

# Management of public R&D institutions in Romania

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## 1. Introduction

The present final report synthesizes the findings from the “Management of public R&D institutions in Romania”-assignment, which the European Commission, DG Regional Policy, Unit I1-Romania commissioned to INNOVA Europe of Brussels, who has been assisted by a local operational team of Romanian subcontractors composed by FM Management Consultancy SRL and GEA Strategy & Consulting SA.

It is structured as follows:

- Presentation of the study objectives (remainder of Chapter 1)
- Presentation of main findings (Chapter 2)
- Presentation of a Roadmap (“action plan”) to overcome identified shortcomings and to endow the responsible authorities with appropriate means to improve the management of R&D institutions in Romania (Chapter 3)
- Selective inventory of good practices in management of R&D institutions from abroad (Chapter)

### 1.1. Objectives of the assignment

The main aim of the “Management of public R&D institutions in Romania”-assignment was to analyse the capacity of Romania’s main body, NASR, to manage the (public) R&D institutes in the country and to allocate corresponding funds in such a way that it contributes both to achieve the goals set out by the Lisbon strategy and to subscribe to the objectives of the Cohesion Policy.

In this context, the objectives of the study have been threefold:

1. Assessing the capacity of the NASR to monitor the sector and allocate public financing, with regard to its organisation and functioning;
2. Assist the NASR to set up efficient monitoring and evaluation tools, with a view to disposing of objective and continuous assessment of the stakeholders;
3. Identify the main public or private R&D institutions in the nine thematic sectors of the RDI Strategy, and assess their capacity to apply for ERDF or the 7th Framework programme funding and implement accordingly successful projects.

## 2. Synthesis of main findings

During the execution of the projects tasks, the resulting information gathered, findings, results interpretations and conclusions have been registered in the form of two interim reports which report on a task by task basis, in respect with tables 1.

The following sub-sections presents a summary of main findings identified throughout the study which feed the recommendations we present in section 3 entitled 'Roadmap'.

### 2.1. The institutional framework surrounding NASR

**Objective:**

Assess whether the institutional framework that surrounds the National Authority for Scientific Research (NASR) provides it with the competences, mandate and space to fulfil its mission and functions.

And should this not be the case, what are then the eventual weaknesses in the current setting.

NASR has a clear mandate with regard to coordinating and stimulating R&D and innovation (RDI) activities, and it is clearly the central player in fostering the development of RDI in Romania and in coordinating the various actions undertaken in this regard by other organisations involved in RDI policy-making and funding in Romania.

Nevertheless, as there are many public bodies active in the field of RDI development in Romania, NASR's role of "unitary coordination of RDI activities in Romanian universities, national institutes, institutes of the Romanian Academy and other branch academies" is under ongoing strain. Consequently, a strengthening of NASR's grip on the execution and management of RDI policies and funding of R&D projects ought to improve the effectiveness of policy support and public funding to RDI in Romania.

A less fragmented RDI policy execution and funding landscape would also raise the survey-ability and comprehensiveness of the institutional landscape in Romania for RDI support on behalf of potential beneficiaries. Furthermore, a centralisation of powers at NASR should allow reaping economies of scale and scope in the management of RDI programmes. In addition, the enhanced transparency, simplicity and uniformity of application procedures for R&D funding and grant competitions that would follow from this is positive for R&D organisations tendering for public RDI funds (see hereafter).

The current fragmentation of powers and management lines over respective grant competitions and funding programmes also implies a risk that an overly part of the NP II budgets goes to theoretical and basic science-oriented research activities and organisations, and this goes at the expense of supporting applied RDI.

At present NASR lacks sufficient powers to influence and align sectoral R&D plans of other Ministries in Romania with the overall RDI development agenda for which it bears responsibility. This leads to missing out on synergies between the respective R&D programmes and plans. A related risk is that such Ministries do not apply the same evaluation criteria as NASR for awarding RDI assignments. Among others because their awarding decisions tend to be focused more on institutional development actions/projects than on stimulating research activities in certain directions as such. Also, they often do not assess the relevance of RDI projects based on the overall RDI policy agenda in Romania like NASR does (or other management bodies, like: UEFISCSU, CNMP, AMCSIT). Consequently, this can put a mortgage on the consistency and quality of RDI assignments commissioned by Ministries, leading to the risk of societally sub-optimal allocation of resources. Moreover, it provides certain public institutes with a financial basis that allows them to compete in a better way for resources in open grant competitions and tendering procedures.

