

THE EXODUS OF SKILLS

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P R E F A C E

"Brain-Drain", "Exodus of Skills", "the Flight of Experts", "Transfer of Know-How", the names have not been wanting to try to qualify a phenomenon typical of our time and which, for several decades, has grown in amplitude each day : the emigration of highly qualified personnel from one country to another.

This trend has taken on such proportions that it deserves to be examined by the E.M.T..

The figures are eloquent :

a) in ten years, from 1956 to 1966, the number of Engineers and Scientists emigrating each year to the United States has gone from 3826 to 6773, an increase of more than 75 %.

b) in 1966 for 145,368 active workers having emigrated to United States, there were 38,812 Engineers, Supervisory and Managerial Staffs, 25.3 % of the total.

If one presupposes that for the "receiving countries" this qualitative and quantitative growth of the working force is a benefit, the very same phenomenon is seen with apprehension and unquiet by the "giving countries".

There have been incessant attempts to make approaches to the problem, to try to define it, to look for the causes, and to find the solutions.

The profusion of names relative to the exodus do not proceed from an ignorance of the realities but simply from the endeavour to unduly generalise and place under the same label phenomena apparently indentical but with causes and consequences which are quite different. And this is done with the sole aim of creating confusion.

Thus, under the same expression "emigration of trained personnel", are juxtaposed emigration from industrialised countries to developing countries, that of developing countries to developed countries as well as that of developed countries to developed countries.

Each year, thousands of qualified personnel from industrialised countries are sent to developing countries under programs of "technical co-operation". There have been attempts to compare this movement to its opposite, but these two kinds of emigration are in no way comparable.

In fact, emigration from developed countries to developing countries can be clearly "determined" : it issues from bi-lateral agreements between states, through the intermediary of international organisations (UNO, ILO, WHO, FAO, etc.), or it is the result of the dealings of multinational societies.

This emigration is also temporary, in the sense that the expert honors a contract and then returns to his home country. He has never lost contact with the nother country. Added to this is the fact that he went in the framework of the official policy of his state.

This kind of emigration has been the object of quite a number of studies and its positive as well as its negative aspects have been the subject of numerous works (n.b., "L'Assistance Etrangère face au Développement du Maroc" by Fathailah Oualaalou, Editions Maghrebines Casablanca 1969).

The emigration so described having been excessively likened to the exodus of trained minds, its analysis will not figure in this paper.

In the first part, we will try to deal with emigration between developed countries.

In the second part, we will attempt to bring out the amplitude of the emigration from developing countries to developed countries.

In the third part, we will examine the causes, and in the fourth we will propose several measures with a view to limiting this exodus.

1st PART : EMIGRATION BETWEEN DEVELOPED COUNTRIES

It is considerable and never ceases to trouble the officials of these countries. At the outset one should note that this emigration is to the detriment of Europe in favour of North America.

The table below shows the number of Engineers, Specialists in the Exact Sciences, Doctors, Dentists, etc., who entered the U.S.A. in 1962 and in 1966 from the principal European countries :

	1962	1966
Grande-Bretagne	1,488	2,015
Allemagne Occidentale	574	615
France	102	180
Italie	126	185
Pays-Bas	213	129
Belgique	50	63
Suède	148	195
Suisse	157	297
Grèce	103	142
Espagne	87	116
Autriche	44	117

The following table indicates the foreigners holding a doctorate in science who entered the United States. They are classified by their last country of residence and by the number of doctorates in science formed in these countries.

