WOMEN AND SCIENCE: Review of the situation in Hungary

1. A review of the situation of women in scientific careers and of the social and institutional environment affecting their work

1.1. Principal characteristics of the composition of the population

On January 1, 2000 Hungary’s population was 10 043 200 and women accounted for 52%. The continuing tendency of decrease is accompanied by ageing of the Hungarian population. About half of the excess of 0.5 million of female population is in the 65-79 age group, so the dominance of women is especially marked in an elderly age. The problem is well described by the fact that life expectancy at birth is 9 years longer for women than for men (in 1999, men’s life expectancy at birth was 66 years and women’s 75 years).

Women represent 45% of the 3.8 million active population. The structure of employment by industry reflects the particular features of genders in the world of labour. While the two genders are represented almost equally in the processing industry, trade and public administration, in the fields of health and education women’s number is more than three times bigger than male employment. The latter two sectors engage 25% of women in employment.

Hungary experienced a serious economic crisis in the early 1990s: number of employed population plummeted by one third and unemployment – a phenomenon completely unknown before – became rampant (in the first phase mainly men employed in the heavy industry and other crisis industries lost their jobs and in the second phase the jobs of the so-called white collar women came at risk). After 1995, number of employed population began to rise again and 60% of the growth affected women. The most jobs for men were created in business services and catering, these industries were followed in order by the building industry, trade and the processing industry. Female employment saw the most dynamic rise in the processing industry, in business services and in public administration. Women’s unemployment rate was always more favourable than men’s and this tendency continues into today (in 1999, men’s unemployment rate was 7.5% and women’s 6.3%), while their corresponding economic activity rates were 67.6% and 45.4%). The socio-economic changes that took place in the country after 1990, and the concomitant transformation of the employment structure, boosted demand for qualified labour (the process naturally affected women also). The change of the composition of employment in this direction was enabled by the fact that the level of education continued to rise across the entire population.

In fact, women’s traditional education gap had been continuously decreasing from the 1960s and by the 1980s, women’s situation was actually more favourable than men’s in certain respects was. This tendency continued into the 1990s, as well. Women increased their edge over men in the respect of secondary school education. The graduate ratio continued to rise both among women and men, with men retaining a slight edge in the respect of the overall population. (In 1996, 13.7% of men and 10.7% of women held a degree in higher education.) However, in the younger – 25-39 year-old – generation instrumental from the point of view of employment, women took an edge over men (12.5% of men and 16.4% of women hold a degree in higher education.)
1.2. Women’s situation in higher education

In the 1990s, fast and significant changes took place in higher education, the most important element being the remarkable growth of the number of students (between 1989 and 1998, the students in full time education increased 2.5 times and the growth was even larger in part time education.) Before 1990, at 10% participation in higher education was extremely low by European standard. It was the social and political change that started the long-due expansion. In this process women managed to retain their relatively favourable position, their ratio among overall students even increased (in 1990, 48.8% of full time students were women and by 1998, 53.2%).

Women’s participation in higher education varies widely by field of study. The segregation by gender follows in general the tendencies of the advanced countries. (Women’s participation is high – over 70% - in kindergarten attendant’s, teacher’s and paramedic’s training, is medium-level – 30-70% - in agrarian, medical, veterinary, pharmacist, natural sciences, economics, business, law, public administration and art training and low – under 30% - in technical areas.) It is a particular Hungarian – or rather more generally Central and East European – characteristic that women’s representation has been steadily high in the recent decades in the economics-business and legal-public administration areas of training, since these programs used to prepare students for careers that did not enjoy much prestige in the planned economy (state socialism) based on directives. After the change of regime in 1990, women claimed more ground in the technical, agrarian and veterinary faculties. Exactly those areas that the transition to market economy relegated to lower priority. Women also slightly increased their presence in the economics, business, legal and public administration training programmes that prepare them for lucrative jobs in the market economy.

Hungarian higher education institutions grant degrees that correspond to the bachelor’s degree and to the master’s degree. Women are over-represented in practically all lower-degree – bachelor – programmes and stand less chance than men to achieve a master’s degree.