A further streamlining of the different sectoral plans and the overall RDI development agenda is indicated, therefore. This can be underpinned by either:

- more formal powers for NASR vis-à-vis such sectoral plans,
- the design of an overarching Master Plan (e.g. NP 3) that provides direction to all RDI plans to be made,
- or –in the event that certain sectoral plans are also funded with European money- the imposing of directives for fine-tuning sectoral plans with help from NASR and or the NP II as the point of reference to come to integrated RDI development in Romania.

Also, the existence of several councils blurs and hampers the activities and powers that NASR can exert. Also, because the mandates of all kinds of councils are not always well defined and sometimes overlapping. Also, the councils are not always doing everything their mandate presupposes them to do. A clarification of the role of the different councils is, therefore, also recommendable. This applies specifically to:

- National Council for Scientific Research in Higher Education (CNCSIS)
- Advisory Board for Research, Development and Innovation
- Innovation Council

Similarly, a further adherence of Romanian Academy institutes to NASR-led R&D proposal awarding criteria ought to be positive as well for the sake of competitiveness-driven research and market driven innovation. One way forward here could be to recreate and empower the National Council for RDI<sup>1</sup> as the highest inter-ministerial structure monitoring adherence to innovation policy priorities, and to make NASR the executive secretariat of this Council, and consequently to have the Academy follow these priorities more pronouncedly as well.

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<sup>1</sup> Instead of the current National Council for Science and Technology Policy

## 2.2. The internal organisation of NASR

**Objective:**

To take stock of NASR's resources and its internal organisational structure in order to establish whether NASR is well endowed to fulfil its mission and functions from a resources and organisational perspective.

In addition, determine whether NASR is structured in an effective way (does it have an organisational structure that is goal-oriented (notably in view of fostering market responsive R&D and innovation), with sufficient means both in terms of human resources and equipment, and if it effectively coordinates cross-support of organisational units)?

As a consequence of NASR's political subordination to MERI, its executive independence is limited and it lacks the ability to negotiate its own budgets. A subordination of NASR to the Prime Minister would favour NASR's possibilities to stimulate RDI development in Romania. It would also help NASR in adapting its financial and human resources' needs to the ends it is supposed to reach. However, as NASR is in the first place an executive organization and not a political vehicle, this will be difficult to realize. An alternative would be –as indicated above- to recreate and empower the inter-ministerial National Council for RDI,<sup>2</sup> to appoint NASR as the executive secretariat of this Council, thus reporting directly to the PM, while keeping its existing position in the Ministry of Education, Research, Youth and Sports.

In addition, what is recommendable for NASR to be able to live up to its responsibilities and work load, is to opt for a more flexible organisation model. I.e., to decentralise the responsibility of hiring additional human resources to NASR, and to make more use of contractual workers instead of civil servants whenever there are activity peaks (e.g. caused by project evaluations).

Another (geographical) organisational issue is the fact that NASR exerts insufficient territorial coordination with regard to RDI development. Several regions have developed Regional Innovation Strategies, but these are not related among themselves and neither with the NP II for RDI 2007-2013 coordinated by NASR. This calls for a stronger interaction between NASR and the regions. Especially since NASR's mandate includes the task "to stimulate regional and local development". In fact, at present the role that NASR plays in spurring innovation potential at regional level is rather limited. Also, there is not so much interaction and synergy between NASR's central/national acting, on the one hand, and the grassroots initiatives in the various regions, on the other. This is a missed opportunity that should be turned around. A final recommendation in this regard is to reorganise or build NASR's territorial office network more pronouncedly on the basis of entities with a more outspoken market embeddedness and responsiveness profile. For instance, by including more innovation relay centres and poles of excellence/competitiveness.

<sup>2</sup> Take note that this council should then de facto replace the former National Council for Science and Technology Policy, which was not an advisory council, but an inter-ministerial strategic council for RDI. However, this council did not really get off the ground.

## 2.3. NASR's monitoring and finance allocation procedures

**Objective:**

To avoid suboptimal use of public funds, to make sure the best performing R&D bodies are supported and that awarded applications are well carried out, it is important that solid checks and balances are devised and applied.

This means that systematic and methodologically sound evaluation and screening practices should be put in place and applied (prior to awarding), but also regular progress evaluations ("monitoring").

Whether this is currently the case or not and what can be improved in that regard is the subject of the current paragraph.

