

## Are ERA enlargement and extension real?

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### 1 Introduction

The actual steps towards creating a European Research Area (ERA) make possible discussing the present scientific framework as well as the minimum conditions that are supposed to bring consistent and competitive contributions by the Romanian research and development (R&D) within European Commission (EC) projects of the Fifth Framework Programme (FP5). These comments, previously expressed,<sup>1,2</sup> are based on the author's work since 1999 within the Romanian unit of the EURATOM (*Fusion*) Association and the project IDRANAP<sup>3</sup> under the EC/FP5 call "*Support for Centres of Excellence*".

### 2 Excellence of previous results vs. failure of actual infrastructure

The main point concerns R&D European-added value which should be "made in Romania" although it hasn't been taken into consideration whether the work of R&D is still possible at European standards within Romanian institutes. Since IDRANAP has been the only successful proposal for EC/FP5/INCO2 "*Support for Centres of Excellence*" among units within the Romanian Ministry for Education and Research (MEC), the IFIN-HH experience may have a particular significance in this respect. Actually in this case the '*excellence*' does not characterize the *working conditions* at our site - the well-known Institute of Atomic Physics (IAP) founded by Horia Hulubei at Bucharest-Magurele in the 1950's - but the level of *results* that have been obtained until now by our staff. This is the reason why our working conditions, formerly below worldwide standard have worsen until present, should be replenished by the FP5 support of the IDRANAP project in the first place.

An obvious sample of the too low present R&D conditions could be the funds provided by MEC for 2002 to the National Physics Library, one of the basic achievements within the half-of-century history of the IAP. The funds were made available 9 months later than promised thus even in December no international

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<sup>1</sup>P. Swiatek, State of the Art Questionnaire, KOWI, Bonn, 2001; <http://www.kowi.de/moel/questionnaire>

<sup>2</sup>Workshop – The Integration in the European Research Area, October 25-26, 2002, New Europe College and KOWI, Bucharest, Romania.

<sup>3</sup>"Inter-Disciplinary Research and Applications based on Nuclear and Atomic Physics", IFIN-HH, 2001-2003 (Confirming the International Role of Community Research call ICFP599A1AM03/15.05.1999).

journal published in 2002 had arrived at IAP. On the other hand, the amount of the funds made possible subscribing to only 11 journals in the whole field of physics and related topics, e.g. nuclear medicine, while even in the late 1980's more of 50 journals were subscribed yearly, based on and making further possible local results worldwide recognized. Within the latest decade there were years of either *no* international-journal subscription (1991, 1992) or with 80 titles acquired (1998), proving no constant governmental interest in providing and preserving suitable R&D conditions. Thus, the one-month visit per year available for each IDRANAP work package at EC laboratories could make possible only the update of a suitable documentation in their own field, which can not be disregarded if one (including MEC) is looking for successful research proposals made by Romanian researchers within European projects. A similar story is true for the whole infrastructure of our institutes. Under these circumstances one may easily see that larger (3-6 months) working stages of the IDRANAP visitors will be mainly formal and inefficient. They are making more obvious the *difference between the income of the foreign and local scientists*, over one order of magnitude existing between the allowances of the former and salaries (often delayed or partly paid) of their Romanian colleagues and even coordinators.

The last of the above-mentioned features may also be pointed out as one of the main reasons of the *brain drain* especially among the youths. Not only the normal learning and research conditions are lacking but it is also *absent the usual worldwide consideration* given to a specific activity foreseen to bias the *society progress*<sup>4</sup>. Actually only (i) salaries either at the level of experience - proved by means of international evaluation criteria - or at least at the highest level for state employees, i.e. national banking system, and (ii) infrastructure as normal as possible may help our society to retain its own research staff. However, while these points are closely related to the R&D system, trial of understanding the brain drain case should take into account as in the next section also the global socioeconomic issues which are characteristic to the post-communism period.

Nevertheless more hopeful actions have been already initiated, e.g. the EC/FP5/INCO A1 "*Strategic action on training and excellence*" (deadline on 18.01.2002), foreseen to provide also the possibility to bring back the experience acquired by most promising researchers from candidate countries during training periods in a Member State. A still possible improvement of such actions could be however a reversed ratio of supported periods in EU and respectively central and east-European countries (CEEC) institutes, which is now 2/1.

