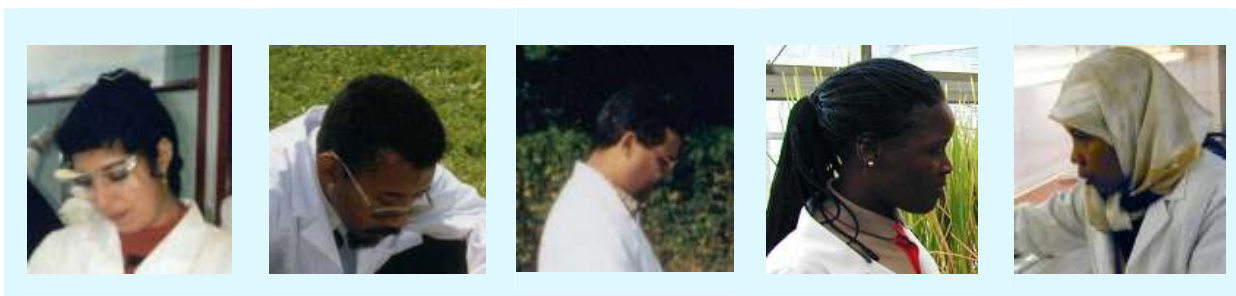


International Atomic Energy Agency Fellows: Where Are They Now?

The Department of Technical Cooperation's Report
on the Results of the In-Depth Study on Fellowships
in Seven Countries



IAEA

International Atomic Energy Agency

This report summarizes the results collected through the in-depth study of former IAEA fellows in selected countries and compares them with the results from the original fellowship survey. The main aim of the in-depth study was to validate the data gathered from that first study, i.e. to ensure that the data and the conclusions were representative of all fellows from those years, not only of the ones participating in the survey. For that purpose, the same questionnaire as for the first survey was sent to fellows from a selected number of countries.

Since not all fellows from the selected countries could be traced in the course of this study, the in-depth study – like the original survey – yielded results based on a sample of the overall population of fellows from the years 2001 and 2002. This sample is not strictly representative, because only those fellows whose contact information could be found are included. Due to this biased sample, the results on the questions regarding mobility and brain-drain are not strictly representative of all fellows from 2001 and 2002.

The study period was October 2005 through January 2006. As with the previous survey, the main difficulty was to obtain up to date contact information for fellows from the years 2001 and 2002 (see below). Seven countries were chosen, from which fellows were asked to participate in this in-depth study. The countries were chosen according to the following:

- Region: two countries per region, except for Europe, where only one country was chosen
- Size: one larger and one smaller country from each region
- State of development: one more, one less advanced per region
- Participation rate: one with a higher, one with a lower rate of participation in the first survey
- Number of fellows: more than three fellows per country, to ensure representativity

Table 1: Countries selected for in-depth study.

	Region	Total number of fellows in 2001/2002	State of development	Rate of participation in the first survey
Chile	Latin America	18	Upper middle-income country	17%
Jordan	Asia	29	Lower middle-income country	28%
Myanmar	Asia	39	Least developed country	31%
Nicaragua	Latin America	15	Low-income country	7%
Slovenia	Europe	11	Country in transition	36%
Tunisia	Africa	20	Lower middle-income country	40%
Uganda	Africa	17	Least developed country	6%

In summarizing the results of the in-depth study, this report follows the same outline as the original report, *IAEA Fellows: Where Are They Now?*

Participation Statistics

In order to find current contact information for as many fellows from the seven countries mentioned above as possible, several means were used:

- The internet was searched extensively.
- Responsible IAEA staff were consulted (in Technical Divisions including Seibersdorf Laboratories, library etc.).

- National Liaison Officers were asked for their help in updating fellows' contact information.
- The International Nuclear Information System (INIS), which processes scientific and technical literature in the field of peaceful applications of nuclear science and technology, and Science Direct, "the world's largest electronic collection of science, technology and medicine full text and bibliographic information" were searched. Where available, fellows' co-authors were contacted to find out fellows' current contact information.
- Fellows' former home institutes were asked for their assistance in finding former fellows.

