

BRAIN-DRAIN PROBLEM IN TURKEY

Fatma BAŞARAN

Nowadays, more than half of the world's population is defined as underdeveloped, or to use the euphemism, developing peoples. These peoples, while assigning different degrees of importance and priority to development, are all trying and wishing to be developed. In our world, societies are progressively changing from closed societies to societies which interact with one another. In a world where nations need each other, development is the only solution for forming a healthy, balanced and humanitarian whole. It can be said that this idea is a common value for both developing and developed nations. For this reason, international organizations such as UNESCO, EWA, OECD and WHO have been involved in projects related to the subject of development. Development is a process which includes economic and social (education included) modernization. Economic modernization necessitates advanced technology, specialized knowledge and progressive organization and administration. Social modernization, on the other hand, calls for a status system which gives weight to the value of the individual rather than to the conventional status system. In such a system, institutions which are not congruent with the value given to the individual have to change. In order to bring about such a development, qualified manpower, specialized in different fields, is of utmost importance. For this reason, Harbison calls this high quality manpower strategic human resource.¹

In this state of affairs, highly qualified work power is moving from developing to developed countries. It is obvious that this happening called brain-drain-*exodes des compétences*-is a subject of special importance for developing countries. In this way, qualified human resources necessary for development are lost and investments made on the emigrating individuals are wasted as

¹ Harbison, Frederick and Myers, C.A., *Education, Manpower, and Economic Growth: Strategies of Human Resource Development*. New York, 1964.

far as the developing country is concerned. These investments benefit the receiving countries. For this reason, interest in the issue has increased since 1960 and economists, scientists, politicians and the press have been concerned with different aspects of the problem.²

European countries have also expressed concern about the emigration tendency of highly qualified personnel to the United States of America in particular and have tried to understand the causes and take precautionary measures.³

Recently, scholars concerned with the issue regard Turkey as a developing country and as a country affected by brain-drain.⁴ For that reason, the investigation of the subject from the point of view of our country would be beneficial.⁵

2 Didijer, Stevan, and Svenningson, L. *Brain Drain and Brain gain: A Bibliography on Migration of Scientists, Engineers, Doctors and Students*, Sweden, 1967; see also; The Committee on the International Migration of Talent, *The International Migration of High-level Manpower, Its impact on the development process*, EWA, New York-Washington-London, 1970.

3 Délégation Generale à la Recherche Scientifique, "L'emigration des Scientifiques et des ingenieurs les Etats-Unis", *Le progrès Scientifique*, February 1966, No. 93, 38-53; U. K. Committee on Manpower Resources for Science and Technology, *The Brain Drain: Report of the working group on Migration*, London, 1967; UNESCO, Document 17 e/58 Decision 1. 332, 1972 17. Session, Paris.

4 Didijer, Stevan "Migration of Scientists: A World-Wide Phenomenon and Problem", *Nature*, March 7, 1964; U. S. House of Representatives, Committee on Government Operations, *The Brain Drain into the United States of Scientists, Engineers and Physicians*, Washington D. C., 1967; National Science Foundation, *Scientists, Engineers and Physicians From Abroad*. Fiscal years 1966 and 1967, Washington D. C., 1969 p. 12; OECD, *Reviews of BNational Science policy' United States*, Paris, 1968; *The International Migration of High-Level Manpower*, The Committee on the International Migration of Talent, New York-Washington-London, 1970. p. 336.

5 According to Üner, H. Investment costs per person for scinetists, engineers and doctors accepted as emigrants to U.S.A. in 1967 is \$ 90.000. This study has estimated the national loss due to emigrating personnel to U.S.A. to be \$ 18.270.000 for the year 1967. Hasan Üner includes the loss of possible and actual earnings during the years of training and working as well as tuition, room and board expenses in his estimates of the amount of investment per person. Üner, Hasan. *The Economic Impact of the Outflow of High-Manpower from Turkey to the United States*. (Unpublished Mastar's Thesis). *The George Washington University* 1968.

Estimates calulated by kidd are obtained according to the living standards of Latin American countries take only room, board and tuition expenses into account. By this method investment value is estimated to be \$20.000 per person.(see. U S House of Representatives, Committee on Government Operations; *The Brain Drain into the United States of Scientists, Engineers and Physicians*, Washington D.C., 1967, (Referred by Oğuzkan, Turhan *Yurt Dışında Çalışan Doktorlar Türkler*. Ankara 1971. p. 8.).

