| Institute of philosophy | 3 |
| Institute of sociology | 1 |
| Institute of psychology | 1 |
| Center of science for science and history of science | 1 |
| Central library | 2 |

*Source: Annual report of the BAS, 2000**

*Note: *This data is not available yearly. Year 2000 is the first one, when this data appear in the annual report of the BAS. There is not data available for agricultural and medical science. The are not a subject of the Bulgarian Academy of Sciences, but of other institutions.*

## 3. Immigrant Population

There were a total of 1,101 permissions issued between 1994 and 2000. More than half of them (54%) went to immigrants with higher education. Among the 597 permissions awarded to the highly educated immigrants, four in five were granted to men and one in five to women (Table 2).

**Table 2. Total number of highly educated immigrants in Bulgaria by gender, September 1, 1994 to October 31, 2000.**

| Age | 20-30 yrs | 31-40 yrs | 41-50 yrs | 51-60 yrs | Total |
|---|---|---|---|---|---|
| Men | 62 | 192 | 128 | 97 | 479 |
| Women | 48 | 41 | 24 | 5 | 118 |
| Total | 110 | 233 | 152 | 102 | 597 |

Most of the highly educated immigrants in Bulgaria are from the USA (131). The next largest shares came from countries of Russia, Greece, Germany, France and the Ukraine (Table 3).

**Table 3. Highly skilled immigrants (HE) in Bulgaria by source country, September 1, 1994 to October 31, 2000.**

| Country | Number of highly skilled |
|---|---|
| France | 34 |
| Greece | 43 |
| UK | 46 |
| Germany | 38 |
| Italy | 20 |
| Turkey | 20 |
| Ukraine | 31 |
| Russia | 50 |
| USA | 131 |
| Other/unknown* | 184 |
| Total | 597 |

* Includes Austria, Netherlands and Sweden each with fewer than 10.

The data presented by the National employment office at the Ministry of Labour and Social Policy in Bulgaria is only for those cases when the local entity registered in Bulgaria requests permission to employ foreign citizen. (Regulations: State Gazette –No/year: 267/92, 120/97, 4/93, 56/94, 43/96, 64/97). For immigrants, who work in foreign companies in Bulgaria permission is not needed, according to the Law on commerce. This makes it very difficult to estimate the number of immigrants in Bulgaria.

In order to identify some process of immigration in Bulgaria, a mini-survey was organised in the frame of the brain-drain study by the Institute of Economics at the Bulgarian Academy of Sciences. Table 4 gives the number of foreigners in Bulgaria who entered through contracts, exchanges and other programmes.

**Table 4. Number of HE foreigners entering Bulgaria for specialisation with mobility made possible by contracts with MES or between government exchange agreements approved PhD students in Bulgaria.**

| State | 1996/1997 | 1997/1998 | 1998/1999 | 1999/2000 | 2000/2001 |
|---|---|---|---|---|---|
| **EU Countries** | | | | | |
| Austria | | | | | 1 |
| Belgium | 2 | 1 | 2 | 2 | 2 |
| Denmark | | | 3 | 1 | 1 |
| France | 15 | 17 | 9 | 7 | 7 |
| Greece | 5 | 4 | 5 | 5 | 5 |
| The Netherlands | 3 | 2 | | | |
| Sweden | | | | 2 | |
| Spain | 4 | 4 | 4 | 4 | 4 |
| Italy | 8 | 4 | 7 | 4 | 5 |
| Finland | 2 | | 2 | | |
| **EFTA** | | | | | |
| Norway | 3 | 3 | 2 | 2 | 1 |
| **Candidates** | | | | | |
| Hungary | 5 | 10 | 14 | 7 | 8 |
| Poland | 8 | 6 | 8 | 8 | 4 |
| Slovakia | 10 | 3 | 4 | 3 | |
| Romania | 1 | 13 | 1 | 1 | 1 |
| **Other Europe** | | | | | |
| Russia | 9 | 5 | 8 | 3 | 3 |
| Moldova | | 8 | 6 | 5 | 0 |
| Belorus | 16 | 1 | 1 | 1 | 1 |
| **Asia** | | | | | |
| Mongolia | 1 | 2 | 1 | 1 | 1 |
| China | 8 | 6 | 7 | 7 | 9 |
| Japan | | | | 3 | 1 |
| India | 2 | 2 | 4 | 2 | 2 |
| **Africa** | | | 2 | | |
| TOTAL | 102 | 92 | 95 | 69 | 56 |
| *Note: MES=… SPEC=… SPE=…* | | | | | |

For the last five years, 414 HE foreigner whose mobility was made possible by contracts with MES or between governments exchange negotiations/agreements approved Ph.D. students in Bulgaria, have come for specialisation from 27 countries.