Despite these efforts, only an average of 74% of the remaining fellows could be found. In Uganda, valid contact information could only be found for 5 out of 16 (31%) of the remaining fellows. Although atypical among the seven countries considered here, this is typical for a number of less developed countries, particularly in Africa¹.

Overall, 64% of the fellows with valid contact information who had not participated in the original survey participated in the in-depth study. Here, Slovenia can be interpreted as an outlier with only one study participant. Excluding Slovenia, the overall participation rate is 67%.

Table 2: Participation statistics by country.

Country	number of fellows who did not participate in the first survey	number of fellows with valid contact information	rate of fellows with valid contact information	number of fellows participating in the in-depth study	rate of study participants out of fellows with valid contact information
Chile	15	13	87%	12	92%
Jordan	21	15	71%	6	40%
Myanmar	31	25	81%	16	64%
Nicaragua	15	14	93%	10	71%
Slovenia	7	6	86%	1	17%
Tunisia	12	10	83%	8	80%
Uganda	16	5	31%	3	60%
<i>Sum</i>	<i>117</i>	<i>88</i>		<i>56</i>	
<i>Average</i>			<i>74%</i>		<i>64%</i>

39% of the fellows participating in this study were women, compared with 31% female participants in the first survey.

Results and Conclusions

Distribution of fellows participating in the study

Fifty-six percent of the responding fellows from the selected countries did their fellowship in a host institution in their home region (compared with 48% in the first survey). This ratio varies by region, as in the original survey: In Africa, only 18% were trained in their home region, while in Latin America and Asia, 64% each remained in their home region for their fellowship training. The one responding fellow from Europe did his training in Europe as well. These numbers differ slightly from the ones of the original survey, but they show the same trend as the original ones, namely that fellows from Latin America and Asia are more likely to spend their fellowship

¹ According to recent statistics from the Organisation for Economic Co-operation and Development (OECD) and the World Bank, more than one-third of highly qualified people born in Uganda are living and working in an OECD Member Country (developed) today. In the sample of seven countries considered here, Uganda is by far most affected by the brain-drain phenomenon. This could explain at least in part why less than one-third of the fellows from Uganda could be found in the course of this study.

training within their region than fellows from Africa are. And European fellows are the ones most likely to remain within their home region for their training.

The responding fellows did their training mostly in English and in Spanish, as shown in the figure below. In comparison with the original survey, fewer fellows spoke English during their training and more spoke Spanish and Portuguese. This is due to the fact that relatively more fellows from Latin America participated in this in-depth study than in the first survey, and relatively fewer fellows from Asia and Europe did.

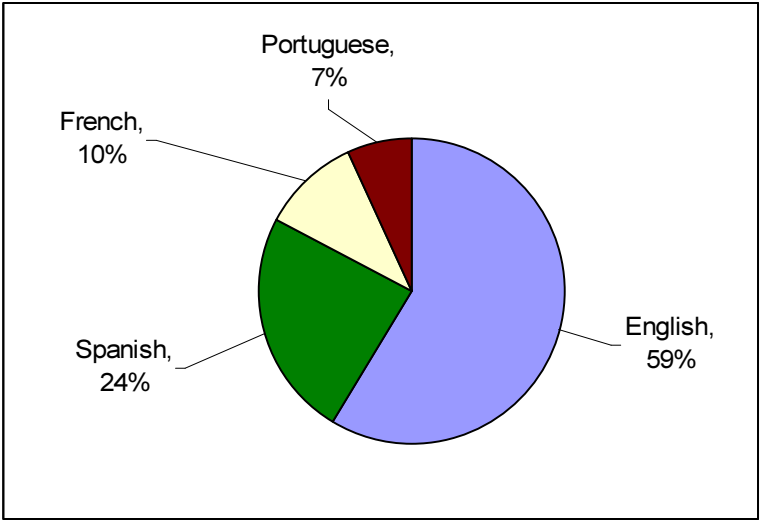


Figure 1: Distribution of responding fellows by training language.

The distribution of the responding fellows' field of work and field of training is shown in Figure 2. This result is very similar to the one from the first survey.