Countries	1962			1963			1964		
	Departures to USA (1)	National Production (2)	% (3)	Departures to USA (1)	National Production (2)	% (3)	Departures to USA (1)	National Production (2)	% (3)
Belgium.....	4	109	3,7	4	115	3,5	4	129	3,1
France.....	6	1044	0,6	15	261	1,2	16	1,428	1,1
Germany.....	53	1115	4,8	73	1,060	6,9	71	n.d	-
Great-Britain...	121	1421	8,5	142	1,640	8,7	189	1,804	10,4
Sweden.....	4	48	8,3	10	51	19,6	9	n.d.	-

(2) Taken from "L'Exode des Cerveaux", Centre de Recherches Européennes (Lausanne, 1968)

The above tables are eloquent enough and justify the worries of European officials. Solely in the direction of the U.S.A., Sweden loses 20 % of its annual production of doctors in medicine. In Great-Britain, from where 1620 holders of an M.D. imigrate each year, Mr. Kenneth ROBINSON, Director of Public Health does not hesitate to declare : Great-Britain cannot simply pay for the luxury of forming doctors with the sole aim of reinforcing American Society in medicine."

If on the other hand, European Countries are the object of an intellectual drain in the direction of U.S.A., on the other, they do not receive less "new blood" as concerns emigration coming from developing countries.

In fact, if we examine the situation in European countries such as Great-Britain which seems especially affected by the exodus of qualified people, we have to admit, as the table below shows, that the amount of emigration is partially mitigated by the immigration of E.M.T.'s coming from other countries.

For the Netherlands (1964) and Sweden (1960), the trend is even more pronounced since for these two countries the balance is positive and in their favour (respectively + 145 and + 37).

MIGRATIONS OF SCIENTISTS AND ENGINEERS :
An Appropriate Net Balance for Great-Britain (1958-1964)

	Leading	Entering	Balance
All countries			
<u>1958 to 1964</u>	<u>24,890</u>	<u>19,025</u>	- <u>5,865</u>
1958	3,405	2,030	- 1,375
1959	3,035	2,415	- 620
1960	3,040	2,490	- 550
1961	3,220	3,215	- 5
1962	3,510	3,170	- 340
1963	3,965	2,535	- 1,430
1964	4,715	3,170	- 1,545
United-States			
<u>1958 to 1964</u>	<u>5,005</u>	<u>2,675</u>	- <u>2,330</u>
1958	525	240	- 285
1959	535	330	- 205
1960	590	360	- 230
1961	745	375	- 370
1962	815	465	- 350
1963	865	445	- 420
1964	930	460	- 470
Canada			
<u>1958 to 1964</u>	<u>5,030</u>	<u>3,225</u>	- <u>1,805</u>
Other Countries			
<u>1958 to 1964</u>	<u>14,855</u>	<u>13,125</u>	- <u>1,730</u>

SOURCE : Figures taken from the "Jones Report" : "The Brain-Drain, Report of the Working Group on Migration", London, HMSO, Cmnd 3417.

THE NET BALANCE OF MIGRATIONS IN CERTAIN CATEGORIES
OF INTELLECTUAL WORKERS : NETHERLANDS (1964) AND SWEDEN (1960)

	Coming					
Going	Netherlands	Sweden	Immigrants	Paid with National Revenues in their countries	Total Comings	
Netherlands			609	366	975	
Sweden			213	48	261	
Emigrants	412	95				
Departures of foreigners ...	318	119				
Total goings	830	214				

SOURCE : Data in unpublished reports from the OCDE's Secretariat

Thus, however large it may be, the phenomenon of immigration of European minds towards the U.S.A. should be brought within its true proportions. Without overlooking its sociological implications, one must conclude that, from the quantitative aspect, European countries do not loose as much as those of the Third World.

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2nd PART : THE EMIGRATION OF TRAINED PERSONNEL FROM THE THIRD WORLD
OR THE TRUE BRAIN-DRAIN

The table below shows the part played by qualified personnel originating in the Third World within the total number of skilled immigrants who went to the U.S.A. from 1961 to 1972.