The Hungarian higher education system was developed according the pattern of continental Europe in which universities are the scene of higher education and research, and scientific (doctor’s) degrees too are awarded by universities. After 1949 this system of institutions was fundamentally remodelled on the Soviet mould. Research was removed from the universities and placed with separate research institutions. Universities retained education as their principal function and they also lost the privilege of granting scientific (doctor’s) degrees. In 1993, the new higher education legislation restored the autonomy of the universities and along with the restoration of their autonomy, they also got back one of the symbolic elements of their independence, the right to award scientific degrees. At that time that the universities began to develop and launch their PhD programmes, bearing in mind the norms of the European Union (and the advanced countries in general). So this form of training looks back on a relatively short past. Women’s involvement in the programmes of key importance from the point of view of scientific replacement was outstanding (one third) already in the first years, and their proportion has been growing ever since (in 1998, it was 40%). Women’s representation exceeds the average in arts, sociology, agrarian and medical programmes (42-46%) but is remarkably low (13%) in technical sciences.

In 1990, one third of the higher education staff was women and their proportion grew slightly further (to 37.7%) by 1998. The growth is partly due to the fact that the relative income situation of higher education employees expressly deteriorated in that period. Larger higher
education volume entailed worsening infrastructure and loss of prestige of the profession that induced some of the male employees to leave higher education. The staff hierarchy rests on the well-known pyramid pattern. In 1998, 13.4% of the professors, 29.5% of the associate professors, 40.9% of the lecturers and 46.6% of the assistant lecturers were women. Compared to 1990, the proportion of women grew in almost every staff category and the growth was more marked in the higher levels. The worsening conditions induced male professors and associate professors in the first place, to leave. Another explanation for the phenomenon may be that the age groups with rather high graduate female representation reached the age of promotion to professor or assistant professor and so there was a bigger choice of qualified women.

1.3. Women in research careers

At present 23,000-24,000 people work in scientific research jobs in Hungary, and just over one third of them are women. (They work in various institutions, research places, higher education institutions, the research institutes of the Hungarian Academy of Sciences, in other public research institutions and the research divisions of private companies.) The number of researchers began to decrease after 1990, and in 10 years it dwindled by 25%, mainly as a consequence of a steady ebbing of finances. While the overall number of researchers decreased, the ratio of women grew. The low income of researchers, the insecurity of employment and the eroded prestige of the research career were very powerful contributing factors.

Women’s representation in the various sciences does not show much variation. In 1998, women accounted for 40% of all researchers in the medical and social science areas and for 24-27% in natural science, technology and agricultural areas. Since 1990, the ratio of women in medicine has grown powerfully and to a smaller degree also in agricultural sciences and technology.

1.4. Women holding a scientific degree

Between 1949 and 1993, the Hungarian system of scientific qualification held many particular elements that differed from continental Europe. When the university system was transformed (after 1949) as mentioned above, the Hungarian Academy of Sciences was given the right to award scientific degrees. Two degrees were awarded: the Candidate of Sciences (C.Sc.) title was essentially the equivalent of the PhD, while the Doctor of Sciences (D.Sc.) was a degree one notch higher. Obtaining a scientific degree was essential for advance in a research career and for the attainment of a higher university position. In 1993, the candidate’s degree awarded by the Hungarian Academy of Sciences was abolished and replaced by the PhD degree awarded by the universities. The Doctor of Sciences degree was also replaced by the new Doctor of Sciences of the Hungarian Academy of Sciences degree.

In 1999, one sixth of the scientists holding a Candidate of Sciences (C.Sc.) degree were women, while only fewer than 10% of women could boast a Doctor of Sciences degree. There is considerable variation in the respect of the various sciences, however. There are the most women Candidates of Sciences in social sciences, then follow the natural sciences, medicine and agrarian sciences, and technical sciences close the row far behind. The order of sciences
is more or less the same in the case of women Doctors of Sciences, but the variations for the different sciences are smaller as there is also a smaller absolute number of women affected.