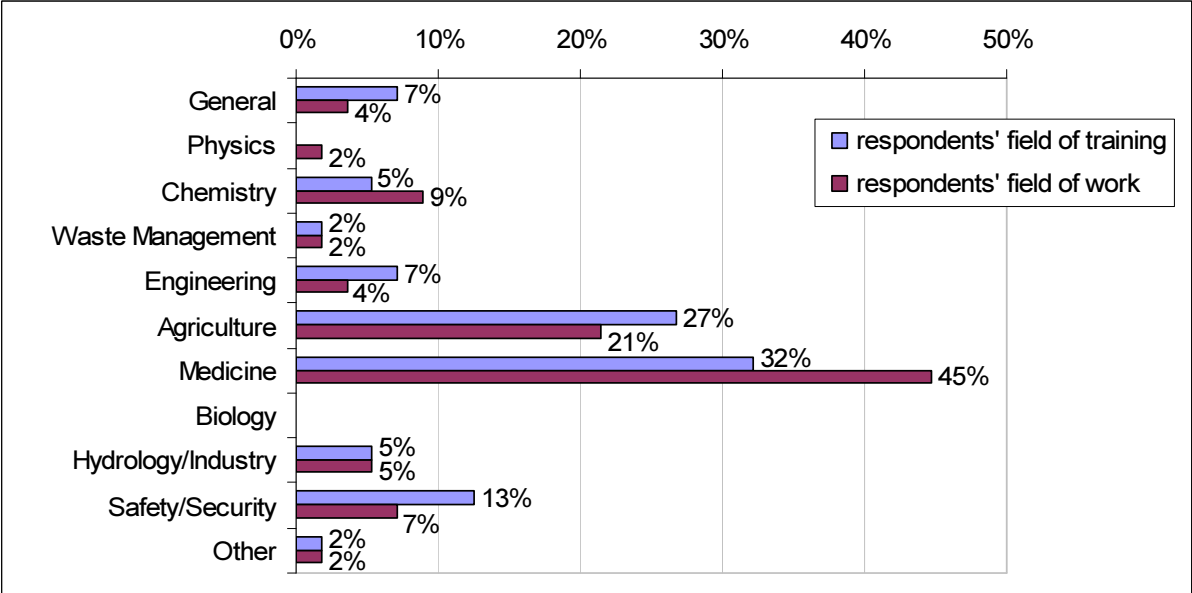


Figure 2: Distribution of responding fellows by field of training and field of work.

Seventy-five percent of the fellows participating in this in-depth study are now working in the same field in which they did their training. This corresponds to the ratio in the original survey, namely 79%.

In both surveys, the vast majority of responding fellows (95%) work either in government ministries/agencies or in universities/research institutions, i.e. in the public sector. Whereas in the first survey, roughly half of the respondents each worked in universities/research institutions

and in government ministries/agencies, in this in-depth study more respondents work in government ministries/agencies, as shown in Figure 3. This might be explained by the fact that in this in-depth study, communication often took place via official channels (i.e. NLOs), in other words former fellows working in government institutions/agencies might have been encouraged more strongly to participate in the survey than those working in other organizations.

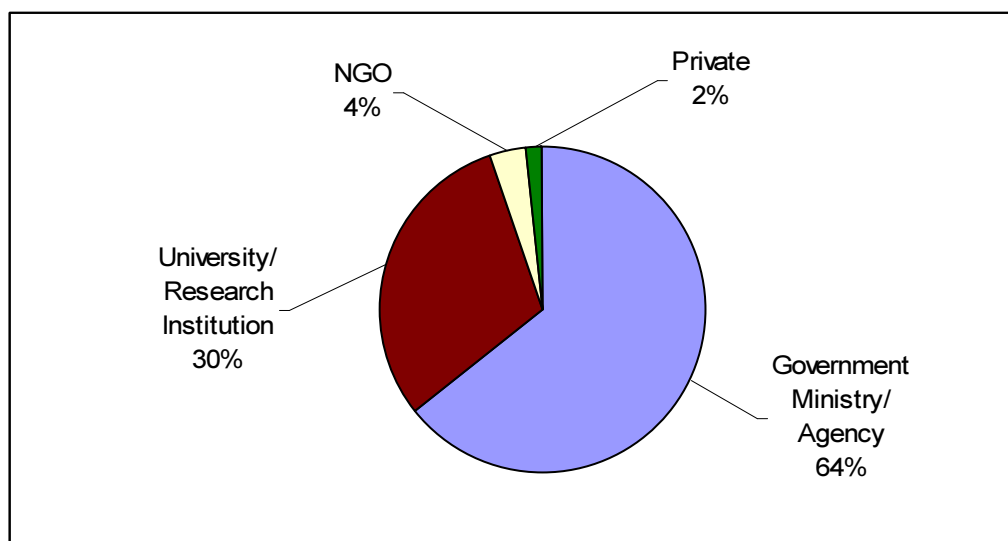


Figure 3: Distribution of responding fellows by type of employer.