Years	Third World	All countries	Percentages
1961			
1962			
1963	14,514	38,902	37 %
1964			
1965			
1966	7,635	15,585	49 %
1967	8,239	15,848	52 %
1968	8,052	16,096	50 %
1969	8,419	13,139	64 %
1970	11,412	16,492	69 %
1971	16,098	18,890	85 %
1972	15,822	18,466	86 %
TOTAL	90,191	153,418	59 %

SOURCES : CNUCED (TD/B/C. 6/7 of 13/10/75)

This table shows that the flow of immigration coming from developing countries accelerates quicker than that coming from other countries.

Thus, in the space of 12 years, the role of the Third World in this flow to the U.S.A. has gone from 37 to 86 %.

This progression of intellectual immigration from Third World Countries to developed countries shows up more clearly in the following figures :

- 140,000 doctors -6% of the world supply- have deserted the Third World in order to establish themselves in developed countries (Enquiry of the World Health Organisation as quoted by the Weekly Magazine "L'Express" n° 1285, February 1976, p. 61).

- Third World Countries, from 1961 to 1972, have furnished the U.S.A., Canada and Great-Britain alone 230,000 qualified workers among which are Engineers, Specialists in the Biological and Physical sciences, Doctors and Surgeons, Dentists, Agricultural Experts, Professors of Higher Education, etc... (CNUCED. Document TD/B/C. 6/7 dated 13/10/75).

- In 1971, Doctors and Surgeons coming from the Third World Countries immigrating to the U.S.A. represented 51 % of the total number of Americans in this specialty ; Engineers represented 26 % and Scientists 11 %.

.. In 1970, 11,236 qualified personnel among which 6,400 were Engineers left their Third World Countries to settle in the U.S.A. : 8,993 Asiatics (of which there were 3,141 from India and 2,318 from the Philippines) 1,212 Africans and 1,031 Latin-Americans (ibid., CNUCED).

This drain of skilled personnel represents for developing countries a heavy financial burden.

If one estimates the cost of forming a doctor at 20,000 \$, the loss of 140,000 Doctors from the Third World to industrialised countries means for the former a flat loss on the order of 3 billion dollars.

In order to understand what this burden is, we should like to quote some impressive figures :

The report of the CNUCED, cited above, indicates that from 1971 to 1972 the exchange value of the exodus of skills from Third World Countries to the three principal beneficiaries (U.S.A., Canada and Great-Britain) has been estimated at 50 billion dollars. By way of comparison, public aid to development furnished by these three countries during the same period was only 46 billion \$.

Above and beyond the financial strain caused by this exodus of trained minds from their countries of origin, an entire policy of economic and social development is put into question.

It is undeniable that no policy for development can lead to good results without a national staff of highly qualified personnel.

The various national E.M.T.'s are the only ones even to have adopted new techniques to the real needs of their countries.

Technical co-operation, onerous, temporary, subject to political and outside fluctuations and under the influence of a foreign mentality, is in no way able to replace a national, autochthonous work force of skilled personnel.

Projects to build factories in Third World Countries have difficulty getting off the ground for lack of national revenues.

From the social point of view, one can get an idea of the grave consequences resulting from the emigration of skilled personnel when one takes into account the distress in countries which possess only one doctor for every 10,000 habitants and which have financial difficulties educating their own doctors (cost of the education of a doctor : 20,000 \$ - average annual income per inhabitant in developing countries : 200 \$) who then emigrate to other countries which do not have the same needs.

The exodus of skills takes the form of a tribute to development which the developing countries give to developed countries in exchange for their aid as concerns education.

The "receiving countries" profit enormously from the inaptitude of "giving countries" to retain their experts.

An example of this, it was pointed out that aid to development given by the U.S.A., Canada and Great-Britain was inferior to the capital value represented by the exodus of skills. It was also seen what a startling proportion skilled immigrants make up in the total number of skilled personnel in the U.S.A..

