ENVIRONMENTAL SCIENCE AND TECHNOLOGY IN ROMANIA: THE NEED AND THE POSSIBILITIES OF COOPERATION BETWEEN THE ROMANIAN UNIVERSITIES AND THE ROMANIAN STUDENTS AND RESEARCHERS AT THE EUROPEAN UNIVERSITIES

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Globalization is a fact with consequences ranging from education and science to market dynamics and environmental safety. In such a complex world, one perennial question is: *How to maintain the globalization-born benefits above the globalization-born troubles?*

As anybody here would probably agree, part of the answer lies in the development of a strong interaction between universities and society, and between universities of different countries.

International networking in education and research is good for the world. Well, for the rich countries, this is definitely good; but what about poorer countries? Thinking to all developing countries, let us talk about one of them: Romania.

This country already negotiated and signed the treaty of accession to EU, and it is posed to be part of its family in 2007. Unfortunately, the national potential of development and the European integration of Romania are seriously hampered by the loss of human resources: the so-called "brain drain".

This is a most serious loss of educational investments of the Romanian society. The phenomenon is caused by the lack of professional perspective for most young researchers, especially in natural and technical sciences, in comparison with the developed West. In the past, there were certain political voices that bluntly accused the developed countries of profiting the educational investments made by poorer countries.

Nowadays certain measures are being implemented toward diminishing the Romanian brain drain by national investments in post-doc opportunities, like with the recently launched program "Research at Excellence Level" (in Romanian "Cercetare de excelenta – CEEX") - section "Human Resources Development".

Such programs are welcome, but I propose that we can do even better. In the next lines I propose a national program that may help integrate the skills and experience gained by Romanian scientists in rich countries into the Romanian research, and thus turn the brain drain into "brain networking".

The idea is not to convince anybody to come back to Romania just like that, because nobody would suddenly reject the very reason for which he/she went to study and make research in the West. This would be pure fiction. The idea is to recognize the fact that "brain drain" is actually beneficial for the young researchers, and to try to make this also beneficial for their country of origin.

The proposed concept (and solution) is "professional consultancy". The proposed method consists, at national scale, in a contract of consultancy between a Romanian University and a Romanian researcher functioning at a Western University. The Romanian University would propose a realistic salary of say ca. $ 2000 (ca. € 1600) *per year*, in exchange of consultancy services: assistance (by means of permanent contact by e-mail, etc)

in project writing; research and development; publication in international journals. Only researchers with minimum 3 years of experience or a PhD in a western University may apply for a job of consultancy. To account for various levels of experience, for each additional year of experience, € 100 per year would be added to the minimum salary.

What is crucial, this salary must be realistic both for the effort of the contracted consultant, because he would need to integrate the work of consultancy within his professional responsibilities at his University, and for the Romanian budget, because no Romanian University would be able to offer the salaries *per month* and the working facilities from the (good) Universities in the West.

This method would be implemented through a national program, managed by a National Office (probably 2-3 persons would be enough personnel) coordinating the similar offices in each Romanian University participating to the program. A special budget will be assigned for this program, as a measure of national priority, to cover at least the consultancy salaries. When possible, each University would be free to propose supplementary funds for its own consultants.

The National Office would be responsible for the international dissemination of the information regarding the consultancy program, and would direct the inquiring researchers toward the University Offices on the basis of the location and/or domain of interest. Thus the researchers interested in a consultancy job would be put quickly in contact with the potential collaborators in the Romanian Universities.

The University Offices would be responsible for the selection of the applications made in common by that the researcher in the Diaspora and local researchers/ departments of the University. The application must contain a CV of the applicants and a coherent /feasible program of consultancy, which should meet the need of the Romanian University and department.

After making the selection of the applications *on the basis of professional criteria*, the University Office must propose individual contracts of consultancy to the National Office. The National Office would approve the contracts of consultancy strictly *on the basis of regulations of the Program*. This includes the routine responsibility of the National Office to check that the information presented in the application is veridical.

I believe that such a program is possible, and also really needed, for the following reasons:

1. If combined with a realistic professional frame, the emotional attachment of the Romanian researchers in Diaspora to their country of origin would be a powerful motor of progress for the Romanian society, through international academic networking.
2. Some of the Romanian researchers functioning at Western Universities are already collaborating with Romanian Universities, which means that the people want to collaborate. Such a program would boost the efficiency of the on-going collaborations, and would make possible a much higher number of collaborations.
3. The Romanian Diaspora in Europe and in USA is more and more strong and manifesting interest to participate to the life of the Romanian society.
4. The here proposed minimum financial effort per year and per consultant is comparable or even lower than the one paid nowadays for the very beginner teaching personnel in the Romanian Universities. So the financial effort would be relatively low, but the result would be very important.

At the basis of the proposed idea of program lies the personal experience in research in the field of environmental science and technology in Munich, and in my current collaboration with the Romanian scientists in Iasi.

In the very close perspective of the integration in EU, environment is one top priority for Romania in the next years and even decades. Despite the fact that environmental sciences and technologies must urgently be developed and applied in Romania, there is a huge lack of impact of the Romanian experts upon the Romanian society.

Beside a yet immature communication between Romanian Universities and Romanian society, the situation is due to the fact that modern expertise and international visibility of the Romanian specialists in the field is underdeveloped and rather patchy. This gap between potential and need (on one side) and present situation of the environment in Romania (on the other side) was also the rational for some internationally funded programs.

To give a very concrete example, the Swiss National Science Foundation is financing and, together with the Romanian Ministry for Education and Research, patronizes the program of Swiss-Romanian joint research projects, called Environmental Science and Technology (ESTROM).

The past and current activity of collaboration and consultancy between me and the Romanian scientists in Iasi (in environmental biology and chemistry) made possible the application and acceptance of a joint project (Lausanne – Iasi) within ESTROM. Other similar joint international project applications are currently being submitted and/or worked out.

However, our collaboration is still not being developed to its full potential, because there is no internationally clear frame of collaboration. A formal and economical definition of this collaboration, in the form of a contract of consultancy would render this professional relationship more predictable, more efficient and more stable.

In addition, with a well nurtured collaboration between young Romanian scientists working in the West and Romanian Universities, there is a true chance that, one day, those specialists will return to their country.

Reference:

Ciumasu, I.M.*, 2005. *Environmental science and technology in Romania: the need and the possibilities of cooperation between Romanian Universities and the Romanian researchers and students at the European Universities.* Talk at the Summer University *"Université dans la societé / University within society – UNISO", edition 2005: Université et employ / University and labour market*, 18-23.07.2005, Cherbourg, France. Paper in the homonymous book, edited by S.A. Zaharia and M.S. Patriche, chapter VII – International mobility: an asset for the access to employment, pp 309-312, Bucharest, Paideia, 2006, ISBN 973-596-305-1, http://www.uniso.ro/images/uniso/pdfuri/volum2005fr.pdf