Well working is also the EURATOM contract of association signed in 2000 by our MEC representative too. The condition of distinct deliverables carried out by each national association, following the competition throughout the all associates, provides the necessary funds for all expanses in this respect. Moreover, the European fusion-workprogramme tasks including deliverables of various institutes, work already as real *networks of excellence* which are now a main type of actions foreseen within the Sixth Framework Programme (FP6). However the support of deliverables carried on at our institutes can not supply the whole infrastructure supposed to assist work at European level. It is amazing that just at the time when the Romanian scientists involved in such projects - after proving the necessary competence - may obtain their full salaries, they may find themselves not deserving it under the actual conditions. This makes less useful even their possible well-increased salaries as the governmental representatives say, which it would be nice if true at least for the young people.

### 3 R&D enlargement inside/outside actual EU

It must be also emphasized that under such conditions the enlargement actions, which are already in due course within EU institutes as the EC Joint Research Centre (JRC), may have lower effectiveness in reaching some of their final aims of:

- preservation and development of knowledge and capabilities at *CEEC institutes*,
- integration of *CEEC efforts* into existing EC/JRC programmes and EU networks,
- expansion of EC/JRC activities by additional manpower and networking, and
- cost effectiveness achieved by bringing together EC/JRC facilities with manpower available to the CEEC.

<sup>4</sup>Romano Prodi, *European Parliament, January 16, 2002*, CORDIS Focus No. 189, 28 January 2002, p. 1.

Moreover, it could be possible the failing in achievement of goals involving CEEC institutes if these institutes will collapse in the meantime.

Therefore, in order to get ERA extended indeed over candidate countries, the enlargement actions performed both at CEEC and EC institutes should be *well known and related* in real time (their currently updated inventory on, e.g., CORDIS may be quite helpful in this respect). Otherwise the opportunities and experience gained by CEEC scientists working at EC institutes, within enlargement programmes, will have no other place of application except the EC institutes too. This will be just a '*local enlargement*' while only a real similar process will take the full advantage of an extended EU.

#### 4 The key rule of R&D enlargement

Actually it was pointed out from a very beginning<sup>5</sup> that, concerning the participation of the candidate countries in the ERA:

- the enlargement in the R&D area is not longer a matter of negotiation (as the relevant chapters have then been closed with all accession countries) but of *practical measures* to ensure the full integration of CEEC as *equal partners* in the ERA, and
- CEEC should improve their R&D infrastructure in order to better benefit from the enlargement process and prevent the actual situation of the benefits that are unevenly distributed.

It results that responsible representatives will involve national resources in the research European Frameworks once the national R&D infrastructure is able to support indeed partnership and common benefits. The argument of a *crisis of the national economy should not mitigate this condition but strengthen it*.

Unfortunately the need of practical measures and improved Romanian R&D infrastructure could not be fulfilled by means of research spending as a percentage of the average gross domestic product (GDP) of either *0.11%* or *0.18%* provided through MEC in 2002 and 2003, respectively. It is thus questionable the request of MEC for more Romanian competitive proposals within the EC framework programmes while we have at, e.g., IAP already no contact with the latest results worldwide published. The successful story of Slovenia<sup>6</sup> where *1.52%* of GDP for R&D explains the *highest 33% success rate* of CEEC project proposals under FP5 should be followed in this respect. It is the best illustration even for the candidate countries of the usefulness of achieving the GDP *3%* research spending target in 2010.

However the MEC strategy for reaching this EC basic objective is not clear. Since it is known that also the low private sector can not have a significant role in this case, the real enlarged ERA could be the last chance for the Romanian R&D. Nevertheless the effect of the actual R&D work conditions will be the same. It could be even compared with the case of other most important European-progress factors losing their efficient action under the conditions of the so-called '*transition*' period:

EUROPEAN PROGRESS FACTOR	QUALITY	'TRANSITION MANAGEMENT'	ACTUAL RESULTS
Natural resources	Huge	Irrational exploit 4 $\pi$ Dispersion	No (CE)EC progress Environment damage
Market	Large	Low life-level	Low EU economy progress
R&D (Human resources)	High quality Low cost	Lacking work conditions	No ERA effectiveness

<sup>5</sup>Günter Verheugen, *First Meeting of Member State and Candidate Country Research Ministers, Brussels, July 12, 2001*, CORDIS Focus No. 178, 30 July 2001, p. 4.