The annual report 2000 of the Bulgarian Academy of Sciences (BAS) provides data on foreign guest of institutes of the Academy by duration of the stay – up to 3 months and more then 3 months. The field of specialisation of guests is assumed that correlates to the specialisation of the institutes of BAS.

| Table 5: Total numbers of foreign guests of different institutes at the Bulgarian Academy of sciences for a period longer then 3 months for the period in 1990 – 2000* | |
|---|---|
| **Institute** | **Number of foreign guests for a period longer then 3 months for last 10 years** |
| *Natural sciences* | 516 |
| Institute of mathematics and informatics | 30 |
| Institute of mechanics | 30 |
| Central Laboratory of parallel processing of information | 26 |
| National laboratory of computer virology | 56 |
| Institute of nuclear investigations | 33 |
| Institute of physics | 17 |
| Institute of electronics | 23 |
| Institute of astronomy | 18 |
| Central laboratory of solar energy and new sources of energy | 7 |
| Central laboratory for optical information | 1 |
| Institute of no organic chemistry | 5 |
| Central laboratory of electrochemical sources of electricity | 5 |
| Institute of engineering chemistry | 19 |
| Institute of polymers | 1 |
| Institute of physics & chemistry | 9 |
| Institute of molecular biology | 8 |
| Institute of genetics | 2 |
| Institute of physiology | 2 |
| Institute of physiology of plants | 6 |
| Institute of microbiology | 13 |
| Institute of botanics | 9 |
| Institute of zoology | 19 |
| Institute of forest | 77 |
| Institute of experimental morphology and anthropology | 1 |
| National nature science museum | 14 |
| Central laboratory of biomedical engineering | 5 |
| Central laboratory of ecology | 3 |
| Geophysical institute | 10 |
| Institute of ocean – Varna | 3 |
| Central laboratory of minerals and crystals | 3 |
| Central laboratory of high geodesy | 17 |
| Institute of space research | 20 |
| Central laboratory of solar – earth interactions | 16 |
| Institute of water problems | 8 |
| *Engineering science* | *57* |
| Central lab. for seismic mechanics and seismic engineering | 2 |
| Institute of metals | 13 |
| Lab. Of physics/chemical mechanics | 13 |
| I-te of computer and communicational systems | 2 |
| I-te of informational technologies | 9 |
| I-te of management and system investigations | 12 |
| Central laboratory of mechatronics and tools | 6 |
| *Humanities* | *103* |
| I-te of Bulgarian language | 1 |
| I-te of Literature | 2 |
| I-te of Balkanistics | 3 |
| I-te of history | 9 |
| I-te of thracology | 67 |
| Ethnographic institute and museum | 8 |
| Archeological institute and museum | 4 |
| Institute of arts | 9 |
| *Social science* | *49* |
| Institute of philosophy | 10 |
| Institute of legal studies | 1 |
| I-te of sociology | 23 |
| I-te of psychology | 3 |
| Central library | 12 |

Note: The data is not available yearly. Year 2000 is the first one, when this data appear in the annual report of the BAS. There is not data available for agricultural and medical science. They are not a subject of the Bulgarian Academy of Sciences, but of other institutions.

**Table 6: The number of HE refugees received statute in Bulgaria at 16.05.2000***

| HE level | Men | Women | Total |
|---|---|---|---|
| College | 1 | - | 1 |
| B.A. | 7 | 3 | 10 |
| M.A. | 151 | 40 | 191 |
| TOTAL | 159 | 43 | 202 |

*Note: *The data refers the date of request for opening the procedure for refugee statute*

The best presented professions of HE refugees are doctors, economists, teachers and engineers.

**Table 7: Number of HE refugees by better presented professions at 16.05.2000**

| Profession | Number | % of the total number of refugees |
|---|---|---|
| Doctor | 36 | 3.26 |
| Economist | 26 | 2.36 |
| Teacher | 26 | 2.36 |
| Engineer | 23 | 2.08 |
| Agronomist | 9 | 0.81 |
| Journalist | 9 | 0.81 |
| Military specialist | 8 | 0.72 |
| Pedagogue | 5 | 0.45 |
| Philologist | 5 | 0.45 |

This data does not cover all refugees. The table gives an orientation of the directions, in which the profession of the HE immigrants may affect the internal labour market in Bulgaria. The total number here means all refugees, registered after the Law came in force, until 16.05.2000.

## 4. Conclusions and Policy Recommendations

The lack of clear strategy for transformation of the society and its S&T sector has affected the most adversely higher educated and skilled personnel.

The immigrant flows are to be neglected comparatively to the emigration in Bulgaria. The country has lost one small town of 55,000 to 60,000 of its higher educated and skilled population each year during the last decade.

The lack of availability of data is burdening the detailed analysis. In this respect it is extremely important to launch a survey on this topic to collect much more facts on flows.