This article is based on a research on the subject conducted on doctors, engineers and scientists. After considering the studies, recommendations will be made in the light of these studies. However, we would like to point out that our interpretations and conclusions are limited since the quality and quantity of the studies and statistical data on the topic of brain-drain are not satisfactory.

I. The findings of the study on Medical Doctors:

As reported in a joint study by "Ankara Hifzısıhha School" and "John Hopkins School of Public Health", out of a sample of 1257 Turkish Doctors, 230 (or 18.3 %) are working in foreign countries. By generalizing the sample, it could be estimated that out of a total population of 12,275 doctors in Turkey, 2248 live abroad. Of the sample of 230 doctors 197 (85.4 %) are male and 33 (14.6 %) are female.⁶ Their distribution in foreign countries are as follows in the given sample:⁷

Countries	male	female	Total	%
West Germany	74	12	86	37.4
U.S.A.	53	9	62	27.-
Canada	13	3	16	7.-
Other Countries	14	4	18	7.8
Residence Unknown	43	5	48	20.8

The reasons for emigration in the given sample are:

Insufficiency of income	68 %
The difficulty of professional promotion	12 %
The difficulties faced in fulfilling the role of a doctor and the lack of good relations between colleagues	6 %
The desire to live comfortably	6 %
Inadequacies in the organization of health services	6 %

⁶ Dirican, Rahmi-Carl E. Taylor-Kurt W. Deushle, *Health Manpower planning in Turkey an International Research Case Study*, Baltimore, Maryland; 1968, p. 46.

⁷ Ibid., p. 61.

24.8 % of the sample had previously been to foreign countries and 48.2 % of these expressed the desire to go abroad again. 75.2 % of the sample had never been abroad.⁸

According to this study, 20 % of the general practitioners and 22.1 % of the specialists were planning to leave for foreign countries in 1964. U.S.A. and West Germany occupied the first and second ranks among the countries these doctors were planning to go.⁹

Average age for migrating doctors was 41.5 for men and 36.5 for women. During recent years the ratio of migrating women doctors has increased.¹⁰

The majority of the doctors planning to leave the country had incomes lower than \$ 200. per month.¹¹

II. The Findings of the Study on Engineers:

On the basis of a study report prepared by Cevdet Kösemen, M. S. Engineer, the situation pertaining to engineers is as follows: In 1968 there were 975 Turkish Engineers and architects working in foreign countries. This figure represents 5.6 % of all engineers and architects registered in Turkish Professional Societies (17.233). The figure excludes all those who emigrated without informing their societies or who graduated in foreign countries and stayed there. Although it is difficult to make an accurate estimation on those abroad, the true figure certainly exceeds the given figures above.

According to the report of "Kösemen" the number of the engineers working abroad and the ratio of those who got their diplomas there is as follows:

Engineers	Number of engineers who went abroad	Engineers who have Foreign Diplomas
Civil Engineers	187	3.6 %
metallurgical engineers	11	0.9 %
Chemical Engineers	43	2.5 %
Electrical Engineers	231	9.8 %
Mechanical Engineers	176	5.- %
Architects	327	10.6 %

8 Ibid., p. 61.

9 Ibid., p. 39.

10 Ibid., p. 47.

11 Ibid., p. 40.

Among these the ones who own foreign diplomas are 32 % and of this the greater ratio belongs to the architects (10 %). As 2.444 out of a total of 17.233 have diplomas from other countries. The ratio is 14.2 %. The figures show us that those who migrated most are architects and electrical engineers and those who migrated least are metallurgical engineers. Although the ratio of migration is calculated as 5.6 %, it is estimated that it exceeds 10 %.¹²

In the Middle East Technical University where the Language of instruction is English, it was observed that at the end of the 1967 school year, 12 % of the four engineering departments and the department of architecture had migrated to foreign countries. This ratio is very low in the General Directorate of Highway Department and Public Networks.¹³

The distribution of the migrating engineers in the world is similar to that of the doctors:

The country migrated	%
The Anglo-American countries	38
Germany, Switzerland	35
France	6
Other countries	17

Here again., U.S.A., England and West Germany occupy the first, second and third ranks.¹⁴

There is a relation between the countries that the engineers migrate to the countries from where they receive their educational degrees. In general the migration ratio among the ones educated in foreign countries is higher. For example: while the ratio of the ones who get their degree in Turkey is 3.9 %, the ratio of the ones in U.S.A. is 11.3 %, in England 11.3 % and in Switzerland 21.1 %.¹⁵

12 Kösemen Cevdet, "A Report presented to Education and World Affairs concerning Emigration of Engineers and Architects from Turkey to foreign countries for the project International Migration of Talent", July, 1968. (Copy of the report could not be obtained. The information below was obtained from *The International Migration of High-Level Manpower*, 1970, p. 310)

13 Ibid., pp.310-311. The current view is that during the recent years, the situation has changed to a great extent. For example, the number of applications for Liberia has exceeded the demand.

14 Ibid., p. 311

15 Ibid., p. 312

It can be easily estimated here that the language factor and the possibilities of getting a job plays a great role. On the basis of the "Kösemen" report we can summarize the reasons for the brain-drain as follows: a) the wages at home are low whereas the wages and proposals offered from abroad are more satisfactory. b) There are more possibilities of learning a foreign language which is necessary for their professional development. c) their desire to see different places. d). Their disapproval of the administration based on age hierarchical authority, and political pressure. e) various frustrations in working. f) Being married to a foreigner etc.¹⁶

Depending upon the information received from the U.S.A. Cultural Attaché it is stated that the ratio of remaining in the receiving country is very low among students who are sent abroad through official channels (1-2 %), while this ratio is higher with the others (5 %).¹⁷

In the report of Robert College where the language of instruction is English and where B.A., B.S, and M.A. degrees are given it is stated that among the graduates in the fields of Engineering, Public Administration and Economics who are going abroad, particularly to U.S.A., only a few stay there. For example:, between the years 1945-1949 of the 451 graduates 105 (23. 2 %) went abroad but only 9 of them (9.4 %) didn't return.¹⁸

III. Based on the Results of A Questionnaire Distributed Among Members of the Association of Engineers and Architects in 1972, the situation can be summarized in the following manner.¹⁹

The questionnaire was distributed to 29.700 Engineers and architects and was returned by 7120. The return ratio was 29.5 %. The sample included electrical, mapping, civil, chemical,

¹⁶ Ibid., pp. 356-357.

¹⁷ Ibid., 315.

¹⁸ Ibid., p. 317.

We would like to point out that the figures given here were taken from earlier sources and that the socio-economic conditions of engineers have changed since those figures were obtained.

¹⁹ The preliminary report on the results of the Questionnaire conducted by the Chambers of Architects and Engineers, among their 29700 members, Ankara, 1972.

metallurgical, meteorological, forestry and agricultural engineers and architects.

Together with other concerns, the questionnaire gives special weight to the migratory tendencies of technical personnel. According to the questionnaire results the situation is as follows:²⁰

The tendency to migrate abroad according to type of work

	Yes, I'll work in any field %	Yes, if there is work in my field of specialty %	Total %
(State) Public Sector	31.7	39.8	71.5
Private sector (employee)	12.5	46.2	58.7
Private sector (employer)	13.1	31.7	44.8
Outside the field of specialty	34.1	29.4	63.5

According to the table results, the tendency to migrate abroad is high. The ratio of this migratory tendency is 71.5 % in the state sector, 58.7 % in the private sector for employees, 44.8 % in the private sector for the employers. This ratio is 63.5 % in technical personnel who are working outside their fields of specialty. Although those with tendencies of going abroad stated that they would go if they get a job in their field of specialty, the ratio of those which stated that they would leave the country even if they did not get a job within their own profession cannot be neglected. Especially the ratio which is 31.7 % for the state sector and 34.1 % for those working outside their own profession is enough to draw attention.

It is found among engineers that there is an inverse relationship between their amount of pay and their tendency to leave the country.

The situation pertaining to this subject can be summarized from the table given in the research as follows.²¹

²⁰ Ibid., p. 9, table 7.

²¹ Ibid., p. 9, table 8.