Impact of the fellowship programme

Of the 56 responding fellows in the in-depth study, 50 returned to their home institution after their training, and 55 returned to their home country². These figures are proportionally very close to those of the original survey, which were 94% and 97%, respectively. Those who did not return to their home institution gave the following reasons for the change of employer, with the occurrence listed in parentheses:

- The current job offers better career prospects than the previous job. (2)
- The current job is more challenging. (2)
- The current job is better suited to the fellow's improved knowledge and skills. (1)
- The fellow is currently working towards an advanced degree. (1)

These were the same reasons named by respondents in the original survey, and they were mentioned with similar occurrence.

Considering the fact that in none of the countries sampled here could all of the missing fellows be found, it can be assumed that the percentage of fellows returning to their home country in the overall population of fellows from the years 2001 and 2002 is significantly lower than what is reported above. The likelihood of regional or international mobility or brain-drain should indeed be much higher among the fellows who could not be traced in the course of this study than among those who were found and who responded to the survey.

Ninety percent of the respondents of this study share their knowledge with colleagues in their home institutions through individual consultations, presentations, on-the-job training, and workshops. In the first survey, slightly more fellows shared their knowledge (96%). In addition,

² The one responding fellow who did not return to his home country came from Latin America and is currently living in the United States.

the means of sharing their knowledge are listed in the same order of frequency in the original survey and in the in-depth study.

The following paragraphs compare the results of the two surveys regarding the impact of the fellowship on the fellows' career and their home institutions. Eighty-four percent of the respondents to the in-depth study (88% in the first survey) thought they gained ideas and knowledge that are useful or very useful for their job. In both surveys, 2% thought of them as not useful. Useful contacts were developed during the fellowship by 69% of the respondents (70% in the first survey). Fifty-eight percent (60%) are still in contact with their host institution or their fellowship supervisor regularly, 16% (24%) are in touch occasionally, and 24% (9%) rarely or not at all.

Eighty-four percent of the respondents (87% in the first survey) feel a substantial increase in their confidence in performing their work after having been trained as a fellow; in the first survey, 1% did not feel more confident at all. This was not the case for any of the respondents to the in-depth study. The improvement of their language skills was an important benefit of the fellowship programme for 52% of the respondents to the in-depth study (63% in the first survey). This discrepancy might be due to the fact that comparatively more fellows from Latin America participated in this in-depth study, who did their fellowship training in other Latin American countries, and hence, used their mother tongue during their training.

Just below 70% of the respondents feel their enhanced skills were recognized in their organization, while 5% feel they were not. Both these numbers exactly match the results from the first survey. The recognition of enhanced skills in the organization manifested itself in a higher progression in the same job for 27% of the respondents in the in-depth study (50% in the first survey³), higher mobility across jobs for 31% (37%), and higher income for 12% (14%). Twenty percent (15%) of the respondents did not progress in their job after the fellowship training, 19% (17%) felt they were no more mobile across jobs than before, and 39% (37%) did not experience an increase in their income after the fellowship programme. Overall, these results from the in-depth study replicate those from the first survey in this aspect.

In the following paragraph, the results from the two surveys regarding the impact of the fellowship programme on the TC project and the fellows' home country are summarized and compared. Seventy-eight percent of the respondents to the in-depth study feel their enhanced skills are relevant or very relevant to the needs of the TC project under which their fellowship was funded (compared with 81% of the respondents do the first survey). Only 5% felt the skills they acquired during the fellowship were not relevant to the TC project (1% in the first survey). Their enhanced skills are considered highly relevant to their home country's needs by 84% of the respondents (86% in the first survey).