The following table shows the proportion of skilled personnel within the total number of immigrants to the U.S.A. from 1962 to 1966 :

YEARS	ACTIVE IMMIGRANTS POPULATION (1)	LIBERAL PROFESSIONS-TECHNICIANS and RELATED (2)	SCIENTISTS and ENGINEERS (3)	E.M.T. (2)+(3) = (4)	(4) x 100 (1)
1962	127,693	23,710	4,044	27,754	21,7
1963	137,817	27,930	5,626	33,556	24,3
1964	131,512	28,756	5,401	34,157	25,9
1965	130,811	28,790	5,004	33,794	25,8
1966	145,368	30,039	6,773	36,812	25,3

(Source : Rapport OCDE - Paris 1970)

In 1962, for example, 4,044 trained Engineers settled in the U.S.A.. These figures represent about 10 % of the total number of Engineers formed in the United States during that year.

According to the calculations of Professor Kelly M. West, of the Faculty of Medicine at the University of Oklahoma, the U.S.A. would have to finance and to construct 12 new schools of medicine if they themselves were to assure the formation of the 1,200 doctors who emigrate each year to the U.S.A..

Over and beyond this economy of investments in the matter of education, emigrating countries have other advantages. It is estimated that in 1970 the immigrating E.M.T.'s gave to the welcoming countries an amount totaling 950 millions dollars in the way of taxes on their incomes.

In light of these givens, it clearly appears evident that the welcoming countries will not easily renounce their enormous advantages resulting from the exodus of the E.M.T.'s.

Nevertheless, for the E.M.T.'s in these same welcoming countries the situation does not appear to be as advantageous, and this for two reasons :

- the influx of educated immigrants encourages these governments to adopt a complacent policy and to hold back on investments which would guarantee the infrastructure necessary for the formation of future generations. Nothing is more dangerous than to follow such a path.

- the immigrating E.M.T.'s do not adapt easily to the social conditions in their welcoming countries. They continue to remain a group outside the realities of the country. As such they constitute an awesome working force in the hands of employers. And this works counter to the tendency to unionisation and the fulfillment of demands by national E.M.T.'s.

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3rd PART : THE REASONS FOR THE EXODUS

What are the reasons therefore which lead Engineers, Supervisory and Managerial Staffs and Technicians to abandon their countries, their families and their situations ?

It should be remarked at the outset that historic and geographic ties play a role in the destinations of immigrants.

In effect, the exodus of minds from less developed countries to those which are more developed takes place most of the time in the framework of the historic bonds which unify these countries : developed countries find in their former areas of influence a natural source of supply for certain of their needs in Supervisory and Managerial Staffs and Technicians ; the future Supervisory and Managerial Staffs of developing countries let themselves be attracted more readily by countries where the language and the culture are already familiar. Thus for example,

African Francophones are drawn more to France, whereas Indians or Pakistanis prefer Great-Britain or the U.S.A. (28 % of the number of immigrants going to the United Kingdom during the 60's were Pakistanis - CNUCED 1975).

The geographical situation can also be a factor of choice. This explains why, for example, there are privileged relations between the South American continent and the United States. The total number of immigrants to the U.S.A. from 1960 to 1972 includes 18 % Latin Americans.

The Lack of Opportunities for Training at Home

For many of the Supervisory and Managerial Staffs coming from developing countries, the first contact with the countries to which they later immigrate to occur during the time of their studies at school. The marked absence of possibilities for training in their countries leads them to expatriate themselves provisionally. From this situation arises some of the loss of skills, since many of the temporary expatriates never regain their countries of origin and this dates from the time of their education. It was in this way that, according to a poll made in 1969 in Senegalese circles in France, for every eight Senegalese students, two or a fourth of them settled in France in positions of management. This form of exodus of skills is particularly noticeable in very new countries such as those of the OPEP, for example, which do not yet possess the necessary educational infrastructure at both an elementary and higher level. This condition aids in the exodus of almost all the students liable to form the future management of these countries. These countries are virtually delivered into the hands of foreign experts.