Net monthly Income of State Sector TL.*	The tendency to migrate abroad %
1000 - 2000	84
2000 - 3000	63
3000 - 4000	42
4000 - over	30.2

Net yearly Income of the Private Sector TL.	The tendency to migrate abroad %
Under 25.000	75.6
Between 25.000 - 100.000	35.8
Over 100.000	15.4

*one dollar is equal about 15 T.L.

The figures above show very clearly that as the monthly and yearly income increases the tendency to go abroad decreases. For example the tendency to go abroad among those who receive a monthly income below 2000 Turkish Liras in the state sector exceeds 84 % whereas this percentage diminishes to 30.2% in the group where the monthly income exceeds 4000 Turkish Liras. In the private sector, too, those who are receiving a yearly income under 25.000 have a ratio 75.6 % tendency to go abroad while this ratio diminishes to 15.4 % among those who receive a net yearly income over 100.000 TL.

A study of the table show us that the economic factor plays a great part in the migratory tendencies of the technical personnel. In the report it is stated that the State Personnel Law 657²² and the import of technical personnel have effected the migratory tendency to a great extend. It is clear that there are negative attitudes to the import of technical personnel. The Local Engineers state that Local ones can be substituted in place of the foreign advisors and technicians who are paid large sums of

²² Personnel Law NO. 657, which was put into effect in 1970 and has abolished the discriminatory salaries for engineers. Thus engineers were treated in the same way other government employees. Regulations issued later did not solve the problem either. The Chamber of Engineers has take up the issue frequently and investigation of the problem has been proposed at the parliament.

money for the preparation and the realization of the projects made. On the basis of the information given in the Periodical of the Mechanical Engineers, the foreign technical personnel are paid a sum of 1.243.000.000 Turkish Liras (\$ 89.000.000) yearly while Local Technical Personnel are only paid 237.000.000 Turkish Liras (\$ 15.000.000) yearly, (Makina, Jan. 28, 1974)

Those who say "No" to the import of Technical Service ²³

In State Sector	92.2 %
In University Sector	85.6 %
In Private Sector (Employees)	79.7 %
In Private Sector (Employers)	87.2 %

It is pointed out in the report that according to the questionnaire results there is regional imbalance in the distribution of the technical personnel.²⁴ And it is very well known that regional imbalance is one of the important factors which prevents the development.

IV. Emigration of Scholars:

In 1968-1969 Dr. Turhan Oguzhan completed a survey on the Emigration of Scholars. The study was financed by TUBİTAK (Turkish Scientific and Technical Research Institute) and its realization was very much in favour of the desire of Turkish State Planning Organization. The study aims at discovering the personal and professional qualities of Turkish Scholars and professionals with doctoral degrees who emigrated to foreign countries on their own wish and decision and on the reasons, conditions and patterns of their emigration.²⁵

Out of the scholars who have emigrated to foreign countries 217 were included in the sample of this study. Of these 150 (or 69.7 %) answered the questionnaire.²⁶

According to the statistics an average of (111) doctorate degrees (excluding doctors of medicine) are given in Turkey annually,

²³ Ibid., p. 10 table 9.

²⁴ Ibid., p. 4.

²⁵ Oğuzkan Turhan, *Yurt Dışında Çalışan Doktorlar Türkler*, ODTÜ., Ankara, 1971.

²⁶ Ibid., p. 59.

therefore the 217 Turkish Ph. D's abroad at the time of the research represent the average man-power that Turkey can train in two years. If only the scientists and engineers with Ph. D's. are counted it would require 6.4 and 7 years respectively to train them.

Of the group of scholars under study 91.3 % were male and 8.7 % were female. The age range is between 28 and 63, the median age being 40.4. 92.7 % of the group were born in Turkey; 83.3 % are married.²⁷

28 % of the group under study engage in Liberal professions, Technical jobs and the like; 22.7 % hold administrative, executive or office jobs; 17.3 % own private enterprises, 17 % belongs to the Armed Forces; In short the emigrants came from a rather high socio-economic level.²⁸

Considering the fathers education, 44.7 % have had university or equivalent education, 24.7 % have had high school or equivalent education. This is well above the average level of education in Turkey. In general, the same is true for the mother's of these Ph. D's²⁹