Of the respondents to the in-depth study, 80% have been involved in other IAEA activities besides the fellowship programme, either in TC activities or in Regular Budget activities, compared with 71% in the first survey. This is an indication that the same people from Member States tend to be invited to participate in IAEA activities several times, rather than trying to invite different people for different activities. On the other hand, it shows that respondents take part in IAEA programmes in different roles, i.e. participants may be supported in their career development, as in being sponsored first as a fellow and then as a project counterpart or a TC expert.

Figure 4 identifies how the respondents participated in other IAEA activities. Overall, this graph reproduces the results from the first survey. Respondents to the in-depth study have been on other fellowships and have participated in meetings/workshops more frequently than those to the in-depth study, and they have acted as a TC expert less frequently.

³ This is the only result that is significantly different from the first survey. This difference may be due to the fact that relatively more respondents to this in-depth study are working in government ministries/agencies (see page 5), where career progression may be generally more slow than in universities or in the private sector.

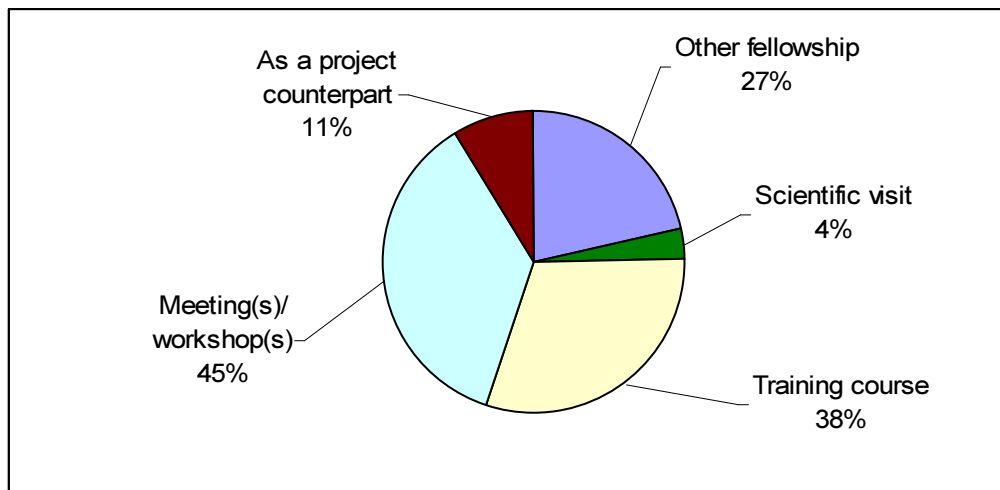


Figure 4: Distribution of responding fellows by participation in other IAEA activities.

Approximately a third of the respondents to the first survey participated in other TC activities both before and after the fellowship, and a third each attended the fellowship before and after participating in other TC activities. This has not been the case for the respondents to the in-depth study: one third attended the fellowship before participating in other TC activities, and two thirds attended after other TC activities. The general trend of the fellowship being one in a sequence of several IAEA involvements, however, is manifest in both the first survey and the in-depth study. As in the first survey, a number of respondents took part in activities organized outside of the TC programme, e.g. conferences and workshops.

Quality of the fellowship programme

In this section, the study results regarding the quality of the IAEA fellowship programme – in terms of the training content as well as the programme administration – are summarized and compared with those from the first survey.

Eighty-two percent of the respondents to the in-depth study considered the host institution chosen for their training suitable or very suitable (compared with 85% in the first survey). No one considered it not suitable at all (compared with 3% in the first survey). The training programme undertaken was thought suitable or very suitable by 86%, while no one thought it not suitable at all (compared with 85% and 3% in the first survey, respectively). The quality of the guidance received was felt to be good or very good by 80%, while 2% felt it to be not good at all (compared with 81% and 3% in the first survey, respectively). The quality and adequacy of the facilities made available were considered good or very good by 80% of the respondents; no one thought them not good or adequate at all (compared with 82% and 3% in the first survey, respectively). Several fellows explicitly commented on the suitability and good quality of the host institution.

Seven percent of the respondents to the in-depth study had negative experiences after the completion of the fellowship programme, compared with 6% in the first survey. They listed the lack of opportunity to apply their new skills and a change in their area of work as the main negative experiences.