The ultimate recognition of merits in a scientific career takes the form of membership at the Hungarian Academy of Sciences. As per the state of 1999, there are 310 members of the Academy in Hungary and only 10 of them are women (In 1949, there was a single women academician and this modest figure rose to 10 over the decades.)

1.5. Women’s participation in research funding committees and research projects

In the respect of basic research, the most important Hungarian research support organisation is the Hungarian Scientific Research Fund (OTKA) that was created in 1986. It has been operating as an autonomous institution since 1991. In 1993, Parliament approved the OTKA legislation that regulates the system of budget support for research purposes. In 1995, the General Assembly of the European Science Foundation accepted Hungary as a full member.

The aim of OTKA is to support basic research and the creation of its conditions. It supports the publication of new research findings and in general, the development of scientific knowledge and methods and the establishment of the research infrastructure. More specifically, it grants support for the following purposes: disciplinary research, researcher’s and post-doctorate scholarships, development of electronic databases, library acquisition, international co-operation and participation in conferences.

The executive body of the institution is the OTKA Committee, which consists of a chairman, two deputy chairmen and 15 members (composed of representatives of ministries, universities and other scientific institutions). The most important scientific bodies of OTKA are the three 25-30-member Main Scientific Boards (Social Sciences and Humanities, Natural Sciences and Engineering, Life Sciences). The applications are judged by the Scientific (Disciplinary) Review Panels. On the basis of the proposal of the Review Panels, the Main Scientific Boards take decision in the first instance, while final decision rests with the OTKA Committee.

In the period 1990-2000, 1200-3000 applications were received annually and 20-25% from women. In the case of the three Main Scientific Boards, the ratios were different: the Board of Social Sciences and Humanities received 26-38% of the applications from women, the Board of Natural Sciences and Engineering 13-18% and the Board of Life Sciences 20-26%. (There were further differences in the Review Panels in this respect).

The proportion of women is similar among those whose applications were approved (in the above order of Main Scientific Boards, 24-38%, 8-17% and 14-23%) so the acceptance rate of the applications is practically identical in the case of women and men applicants. These proportions remained rather stable all through the period studied.

The representation of women in the boards and panels that approve the applications is far more modest, ranging from 7 to 14%. There are 9-21% women among the members of the Board of Social Sciences and Humanities, 3-10% among the members of the Board of Natural Sciences and Engineering and 4-8% among the members of the Board of Life Sciences. Women’s presence at 11-19% is slightly larger in the Review Panels. (The difference in the respect of the various sciences is present here too: 20-33%, 3-11% and 4-17% are the corresponding proportions, but women are not represented at all in some Review Panels). The
above ratios varied from year to year in the period studied but the dominant tendency was that in the judgement and decision bodies women were underrepresented in comparison to their proportion among the applicants.

Other important research support funds disposing over budget money are these (among others): Central Fund for Technical Development, Foundation for Advanced Research of Social Sciences and the National Cultural Fund. The distribution system of these funds in a breakdown by genders has not been processed yet.

1.6. Women’s participation in technical and natural science associations

A large number of scientific societies and associations operate in Hungary with different traditions and backgrounds for professional and interest representation activities. From the point of view of our topic, the most important organisation is the Federation of Technical and Scientific Associations (MTESZ). Founded in 1948, the Federation currently has 40 member associations that rally almost 100 000 members – engineers, natural scientists, lawyers and entrepreneurs. MTESZ receives regular budget support but also has its own revenues. Its principal task is interest representation in a broader sense. More specifically, this means the following: it creates opportunities for making public new research findings, organises conferences, promotes scientific publication (almost 100 professional periodicals) and international relations (organises study trips) and carries out research administration tasks. Its most important right is to compile the National List of Experts which list can serve as decisive reference in the case of research applications and other appointments. The MTESZ regularly awards prizes created by itself (some 200 different awards and decorations). These awards enjoy high social and professional prestige.