When looking at the main grant competitions that NASR manages; NP II, SOP IEC and CEEX, it can be established that they are similar in scope and in terms of goals.

Nevertheless, content-wise (forms, criteria, etc.) the evaluation and awarding procedures for these programmes are quite different when applying for these 3 programmes. One reason for this is arguably the fact that they are managed by different program managers (NASR, CNMP, AMCSIT, UEFISCSU).

Consequently, a harmonization of the application and evaluation procedures to be followed for (the respective action lines of) NP II and SOP IEC is recommendable. This ought to increase considerably the transparency, comprehensiveness, and user-friendliness for applicants and efficiency for evaluators when reviewing applications.

At the same time, there is a need to align the criteria used for the attestation and accreditation systems with the ones used in proposal evaluation and in performance monitoring flow, as they are currently insufficiently in line and coherent with each other. One weakness is in this regard the overly science-oriented criteria that dominate in (some parts of) the flow. See e.g. requests for:

- Number of scientific publications,
- Number of patents generated,
- Products and technologies resulting from research activities,
- Studies resulting from research and development activity,
- Professional prestige indicators.

Instead, we advise to put more emphasis on criteria that focus on prospective outcomes from research, like:

- Contribution of project to programme objectives,
- Economic relevance,
- Market responsiveness and interaction with business sector,
- Expected impacts from project.

The previous criteria are at present especially influential for awarding project applications under SOP-IEC. We recommend taking such criteria also further into account for NP II proposal evaluations, as well as for attestation and accreditation procedures (with regard to R&D institutions), and for progress monitoring on awarded projects. Similarly, and in line with our proposal to increase harmonization of the application and evaluation procedures, we propose that SOP-IEC should be used as the point of reference to lead the way.

A further issue that should be considered in order to come to a level playing field among contenders for funding is the abolishment of the practice that attested and accredited R&D organisations gain extra points in grant competitions on the basis of their organisational/institutional attestation or accreditation "score". This practice not only distorts competition in general, but it is also illogical from the point of view that at present the criteria for attestation or accreditation of R&D organisations are not necessarily at par with the programme objectives to which proposals should adhere.

Furthermore, the monitoring of awarded projects and granted beneficiaries on progress and actual performance and impacts should be done in a more systematic and severe way. Notably, as the present monitoring procedures are rather light and not very intensive. A more rigorous follow-up is advisable, therefore. The same goes for summative impact assessments on projects at the end of their lifetime.

As regards the experts carrying out proposal evaluations (and the monitoring on progress and impacts stemming from awarded projects and beneficiaries), it would be good to extend the use of foreign experts -as is already done for SOP-IEC- across the board. This can help to avoid situations in which domestic evaluators have links with or (dis)interests in certain proposals, which can compromise their impartiality. Also, it can help to overcome the problem of an eventual shortage in skilled evaluators on the domestic Romanian market.

In brief, we propose six measures to improve the monitoring and finance allocation procedures as practiced by NASR:<sup>3</sup>

1. conduct proposal evaluations in a more severe and relevant way: strictly sticking to the criteria that matter; criteria that should be clear and un-interpretable up front,
2. harmonize criteria for proposal evaluation across grant programmes (notably NP II and SOP-IEC) to raise efficiency and user-friendliness,
3. conduct regular and meaningful monitoring activities on progress and impacts generated by awarded projects and R&D organizations,
4. extend the use of international/foreign experts for proposal evaluation and project monitoring,
5. align attestation/accreditation criteria of R&D organisations with evaluation criteria applied for NP II and SOP-IEC proposals in order to increase the relevance of attestation and accreditation from a societal and programming perspective,
6. abolish the favouring of attested/accredited R&D organisations when applying for NP II or SOP-IEC.

<sup>3</sup> See roadmap barrier 3a for more details on the above-indicated measures 1-4 and roadmap barrier 3b for more information on the above-indicated measures 5-6.

## 2.4. Capacities and performance of Romanian R&D organisations

### Objective:

Determine on the basis of a sample of 40 Romanian R&D organisations, the strengths and shortcomings of public R&D centres in terms of research capacities, tendering abilities, performance in implementing granted projects duly, and their potential to create spill-overs to the business sector.