The living arrangements were considered very good by 78% of the respondents, adequate by 18% and lacking by 4% (compared with 73%, 21% and 5% in the first survey, respectively). Assistance received from the IAEA was ranked as good or very good by 94%, while no respondent thought it lacking (86% and 2% in the first survey, respectively). Assistance received from host authorities was rated as very good by 85% of the responding fellows, as adequate by 15% and as lacking by no one (compared with 78%, 14% and 3% in the first survey, respectively). The assistance received from home was thought of as very good by 84% of the

respondents, 13% thought it adequate, while 4% thought it lacking (compared with 70%, 18% and 7% in the first survey, respectively).

These results regarding the quality of both the content and the administration of the fellowship programme thus correspond to the results from the first survey.

Study participants were asked to list three aspects of their fellowship experience that they found most valuable. Fifty-one percent of the respondents listed the improvement of their skills and knowledge one of the most valuable aspects. Twenty-one percent considered getting to know new technologies, techniques and methods most valuable. The development of new contacts and the exchange of information and experience with other experts in their field were thought most valuable by 16% and 14%, respectively. Sixteen percent of the respondents mentioned the improvement of their language skills as one of the most valuable aspects. For 16% of the respondents, the working atmosphere and hospitality at the host institution were most valuable, and for 14% it was the interaction with people from other cultures and living abroad. Gaining more and new experience were considered most valuable by 10% of the responding fellows. For 10%, the opportunity of working in such a good host institution was most valuable, and for 10% it was their professional development and growth. Six percent and four percent, respectively, thought the increased confidence in performing their work and the opportunity to take part in a good training programme most valuable.

These results reflect the results from the first survey. There, the same categories were mentioned most frequently and by approximately the same percentage of respondents.

Suggestions for Improving the Fellowship Programme

Suggestions regarding the content of the fellowship programme

The fellows participating in the in-depth study made the following suggestions concerning the host institutions:

- Host institutions should be top rank (meaning they should be of a high calibre).
- They must have adequate and available equipment and staff for the training.

Regarding the guidance or supervising during the training, the following suggestions were made:

- The training programme should be agreed upon between the fellow and the supervisor in advance.
- The supervisor should have sufficient time for the fellow. Guidance could be expanded by providing more than one supervisor.
- The supervisor must be sufficiently qualified.
- An expert in the related TC programme should give guidance.
- The supervisor and staff should be able to communicate with the fellow in a common language.

With regard to follow-up after completion of the fellowship programme, respondents made the following suggestions:

- Follow-up should be regular and frequent.
- Refresher courses and follow-up training would be useful.
- The impact of the training programme should be evaluated, e.g. by doing surveys like this one more often.

- Databases about training should be made available.
- IAEA should support the development of knowledge networks.

Suggestions regarding the administration of the fellowship programme

- In preparation for the fellowship training, IAEA should provide guidance on visa requirements for the host country.
- IAEA should improve the recognition of IAEA training programmes by home countries.
- IAEA should support studies towards higher degrees (M.Sc. or Ph.D.).
- Host institutions and training programmes should be evaluated regularly.

As in the first survey, a few respondents also commented that the fellowship period was too short and the stipend was too low. Overall, the comments are very similar to the ones received in the first survey, and they were made with similar frequency.

Summary

In summary, the results of this in-depth study of fellows from only a selected number of countries correlate with the results from the first survey. Slight differences may arise from the fact that the number of respondents in the in-depth study was much smaller (56 compared with 613 in the first survey), and that only a small number of countries are represented. As discussed in the introduction to this report, both the original survey and the in-depth study were based on a biased sample of the fellows from the years 2001 and 2002, namely those fellows whose contact information could be found. The fact that the samples were biased is more relevant to some of the questions in the survey than it is to others. It is particularly pertinent to the issue of fellows returning to their home country, where the results received from the biased sample are not representative of the whole population of fellows from the years 2001 and 2002 (see page 5). Regarding the remaining questions, the fact that the results obtained with the two surveys correlate gives us some confidence to believe that they are representative of the entire base population. Hence the results from the first survey (with the exception of the issue of fellows returning to their home country) are indeed validated through this in-depth study.