The group under study knows three foreign languages on the average. On the other hand, 36.7 % of the group have graduated from junior high schools and 38.7 % from high schools that teach in a foreign language.³⁰

Of the members of the group, 39.3 % received their B.A. and 31.3 % their M. A in Turkey. 26. % received their B.A., 34. % their M.A. and 81.3 % their Ph. D. in a foreign country. And 12 % of the group have more than one B.A., M. A., or Ph. D.³¹

The majority of those who studies abroad financed their education personally or with family help-without any scholarship. This proportion is 51.3 % in pre-doctoral stage and 61.4 % in the doctoral stage.³²

27 Ibid., p. 62.

28 Ibid., p. 63.

29 Ibid., p. 64.

30 Ibid., p. 66.

31 Ibid., p. 68.

32 Ibid., p. 69.

The fields of specialization are in the following order: natural sciences 38 %, engineering 38.7 %, social sciences and psychology 13.3 % and finally agriculture, humanities and other fields. Accumulation is on physics, in natural sciences, on civil engineering, in engineering on economics, in social sciences.³³

On the basis of academic status, 25.3 % of the group are professors, 22 % are associate professors and 14.7 % are assistant professors. 14.7 % are lecturers, researcher and assistants etc., and, 23.3 % had no academic status, while 62 % of the group work in the university or the equivalent. Half of the sample group stated that they gave the most time to research work. The median income is 15,900 dollars. This is well over the average income in Turkey.³⁴

The reasons of the "Brain-Drain" in T. Oğuzkan's research are classified as repelling and attracting. If we simplify the table about this subject the attracting factors can be summarized as follows.³⁵

The attracting factors affecting the decision of emigration	In general	
	Number	%
Economic	46	10.2
Professional	245	54.4
Socio-cultural	51	11.3
Political	26	5.8
Personal and family matters	8	1.8
Other factors	3	0.7
Unknown	71	15.8
TOTAL	450	100

A study of the above table reveals that as attracting factors the professional ones play a great part (54.4 %).

These professional factors include "the possibility of finding a job in the field of specialization", "the availability of financial and other means necessary for work", "the opportunity for pro-

33 Ibid., p. 70.

34 Ibid., p. 76.

35 Ibid., p. 84. table 22.

fessional advancement", "the possibility of development to a higher level in the field of speciality", "closer contact with important scientific centers", "the value given to the man of science and specialization" and "availability of the general scientific atmosphere."³⁶

And the repelling factors in the study of T. Oğuzkan are classified as follows:³⁷

The repelling factors affecting the decision of emigration	In general	
	Number	%
Economic	48	10.7
Professional	207	46.-
Socio-cultural	40	8.9
Political	23	5.1
Personal and family matters	30	6.7
Other factors	3	0.7
Unknown	99	22.-

If we study the two tables above we find out that there is a parallel relationship between the repelling and attracting factors. This shows that the ratio between the repelling factors in the country left and the attracting factors in the country emigrated is very close.

The scholars under study were asked to give information about whether they wanted to return to Turkey and whether they were in need of following the scientific developments in Turkey and the result obtained was as follows:³⁸

Intention to return	The need to follow Scientific Developments in Turkey		TOTAL
	<i>those who need</i>	<i>Those who don't</i>	
Those who intend to return	47	4	51
Undecided	39	8	47
Those who don't intend to return	23	16	39
TOTAL	109	28	137

$$X^2 = 15.35$$

$$df = 2$$

$$P < .001$$

36 Ibid., p. 83.

37 Ibid., p. 86, table 23.

38 Ibid., p. 93, table 28.

A study of the above table shows that the number of those who intend to return to Turkey is not little. This is something to be pleased about. If the conditions change, some of the undecided may, also be added to this group because a big ratio of these have the need to follow scientific changes in Turkey. There is a significant relationship between the intention to return and the need to follow the scientific developments in the country. (P L. 100)

In professional connections with Turkey, our scholars working in foreign countries primarily propose communications through publications. Temporary appointments, scientific meetings, and various kinds of visits to Turkey take the second place in these proposals.³⁹

One very interesting aspect that the research brings forth is the P L. 001 degree significant relationship between the country where the post graduate degrees are received and the intention to return to Turkey in near future.⁴⁰

In other words, those who have received post graduate degrees in foreign countries generally don't show any intention to return to Turkey. This is a matter to which attention must be given by the Educating and Planning authorities and politicians.