Following the identification of a sample of prominent R&D organisations in Romania (based on their success rates in applying for grant competitions managed by NASR), the sampled organisations were submitted to a capacity and performance scan on the basis of the following criteria:

- In-house R&D resources;
- Responsiveness to market demands;
- Orientation on applied R&D;
- Socio-economic impacts of R&D activities;
- Transfer of knowledge and technology between R&D organisation and business/education realm;
- Track record regarding participation in (inter)national tendering procedures;
- Ability to apply for EU funding for R&D and to implement granted projects duly

This led to the following insights:

### As regards the landscape of R&D organisations in Romania:

- The landscape of R&D organisations is very vast, which means that on average the slice per R&D organisation of the total funding cake is also small. This raises the question whether the R&D landscape would benefit from some weeding out.
- A considerable share of the public R&D budget is distributed via a programme called Nucleus to which only NASR- and Ministry-affiliated R&D centres and institutes can access. This implies that the Nucleus programme favours the existence and functioning of certain national R&D centres and institutes, and thus contributes to sheltering practices. Consequently, this practice prevents –through a partial obstruction of open competition for R&D budgets– a shaking out of the least performing or least societally relevant R&D organisations. In fact, even if the money that is distributed via the Nucleus programme is well spent and well deserved by the R&D institutes receiving it, the process as such suffers from a lack of transparency and “meritisation”. Finally, as the same organisations that can apply for the Nucleus programme can also apply for the NP II action line on “Capacities”, it means they have more chances to build up institutional capacities and infrastructure, and this implies a double advantage. One: since it provides double chances to upgrade their capacities. Two: because capacity underpins and improves the possibility to carry out research assignments and thus raises the chances in grant competitions.

The above observations support the impression that there is a need for more critical and systematic evaluation of research institutes and proposals by means of experienced, professional and impartial evaluation experts (e.g. foreign ones): see § 2.3. If such a process is not set in motion, there is a risk of conserving a status quo with a multitude of R&D organisations covering an extensive, but perhaps unnecessarily vast, domain of R&D centres and activities. This can also hamper the rise and growth of (critical mass at) centres of excellence and of R&D institutes with promising (international) market perspectives. Therefore, if one does not let competitive forces do their work more actively, it is difficult to unleash a process where the most significant budgets will end up there where they will produce the most beneficial impacts. This is also an argument in favour of having R&D organisations and proposals compete on merits via grant programmes –without competition distortions via attestation/accreditation “fast-tracking”<sup>4</sup>- and to “enforce” granting based on regular and meaningful monitoring.

Another argument in favour of a concerted survival of the fittest is that if there are limited means and there are differences in the societal value of NASR- and Ministry-affiliated R&D centres and institutions, the R&D system would benefit from a restructuring based on a targeted prioritising of R&D domains that offer the highest societal value of research within the Romanian context (looking at the R&D needs of business and society and taking into account the industries where Romania offers the best prospects).

As regards the assets, capacities and size of R&D organisations:

Many R&D organisations do not dispose of critical mass and they often have only small research staffs, limited budgets, infrastructure and equipment. Another typical feature of the Romanian R&D landscape are large scale organisations where only a fraction of the (human) resources is devoted to R&D (notably universities and hospitals). From these observations, the following can be concluded:

- There are several large entities that shelter islands of excellence. This means that quality and capacity do not necessarily go hand in hand as “size” is just a façade. This prevents to reveal cases in which research entities are actually a lot less developed than their “mother organization” leads one to conclude, and in need of further capacity building (in all kinds of directions) since the resources available at the level of the mother organisation are not per se available to the R&D staff and are perhaps not even used for research purposes at all. This also implies that attestation or accreditation should be done at the level of R&D units and not for organisations as a whole, if the rest of the organisation is not at the disposal of the R&D unit.
- There is substantial difference between the research vocations displayed by R&D organisations. On the one hand, there are organisations that are true generators of R&D. On the other, there are R&D organisations that are more applicators than generators of research. The impression reigns that the latter form the majority and that they are merely involved in the downstream part of the research chain, namely in the development of innovative applications of

<sup>4</sup> This refers to the fact that nowadays attestation and accreditation gives “bonus” points to organisations that participate in grant competitions (see also on p. 4).

external R&D outputs. Although they engage in new product (and market) development, and arguably their activities might on some cases lead to new practices and techniques to be applied by others, their activities cannot be seen as true R&D.

As regards tendering abilities:

In spite of the fact that all R&D organisations screened counted with some remarkably successful application to NP II or SOP-IEC (and or high score for attestation/accreditation), the average success rate of applications to grant competitions is rather low, pointing at limited tendering skills and qualities. This is especially apparent when zooming in on experiences with competing for international grants.