<sup>6</sup>CORDIS Focus No. 205, 23 September 2002.

## 5 Extended ERA vs. brain drain

Following the signature on 29 October by the candidate country research ministers and Research Commissioner Philippe Busquin of an association agreement for the FP6, the EC President Romano Prodi asked them to do everything they can to meet the 3% research spending target and to prevent brain drain from Europe to the US. The recognition of the scientific potential that candidate countries possess, pointed out then by Mr. Busquin, has been related to the consideration of the “*research as the first area where enlargement becomes a reality, well in advance of the accession schedule*”<sup>7</sup>.

While the research is considered to bias the society progress<sup>4</sup>, the new educated generation is most important for the knowledge base of society. The salaries, infrastructure and prestige found in the US make it difficult from Canada<sup>8</sup> to EU countries even to retain the own skilled young people and research staff. However, beyond this global view of the brain drain, one should look for the particular reasons within any country in order to understand and control this question. A distinct case is that of a country in a post-communism stage, so that a closer look is well motivated speaking about the EU enlargement.

In spite of the doctrine that all means of production should be property of community, the class struggle was turned against any kind of value including the intellectual one. The elite demolish was the first certain result of the communism power. The survivors had to accept and follow the political authorities, except the well-known dissidents who helped the people understanding but less the society management. Next, it is well known that the changes at the beginning of 1990's have transferred actually the economical power to people controlling the society previously. The *value crisis* has been thus prolonged so that even now one may find department heads following the party line fairly closely but missing the proper qualifications (e.g. in R&D without completion of the first stage proving the capacity of independent research work – the PhD degree). It results both a questionable management and making the youths get their own way abroad.

Usually it is considered that welfare is attracting and retaining world class talent. However, in the case that *a new technocrat leadership and a proper consideration of their work* would make young scientists return and try to have at home the normal both career and life, the actual corruption will certainly stop them. The ‘*elite*’ just born during the transition period established rules compatible with its origin at any socioeconomic level. Therefore it is necessary also a *correct social environment* in order to make knowledge to feel at home.

Following this schematic outline of the brain drain motivation and factors that could limit its size, one may conclude that research is a society key mark also from this point of view. The *worse economic state* may not explain any disregard of the R&D requirements for a real performance. The enlargement process will be effective only under such conditions, which should be provided by national authorities. One may note in this respect the most responsible statement of Lucija Cok, Minister of Education, Science and Sport in Slovenia who emphasized<sup>7</sup> that ‘we want to improve conditions in our own countries rather than depend on foreign money’.

## 6 Summary

While we may only hope that Romanian R&D will receive a proper national consideration, it seems now more realistic to summarize the following proposals to be considered within FP6 and ERA:

- *Distinction among excellence of results* and (mostly absent) *excellence* of working conditions.
- The *working conditions* at CEEC institutes should be *firstly replenished* by using EC support, or weighted by working stages at EC institutes on *projects to be continued at home institutes*.
- *Currently updated inventory* of all individual enlargement actions on, e.g., CORDIS.

Nevertheless, a real and fruitful ERA enlargement will be possible only if national authorities will pay due attention to *the need of suitable R&D framework*. Otherwise our position on the European internal market for knowledge and science – which is becoming ERA - will be quite low as well as the

<sup>7</sup>CORDIS Focus No. 208, 4 November 2002, p. 3.

<sup>8</sup>CORDIS Focus No. 206, 7 October 2002, p. 8.

corresponding society progress, in spite of the human resources proved even by *the large proportion of the population with third level education*<sup>9</sup>.

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<sup>9</sup>Report on '*Innovation policy in seven candidate countries: the challenges*', CORDIS Focus No. 209, 18 November 2002, p. 7.