According to the research, we can summarize the recommendations made by the Turkish scholars abroad on the precautions to be taken in order to make their work in Turkey more satisfactory as follows:⁴¹

In the table above creation and development of a scientific and research media (20.2 %), satisfactory professional income (14.4 %), precautions to be taken for the employment policy of scholars (12.9 %) are seen as recommendations which have the highest priority.

V. A Research Partially Related to the Problem of Brain-Drain

This research was conducted by associate Prof. Dr. Şefik Uysal under the sponsorship of Turkish Scientific and Techni-

39 Ibid., p. 94, table 29.

40 Ibid., p. 98, table 34.

41 Ibid., p. 102, table 37.

Precautions Recommended	The diffusion of these Precautions in general	
	Number	%*
Satisfactory Professional Income	65	74.4
Creation and development of a scientific and research media	91	20.2
Precautions to be taken for the Employment policy of scholars	58	12.9
Administrative and structural precautions of High Level Education	23	5.1
Giving importance to science and appreciation of scientific men	24	5.3
Precautions to be taken in the general Scientific Policy	9	2.-
Precautions to be taken in connection with the military obligations	14	3.1
Other Precautions	51	11.3
Unknown	115	25.6
TOTAL	450	100

(*) As the total of first, second and third degree important precautionary recommendations are taken here the number is tripled.

cal Research Institute (TUBİTAK), facts presented in the report are based on materials obtained from archives and from answers to mailed questionnaires. The population under study was made up of recipients of government scholarships between years 1929-1972. They were sent abroad in accordance with Law No. 1416. Those who have returned home as well as those still working toward a degree were included in the population of the study.⁴²

⁴² Uysal Şeflik, Yurt Dışında Yetişen İhtisas Gücü, Rapor, TÜBİTAK Bilim Adamı Yetiştirme grubu Proje NO: Bayg-E-22, Ankara, 1972. This study has not yet been published. I would like to express my deep appreciation to my colleague Doç. Dr. Şefik Uysal for letting me read the study. Law NO: 1416 has been issued in 1929. In Order to supply the specialized manpower demand of Turkey.

The Field of Study of those abroad are as follows.⁴³

Fields of specialty	Number	%
Arts and sciences	321	9.95
Health sciences	93	2.88
Technical and applied sciences	1906	59.09
Social sciences	687	21.29
Fine Arts	131	4.06
Unknown	94	2.73
TOTAL	3232	100

The countries to which the students have been sent are ranked as follows.⁴⁴

The country	The percentage %
U.S.A.	28.24
Germany	26.27
England	21.58
France	11.50
Switzerland	7.94
Austria	0.81
Italy	0.50
Canada	0.18
Others	2.48
	100

The Number and Ratio of those sent abroad for specialization according to sex.⁴⁵

Sex	Number	%
Female	184	5.51
Male	3043	94.33
Unknown	5	0.16
TOTAL	3232	100

43 Ibid., pp. 56-57.

44 Ibid., p. 61.

45 Ibid., p. 59.

Of the ones who went abroad by this law (8 %) didn't return home. The situations of about (11.65 %) are not known. (80.13 %) have returned home.

We can summarize the situation of those who returned and left the Institutions they were obliged to serve as follows.⁴⁶

34.95 %		have left
37.23 %		haven't left
27.37 %		situations unknown.

According to the research the students are in the expectation of getting a job suited to their specialization between (2000 - 3000) Turkish Liras on their return to Turkey.⁴⁷

The ratio of the specialized personnel leaving the institutions to which they have service obligations when classified according to their field of speciality are seen as follows:

	%
Health sciences	59.44
Social sciences	39.40
Arts and sciences	35.83
Technical and applied sciences	34.43
Fine Arts	20.00

The reasons for leaving the institutions can be listed as follows:⁴⁸

23 %		insufficient salary
47 %		lack of value given to specialization
30 %		working on projects which are not in the field of specialty and which do not lead to self improvement.