In the period 1985-1995, 12-17% of MTESZ members were women. The proportions vary widely for the different member associations, in compliance with the particular features of the professions in question. (For example, there is a strong 46% representation of women in the Hungarian Chemical Society, an equally strong 45% in the Hungarian Biochemical Society, 37% in the Hungarian Electrotechnical Association, 32% in the Hungarian Biophysical Society, 42% in the Meteorological Society, 59% in the Hungarian Society of Textile Technology and Science, 38% in the Hungarian Scientific Society for Food Industry, 31% in the Scientific Society for Telecommunication and 31% in the Scientific Society for Management. In most member associations, representation is as low as 3-6%). It can be established that women are under-represented in these important professional organisations in comparison to the ratio of graduate women active in the corresponding professions.

2. Characteristics of the databases and the indicator system

The Hungarian statistical system is of traditionally high standard, its data collection and reporting systems answer the standards of the UN Statistical Organisation and of EUROSTAT. In subject matter „Women and Science”, the following databases are available.

Data on the composition of the population and within that, on the level of education and training and employment relations are gathered in the framework of censuses and micro-censuses. In view of the fact, that the absolute number of research workers (and the proportion of women among them) is rather low, the publications based on these databases do not carry
detailed breakdown on this employee group. But primary information is, in principle accessible and may be processed. Periodical information publications are published regularly on the areas of research and development (on researchers and research places, as well as on R&D support). These publications do not break down information by gender even though there is, in principle, no obstacle to the publication of such information.

The Hungarian Central Statistical Office regularly takes specific samples relating to the income and financial situation, way of living and use of time of the Hungarian population. These data could be useful for learning the situation of researchers and women researchers, but the small absolute number of the population in question makes this difficult. But in principle, such type of analysis is possible depending on the specific issue and the size of the sample.

Under the auspices of the Ministry of Education, data on the students and lecturers of the higher education institutions are collected on an annual basis. Practically every relevant information is available in this database on the vertical and horizontal composition of the target population. At present, the annual publications do not break down information by gender in all relevant subjects but in principle, there is no obstacle to including such information in the publications also.

Information concerning applications for various research projects is available at the Research and Development Department of the Ministry of Education, but so far these data have not been processed in a breakdown by gender. In principle, there is no obstacle to their processing in that direction.

The database of the Hungarian Academy of Sciences is available for the processing of data in a breakdown by gender. As for the future, it would be desirable to continue processing data on the lines of this study on a regular basis and also to publish the results regularly.

The processing of the documents of the OTKA application and judgement processes according to the participation of the two genders has taken place in the framework of the present task of the Helsinki Group. It would be possible to put processing and publication of the results on a regular basis. A similar analysis of the other major research funds may take place in the future.

The documents of the scientific and professional associations hold a rich store of information for the study of women’s participation. The documents of MTESZ were the first to be processed in the framework of this report. This study could, in principle, continue and extend to other associations, too.

Several special studies were conducted with the involvement of researchers, and women researchers in particular, which approached the given subject, or a facet of it, from different angles and with different methods. These studies have produced a great deal of valuable findings, despite the fact that they were not based on comprehensive and regularly collected information. On another hand, sociological studies on professionals, education system, researches targeted at the social recruitment of students in higher education, at issues of employment and career can also offer clues to a better understanding of the situation of women researchers.
At present no separate data are available on the composition and employment relations of researchers in private research places. Large foreign-owned companies and joint enterprises may have research divisions of their own and these are staffed by domestic research employees. It is a relatively new phenomenon, only a few years’ old, and the relevant data will, in future, be processed and published separately.