As a consequence, Romanian R&D organisations rely heavily on national R&D grant competitions. This can be illustrated by the fact that the budget share for R&D that stems from European sources is rather small (+/- 15% versus some 85% for national public funding sources).

In line with the modest EU share of Romanian R&D activities, from 2002 to 2008 Romanian appliers to FP funds obtained on average 9.27% of the EC contribution requested. This is considerably lower than the average EU score on this indicator, which was 17.66% from 2002 to 2008. Similarly, some 14.4% of the Romanian R&D organisations that participated in FP proposals between 2002 and 2008 saw their proposals being awarded, compared to an EU average of 20.68% for the same period.

The former indicates a lack of readiness on behalf of Romanian R&D organisations to apply for EU funding for R&D. What is especially striking in this regard, is the fact that the CEEX programme -which is meant to prepare Romanian R&D organisations for FP7 competitions- has a higher budget (and thus cost) than the amount of money that Romanian R&D organisations can be expected to reap from FP 7 between 2007 and 2013. Consequently, we conclude that the CEEX programme does not produce the intended leverage or multiplier effect.

Apart from a sub-optimal impact from CEEX on tendering capacities of Romanian R&D actors, there are other factors that underlie the weak tendering results of Romanian R&D actors in Europe:

- lack of international visibility of many Romanian R&D centres and researchers; limited linguistic and liaising skills, lack of international networks
- having to compete with limited resources (low budgets for research, reduced amount of personnel, under-investment in infrastructure)
- often an absence of dedicated staff or a clear responsible for marketing and acquisition activities and for developing broader tendering capacities, which increases the risks of missing out on funding opportunities beyond traditional captive markets

Consequently, for many R&D organisations there is a clear need to become better trained, skilled and supported in view of tender preparation (and implementation). Possible solutions would be by organising specialised teams internally or by working

together with specialised advisors to support them in proposal elaboration and project implementation and management. In addition, Romanian R&D actors need to improve their networking, project management and research skills in order to position themselves more successfully in winning consortia and in order to be an attractive partner to work with in transnational consortia.

As regards applied and market-oriented character of RDI activities:

The degree of cooperation between R&D institutes and industrial partners is underdeveloped in Romania. The share of turnover that R&D centres obtain from contracts with market actors is generally low. Many R&D centres declare to be ready and able to service market parties with research, but very few of them have substantial experience with working for private businesses. Also, the amount of spin-offs (business creation following research activities) that are declared is fairly small and only a few R&D centres argue that they exert agglomeration effects on businesses and other organisations.

Several reasons can be forwarded to explain this phenomenon.

- There is insufficient marketing and exposure of R&D organisations towards the business community. Little effort is undertaken to reach out to the market sector. This is fuelled by the traditional orientation on capturing public funding for R&D and by a general lack in tendering and project acquisition capacities (see before).
- The service palette offered by R&D organisations is not always in line with business needs (the services concentrate strongly on the “R”-side (= research), and there are less that pertain to the “D” stage (= development) where actual product, process or market development takes place). In fact, most activities have a fundamental and applied Research character, without really being Development-oriented or market-driven. Take note that also applied research is not necessarily market driven or market responsive or (directly) market applicable and thus interesting to business.

For activities of R&D organisations to become more relevant to business, one obvious recommendation is to work more together, either in cooperation on joint projects or in supplier-customer relationships. This can also be fostered through the inclusion of corresponding criteria for public R&D grant competitions programmes and through opening up more possibilities for public-private partnership proposals under public R&D grant competitions (f.i. this appears not to be the case for SOP-IEC Axis 2 Infrastructure). Furthermore, it is a matter of reflecting on the kind of services to be offered by R&D organisations. I.e., see what is relevant when taking into account the needs and requests from potential private users of R&D organisations (a “market investigation”). Also a marketing and awareness raising campaign to put R&D organisations more on the radar of private businesses can help to bring both sectors together.