The students abroad who are still working toward a degree state the following opinions:

— 67.74 % say that they will not be able to lead a satisfactory life with the salary they expect to earn.

⁴⁶ Ibid., p. 71.

⁴⁷ Ibid., p. 175.

⁴⁸ Ibid., p. 161.

- 4.84 % say they will be able to live a satisfactory life.
- 27.42 % say that they may partially get a satisfactory life.⁴⁹

Of the students who returned the questionnaires:

- 40 % did not have a clear idea about the kind of employment they would get on their return.
- 35 % said they would get a job related to teaching.
- 10 % said they would get a job involving research.⁵⁰

If the students do not get themselves available jobs on their return:

- 52.42 % wish to get available jobs and transfer service.
- 31.45 % think of working in a different job in the institution to which they have service obligation.
- 11.29 % think of resigning and looking for an available job.⁵¹
- About 30 % of the students think there is a hope of finding a job.⁵²

The above results lead to the conclusion that an important percentage of the students are psychologically prepared to get employment abroad.

It is interesting to note that 34.31 % of the students who returned said that it would have been possible to get the same education in Turkey. Considering the benefit of the country this seems to be a matter worth paying attention to.⁵³

Conclusion and Proposals

Research done in Turkey and abroad points out to the fact that Turkey is influenced by Brain Drain and that she suffers negative consequences due to it. There is no time to be wasted when dealing with an issue of such vital importance.

49 Ibid., p. 167.

50 Ibid., p. 157.

51 Ibid., p. 168.

52 Ibid., p. 165.

53 Ibid., p. 146.

The fact that organizations such as OECD, UNESCO and WHO have provided opportunities for the investigation and discussion of the issue and have supported projects related to the foundation of research centers in developing nations is encouraging but insufficient for the solution of the problem. The degree to which such well-intentioned attempts can be effective in dealing with a problem which is becoming an issue of international competition is also thought-provoking. The decision taken at the 17 th General Meeting of UNESCO (Paris 1972) deplores actions encouraging Brain Drain and points out the fact that, in spite of precautions taken by member states, Brain Drain has increased and not decreased.⁵⁴

The view that the problem can be solved through international organizations does not seem to be very promising. Among proposals suggested are the changing of attitudes and actions practiced by developed nations that encourage Brain Drain, the education of domestic personnel in needed areas by developed countries, and restitutive payment of the education expenses of the qualified personnel to the country of origin. Under the present conditions, these proposals do not seem realistic and encouraging.

To summarize, the developing nations cannot effectively utilize human resources such as doctors, engineers, scientists and administrations necessary for their economic and social development, send them to developed nations and incur large monetary losses. Paradoxically, in effect, developing nations are helping the developed nations.

Developed nations such as England and Canada lose some qualified personnel by emigration to U.S.A. but make up for this loss by precautions and by emigration from other countries. In fact, Canada even profits by this inflow and outflow.⁵⁵

⁵⁴ UNESCO, Document 17 c/58 Decision NO: 1331 and 1332, 17. Session, Paris, 1972,

⁵⁵ U.S.A. Emigration Law passed in 1954 is of a nature which encourages this tendency. The Emigration Law which was enacted in England in 1962 brought about certain changes, providing for privileges and discriminations for highly qualified manpower, thus encouraging brain-drain into the country. (See Oğuzkan Turhan, *Yurt Dışında Çalışan Doktorlar Türkler O.D.T.Ü.*, Ankara, 1971, pp. 8-18).

Consequently, the idea that effective precautions should be taken by countries that lose by Brain Drain is the most realistic proposal and these precautions should be taken without any delay. However, the issue should be investigated with an open and scientific mind. Legal restrictions such as refusing passports to those working abroad violate the human rights and thus cannot be proposed.

The scientific investigation of the emigration problem, the determination of its precipitating factors and causes and the taking of precautions based on these investigations is a must for our country. Research and investigations done on the subject are limited. However, these studies together with other publications and observations provide some basis for making proposals on the subject.

Investigations conducted in Turkey up to the present point out to the necessity of

- a) providing satisfactory salaries and advancement opportunities,
- b) creation of convenient and free conditions for science, research and work,
- c) adoption of objective and rational employment policies.