It appears then that the insufficient number of centers of higher formation constitutes the initial deficiency of certain countries suffering from the exodus of their skilled personnel.

Maladjustment in the Professional Context

One is able nevertheless to imagine that, their studies behind them, the trained Supervisory and Managerial Staffs to accept to go back to their home countries. But in reality, one has to admit that often

the difference between the level of their skills and the professional and technical context in which they are obliged to work on their return is of such a nature as to keep them from returning. They have quite gotten used to highly perfected equipment, the use of thoroughly worked out techniques and good working conditions as regards ordering and using of material. They are not certain of finding again any of these things when returning to their countries of origin.

An inquiry in the newsmagazine, "l'Express", recently underlined the refusal of many doctors from black Africa to take positions in the provincial hospitals of their own countries. There, the working conditions, medical techniques supply of medications and the kind of treatment have little in common with that found in a hospital complex in a European capital.

There is in this case on the part of the doctors a reluctance to adapt themselves to technical conditions for which, moreover, they have not been trained.

There exists too large disparity between the qualifications of these trained personnel in management and science and between the job possibilities that they can find in their countries. Their training is not suited to the realities.

Furthermore, a number of the countries do not have available for their Supervisory and Managerial Staffs sufficient inner organisation to permit them to follow the technical progress being made and to eventually participate in its development.

Difficult Social and Political Conditions

One can also see political and social reasons in the refusal of skilled personnel to respond to the employment needs of their countries.

For the little that they belong to this class, the E.M.T.'s do not bend eagerly to the sometimes very demanding will of the class of directors in their countries. The E.M.T.'s often have a feeling of superiority, legitimate in the technological domain, but which does not easily express itself in the face of administrative authority. Sometimes, they are so

taken up with administrative tasks that they have to leave aside their vocations as technicians and scientists.

For many of them, their career and fortunes are closely tied to the political evolution of their countries, all of which serves to provoke feelings of insecurity.

The problem of the exodus of skills, among others, thus has a political ring : the management of the countries suffering from this exodus often consider themselves frustrated by a social and political status which does not give them the guarantees comparable to those which exist in industrialised countries.

Financial Motivation

However, the strongest of the motivations which push the E.M.T.'s to emigrate seems to be, at its origin, financial. The expectations for earning more is incredibly higher in foreign countries.

If ones takes into consideration, as an inquiry in the review Jeune Afrique pointed out, "that an African, Asiatic, or South-American Engineer educated abroad and working for example in the United States makes there 230,000 \$ in net revenue during the course of his career, against only 25,000 \$ - that is, ten times less - if he stays in his own country", one can quite understand the choice of these Engineers. Of course, it is necessary to take into consideration in these calculations the difference in the cost of living between these countries : but the difference of income is so great that it preponderates

In the light of these observations on the principal reasons for the exodus of skilled personnel, we can try to bring out several points relative to mesures to take to stem the loss.

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4th PART : THE MEASURES

Whatever may be the gravity of the problem of the exodus of skills and its awesome consequences, no sort of coercive action can be expected from the emigrating countries to check the flow, and this for two principal reasons :

- First of all, the principles enunciated in the United Nations Charter clearly recognize the complete liberty of individuals to emigrate.

- In the second place, any coercive action would only have a boomerang effect ; and the attempt would turn against its promoters for it would give the E M F.'s an added reason to leave their countries.

It is thus necessary to go to the very root of the problem and, by using the appropriate measures, try to eliminate the motives which encourage intellectuals to emigrate.

1) Political Formation

We have seen that it is often at the time of their studies that the future Supervisory and Managerial Staffs leave their countries for the first time. Behind all the financial, social or political motivations which lead them to emigrate, one should above all look for a veritable cause which resides in the dichotomy between the formation received - moral as well as as professional - and their countries of origin.