The former observations also question whether a supply side approach towards RDI development (i.e. to upgrade the R&D capacities of research centres) is sufficient, and whether it should be complemented by demand side initiatives to raise the consumption of RDI activities (i.e. to make private businesses demand more assistance from research centres for product innovation and development)? In fact,

as a consequence of the lack of innovation and R&D culture among Romanian companies, the supply side (R&D organisations and their service offer) is not the only problem in play. Also the demand side; the business system as a potential user of R&D centres and their services, is a problem factor. As most companies in Romania (still) compete on costs and a lot less on innovation, they do not call a lot upon services that support product and process innovation. This demand should be stimulated and R&D organisations can offer various (low threshold) services or modalities to companies to raise their interest in innovation. For instance, they can help companies to spot relevant foreign technology for their market activities and help them to licence and or adjust foreign technology to their own needs and purposes. Also, they can assist companies with primary and original research ventures. This can e.g. be supported by an innovation voucher scheme that incites private actors to find their ways to R&D centres. This will also be beneficial for the (mutual) approach between the research community and the industrial community. For that purpose, also an awareness raising campaign among businesses to compete more on innovativeness is indicated. This should be done also in a more strategic way, in cooperation with other Ministries and stakeholders of economic development. In this regard, the elaboration of an overall demand-driven Innovation Strategy or Master Plan (NP 3?) seems useful as well.

## 2.5. Feasibility check on performance labelling system for R&D organisations

**Objective:**

Assess whether, besides or in substitute of the existing available evaluation tools, the introduction of a performance labelling system adds value and is feasible.

Technically speaking, a performance labelling system for RDI organisations can be conceived and implemented without too much problems. As far as stakeholder support for such a labelling system, we have observed substantial interest in labelling RDI organisations according to their performance.<sup>5</sup>

However, what is most crucial and pertinent is the set-up of a systematic and critical evaluation and monitoring process beneath it.

In line with the former, the question is not so much whether introducing a performance labelling system in Romania is feasible. Instead the key issue is how to ensure that conditions can be put in place that ensure that differentiated labelling is in line with real performance and potential of RDI organisations and their contributions to strategic and programmatic RDI goals in Romania (or grant research funding and or attestation and accreditation predicates in function of contrasted performance, potential and strategic and programmatic RDI goals in Romania of RDI organisations)?

<sup>5</sup> In general, the discussions held with most Romanian stakeholders in the R&D system (NASR and R&D organisations) indicated a great interest in labelling. Only on behalf of the SME federations there was less enthusiasm. There, there was a fear that the system could not be properly administered after a while and that one would return to zero after a while.

This issue has been dealt with under § 2.3, but for the sake of the argument it goes that relevant (“quality”) criteria are applied and that R&D organisations are seriously tested on them. Furthermore, it is important that evaluation, monitoring and eventual labelling is conceived as an interrelated and continuous process, through which R&D organisations’ problems can be detected and remediated by providing corresponding support.

To oversee and centralise the outcomes of such evaluation, monitoring (and labelling) activities, they should be kept in a publicly consultable database to enhance transparency on performance records and to stimulate performance improvement on behalf of RDI organisations.

Establishing an autonomous quality assessment/labelling body (independent of the granting authority/ies), which will have as responsibilities to interpret the performance records stored in the database (and to eventually assign labels to RDI organisations in function of their performance profiles) is then indicated.

This database on RDI organisations’ performance (and the assigned labels to RDI organisations) can then also be used by granting authorities to provide specific support to RDI organisations in order to improve their performance and potential.

In brief, the evaluation and monitoring of RDI organisations to underpin eventual labelling systems and grant decisions alike, should be based on the following cornerstones:

- Judge whether the activities of R&D centres and the research topics on which they work represent an (inter)national societal interest (e.g. contribute to strategic and or programmatic RDI goals of Romania), and have a market-oriented and applied character to ensure that public RDI funding will have a beneficial impact on Romania’s competitiveness and state of innovation;
- Identify eventual shortcomings and weaknesses in the activities, methods, skills and assets of R&D centres;
- Issue recommendations on the R&D areas that are relevant to Romania’s competitiveness and innovation state;
- Issue recommendations to overcome shortcomings and weaknesses in terms of the activities, methods, skills, assets and services provided on behalf of Romanian R&D centres.

The monitoring on proposal performance and on overall functioning of R&D organisations should thus serve the improvement of their capacities and qualities in an ongoing manner. The monitoring system can also serve to assist R&D organisations in improving their service offer, level and delivery performance. Provided the results of monitoring processes are publicly accessible, it would also help private companies or public organisers of grant companies in finding their way quicker to promising / interesting parties. It will also help to show the way to the best in class in a specific field.