All these conditions are related to making effective use of highly qualified personnel. The central issue is the use of ability in the right place and to a sufficient degree. If this end is not accomplished the development of the nation is affected in a negative way, and highly qualified personnel cannot find means for self satisfaction and self actualization. This would lead to the lowering of the aspiration of such qualified personnel. Such a person either will not be productive at home or will seek satisfaction abroad. In general he will find the conditions he is searching for in developed countries, and will go to such countries.

L. Thorston makes the following suggestions in relation to Turkey in "The International Migration of High-Level Manpower":

1. The development of attempts related to scientific investigations.
2. The adoption of reforms in the programs of the Universities and in the structure of Faculties.

3. The adjustment of salaries
4. Increasing of opportunities for international contact for highly qualified people.

It can be seen that this source also sees the problem of Brain Drain as closely related to the problem of development.⁵⁶

General center issues related to the solving of the Brain Drain problem have been discussed above. Now, we will suggest some specific and concrete proposals which should be acted upon without too much delay.

1. There are no systematic and regular records and statistics related to Brain Drain. Systematic information collection on this issue should be initiated.
2. Issues related to Brain Drain should be made the topic of scientific investigation as soon as possible. The activities of TÜBİTAK on this subject in collaboration with the State Planning Organization are worth praise but are not sufficient. Issues such as the extent to which human resources are employed in jobs related to their field of specialization, the regional (related to the development of the nation) structural imbalance related to human resources should be investigated.
3. The standards of universities should be raised so that there would be no need for sending students abroad for education at the undergraduate level. Opportunities for education abroad should be reserved for students at the doctorate and post-doctorate level.
4. Guidance into areas needing personnel should be provided for students being trained abroad.
5. Communication between authorities and people getting specialized training abroad should be established

⁵⁶ This study is the result of a two-year (1968-1970) collaboration of 15 scientists from countries such as U.S.A., England, France, Netherlands, The group was headed by prof. C. V. Kidd. This work is concerned with 1- East and South Asia, 2- South Asia, 3- Latin America, 4 The Middle East 5- Africa 6- Europe, 7- Australia. The section on Turkey was done by J. L. Thurstone.

and these people should be informed of job opportunities at home prior to their return to Turkey.

6. Some rights and opportunities should be offered to qualified persons in order to achieve the goal of regaining them. The effects of the encouraging precautions of counting the years spent abroad toward promotion and retirement made by the Personnel Law number 657 should be investigated. Necessary additions should be made to the existing precautions.
7. Research centers should be founded and developed in the country. A *proposal* to this, attempts for the foundation of a Human and Social Sciences Research Institute parallel to TÜBİTAK should be initiated for the investigation of social problems of Turkey.⁵⁷
8. Employment should be done on the basis of education level and area of specialization. In other words, man should fit the job rather than jobs being created for the man.
9. The procedures related to people sent abroad for specialization according to law 1416 should be reconsidered in the light of the study on this topic.
10. Employment possibilities and development goals should be taken into consideration in the foundation of new universities and in the determination of quotas. In short, collaboration among the universities, State Planning Organization and the Ministry of Education should be established on the subject.

It should be remembered that finding employment opportunities in a field is much more difficult than increasing the quota for students in that field.

11. New studies on qualified personnel such as scientists, doctors, engineers, who are the subjects of Brain Drain, are needed. The report of the Chamber of Engineers and Architects previously mentioned is especially worth dwelling upon. The subject should be investigated scientifically and necessary precautions should be taken.

⁵⁷ A proposal related to the issue is being prepared by the UNESCO Turkish National committee, Decisions-Report, İstanbul, 1973.

The fact that the problem of Brain Drain is included in the 3rd five year development plan (1972-1977) is encouraging. The problem's being frequently mentioned by the press and its being discussed in the parliament are evidence of its development as a public issue. Although the 1973 executive plan includes a decision concerning research on the prevention of Brain Drain, no such research has been published to this day.

To summarize, sufficient attention has not been given to Brain Drain up to this time. Emigration restraining precautions on the one hand and on the other hand the investigation of the economic, social, administrative and political sides of the problem and precautions in these areas can decrease the tendency for brain drain. However, it should be remembered that the real solution of the problem lies in the scientific investigation of the problem and in the solution of the problem of 'development' of the country.