A real solution consists thus of eliminating this dichotomy and by "nationalizing", in the etymological sense of the term, the formation. To do this, it will be increasingly necessary to assure the local formation of Engineers, Supervisory and Managerial Staffs and Technicians at all levels of competence

In this regard it is important that the training be given in the national language, without for all that neglecting foreign languages which permit the development of international exchanges.

If it is correctly conceived of, a national formation will present the immense advantage of answering to the real needs of the country. And this presupposes the elaboration of a program of formation and the choice of qualifications in harmony with the plan of development, that is to say, within the outline of the major economic and industrial projects of the country.

In this way, it will be possible to adapt the teaching of new techniques -which all E.M.T.'s expect from their education- to the economic and social conditions of the country. This would permit one to resolve the intellectual conflict of E.M.T.'s who want to know what the latest developments are in science and who do not want to loose contact with national conditions.

2) Socio-Economic Infrastructure and Professional Milieu

But it is also imperative that, after their formation, they are able to find in their own country a socio-economic infrastructure and professional milieu which allows them to develop their personality. They want to satisfy the legitimate need to freely exercise their profession according to their qualifications. They are equally obliged to keep themselves informed and to follow the evolution in their specialities, to participate in it as this evolution occurs in other countries as well as in their own. In aiding this task, with the creation of centers of higher studies and research institutes, these countries will be able to keep their advantages while acquiring, on an international level, a reputation in certain scientific and technical areas.

This policy will go to the benefit of not only the E.M.T.'s but to the entire country as well.

3) Recognition of the Importance of Technical and Scientific Personnel

The E.M.T.'s, due to their high level of qualifications, would like to be recognized in their roles at the center of their companies or even on a national scale. They are able, each at his own level of competence, to give an orientation to the options posed to their companies. They exercise a certain amount of decision and thus further participate in the development of their country.

Too often, they have the impression that they are not considered as having the aptitude to judge, technically at least, the problems which concern them and over which the decisions are imposed.

The opposite would be necessary : that one solicites even more their propositions in the framework of a plan established for the most part ahead of time, and that the power of administrative authority should be rather a power of choice or of control and not a power to impose decisions.

The E.M.T.'s do not accept to be simply the executors of the will of others. It will be necessary to establish a policy to permit them to play a role consonant with their qualifications.

It is above all necessary to create the adequate political conditions necessary to allow the E.M.T.'s to work in conformity with their social conscience and to work in dignity.

4) The Immigration Policy of the Welcoming Countries

Due to extent of the exodus of skills, the measures to take in order to limit it do not rest simply on the "leaving" countries but rely as well on the "welcoming" countries.

In reality, the latter practice a veritable policy of "encouragement" to obtain E.M.T.'s, to which end these countries offer numerous advantages.

It would be thus necessary that the countries benefiting from this exodus adopt a more strict attitude with a view to dissuading the E.M.T.'s from quitting their countries of origin.

CONCLUSION

On this issue as on many others of the movement between countries of E.M.T.'s, international co-operation is essential to resolve all the problems it poses.

It is urgent for the reasons mentioned in this paper to put a check on this exodus of skills.

Foreign aid for development given by developed countries is an illusion : they have back with one hand what they give with the other.

Therefore it will have to be on the level of international organisations and committees that options be taken to eliminate this phenomenon.

But it will be seen appropriate to familiarize international opinion with the phenomenon. In this field, the role of unions, and notably the organisations consisting of E.M.T.'s will be a determining factor.

It belongs to them to define the qualifications and the aspirations of the E.M.T.'s with a view to orientating their formation and to the perfecting of their skills.

For the immediate future it is proposed that :

union in developed countries increase their efforts to obtain the means of education and formation at all levels which will permit their countries to reduce the need for immigrants.

unions in developing countries increase their organisation and put more in evidence the social role of the E.M.T.'s thus permitting likely candidates for emigration to find within the framework of their jobs the necessary elements which will dissuade them from leaving their own countries.

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