3. Activity of the Women and Science National Steering Committee

3.1. Formation of the Hungarian Steering Committee

The activity on the subject of Women and Science began after the first meeting of the Helsinki Group (November 29-30, 1999) and on the basis of its recommendations. At government level the Office for Women’s Issues of the Ministry of Social and Family Affairs is responsible for issues pertaining to equal chances for women. The Office for Women’s Issues is also responsible for controlling the activities of the Helsinki Group. By way of a first step, it set up the National Steering Committee. The members of the Steering Committee are representatives of institutions that play an instrumental role in the collection of relevant statistical data, in designing and producing publications, distributing research support, organising research at national level and into specific problems. The members of the National Steering Committee and the organisations represented by them are these:

- Zsuzsa Gilyén (OTKA)
- Dr. Ágnes Haraszthy (Institute for Research Organisation of the Hungarian Academy of Sciences)
- Dr. Ildikó Hrubos (Budapest University of Economic Sciences and Public Administration), member of the Helsinki Group
- Erzsébet Móla (Ministry of Education, Research Development Division)
- Dr. Gábor Náray-Szabó (Ministry of Education, Department for Scientific Affairs)
- Dr. Judit Szemkeo (Ministry of Social and Family Affairs), chair of the Committee
- Erzsébet Szita (Ministry of Social and Family Affairs, Office for Women’s Issues), acting chair of the Committee,
- Dr. Éva Vámos (National Technical Museum, MTESZ)
- Erzsébet Varga (Hungarian Central Statistical Office)

3.2. Work, events in the context of Women and Science

- Six members of the National Steering Committee attended the scientific conference in Brussels (April 3-4, 2000) and dr. Éva Vámos gave a lecture in the section “Science by women: universality or specificity”. Before the conference, the delegation of the National Steering Committee held discussions on the preparations. At the meeting after the conference, the National Steering Committee discussed the concrete tasks of preparing the country report and agreed on the division of labour in the collection of information. On May 15, the members discussed and finalised the country report and the statistical tables prepared for the second meeting of the Helsinki Group (June 22-23, 2000). After the second meeting of the Helsinki Group the members of the Steering Committee were briefed on the events of the conference and on future tasks. The September 12 meeting prepared the expanded country report and the November 8 meeting discussed the material and finalised it.
- The Office for Women’s Issues and the Budapest University of Technology and Economics (Department of Sociology and Communication) with the involvement of members of the National Steering Committee held a conference on November 13, 2000 on the “Chances of Women and Men in Scientific Careers”. One of the agenda items was the presentation of the book “Fate of women in the 20th century”. The book discussed the lives of outstanding women of the recent past, including artists, scientists and politicians. The second agenda was a round-table discussion of the situation of women working in scientific jobs. As a key-note, the Steering Committee gave a report on the work of the European Commission “Women and Science” section and of the Helsinki Group, as well as the situation revealed by the Hungarian country report. The conference was attended by representatives of women’s organisations and the scientific life, so it very much helped this subject make a powerful impression on the public mind and also make the public aware of the relevant efforts of the European Commission.

- The journal Magyar Tudomány (Hungarian Science) accepted to publish the article completed by Ágnes Haraszthy and Ildikó Hrubos entitled “Women and science – in a European dimension”. The authors describe the situation of women in scientific careers, on women researchers and their status, on the participation of women in various categories of scientific qualification and carry the most important findings of the ETAN report and the efforts of the European Commission to ensure equal chances for women.

- The Office for Women’s Issues initiated the publication of a statistical pocket book called “Men and women in Hungary”, which will first appear in 2001 and subsequently – at least according to the plans – every other year, with updated figures. The pocket book is meant to be a reference handbook embracing a wide range of topics (including the demographic and health situation of the population, the employment and income situation, education, supply of the population with material goods, way of living and the use of time). This publication will also carry statistical data on the students and teachers in higher education and the holders of scientific qualifications, in a breakdown by gender.

- Some members of the Hungarian Steering Committee submitted applications to the OTKA and the National Research and Development Fund for grants to research problem connected with “Women and Science”. If the applications are approved, the researchers intend to study the following problems: collect, process and analyse the most comprehensive statistical information possible on women working in research and development areas, process, in great detail, information on higher education students and lecturers, make a survey into the professional and social situation of women with a scientific degree, monitor the professional progress of young women starting their career in the research institutes of the Hungarian Academy of Sciences, place the Hungarian situation in a European context – make international comparison (by using the database to be created through the work of the Helsinki Group).

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