The scores or marks obtained via monitoring can also be used to develop a database where R&D organisations can benchmark their performances to those of others. The

public (at least for R&D organisations) accessibility to such a database is also seen as key to embark on a continuous improvement journey of RDI organisations.

The rigour of the evaluation procedures behind any management system for (financing activities of) RDI actors is key to being able to upgrade the R&D system in Romania as such. For this, independent and transparent evaluations (supported by professional/international evaluators, due sets of criteria, systematic and severe measuring and public availability of results) are crucial to whatever form of certification, labelling, and or monitoring system. Without rigorous and objective screening and checking of affirmed qualities, any system intended to judge organisations on their merits and demerits, to attribute labels (and to assign budgets) is doomed to function imperfectly and runs a high risk of distorting competition.

This implies that the value of a label (or for that matter: an attestation or accreditation) depends on the review procedures behind it. Therefore, ensuring the severity and objectivity of that review system is what is in play and should be at the centre of policy attention. Moreover, designing and introducing a new labelling system can even be redundant to the attestations and accreditations following from the existing (or improved –according to the proposals issued in this report) evaluation systems, and can cause confusion and evaluation tiredness among final beneficiaries of R&D programmes.

### 3. Roadmap

**Providing a roadmap in view of enhancing Romania’s RDI potential and a knowledge-based and competitiveness-oriented economy**

The basis for the roadmap is the identification of barriers that obstruct a more efficient management and development of the RDI sector in Romania and a ditto functioning of R&D organisations in Romania at the service of a knowledge-based and competitiveness-oriented economy.

Consequently, the roadmap consists of a number of recommendations to overcome such barriers in a number of crucial areas. These areas have been determined on the basis of the research undertaken in view of Tasks 1-8 of the present assignment (see separate report), an interactive workshop with stakeholders discussing the study results (in Bucharest, 3/11/09) and exchanges of views with the commissioning authority of the present assignment (DG REGIO of the EC).

The ultimate objective of the road map is to propose actions to be undertaken to overcome the identified barriers.

In the following we present such recommendations accompanied by a corresponding time frame, responsible actors for undertaking the activities in question and identification of other actors to be involved (to be consulted, to be asked for contributions or support) in the respective activities.

<b>Barrier #</b>	
Recommendation	
Stakeholders	
Time frame	

<b>Barrier 1</b>	<b>Complex and fragmented institutional framework reducing NASR capacity to act as unitary coordinator of RDI in Romania</b>
<b>Recommendations</b>	<p><b>Goal(s):</b></p> <ol style="list-style-type: none"> <li>1. A unitary coordination of RDI activities undertaken by Romanian public research organizations: universities, national institutes, institutes of the Romanian Academy and other branch academies and public research institutes.</li> <li>2. A strong and central actor behind the strategy formulation, implementation, management and enforcement of RDI policy in Romania.</li> <li>3. A reduced overlap between / less fragmentation of responsibilities in the management of RDI programmes and a simplified and streamlined actor landscape for the management of these programmes</li> </ol> <p><b>Proposed actions:</b></p> <ol style="list-style-type: none"> <li>1. Render more power to the coordinative agency to be appointed (e.g. NASR) in view of aligning sectoral R&amp;D plans of different Ministries into an overall national approach to RDI. I.e., the coordinative agency (e.g. NASR) should install time checks (ex ante evaluate on objectives, principles and content) and means to supervise the compatibility of individual plans with the global RDI strategy for Romania<sup>i</sup> and to play a guardian role throughout the programmes life cycle (“enforcement” and “monitoring” on outcomes, conduct formative and summative evaluation –see also Barrier 3a).<sup>ii</sup> To achieve this an appropriate action would be to:             <ol style="list-style-type: none"> <li>a. Either put NASR under the coordination c.q. subordination of the Prime Minister or -as an alternative- recreate and empower the inter-ministerial National Council for RDI, to appoint NASR as the executive secretariat of this Council, thus reporting directly to the PM, while keeping its existing position in the Ministry of Education, Research, Youth and Sports. This would create better opportunities to strengthen and integrate the RDI policies and strategies undertaken by various policy actors in Romania, and their corresponding funding.<sup>iii</sup></li> <li>b. To design an overarching Master Plan (NP 3?) or set of guidelines that provides direction to RDI plans irrespective of whether they are initiated and managed by the coordinative agency (e.g. NASR)</li> </ol> </li> <li>2. Provide the RDI coordinative body (e.g. NASR) with the necessary sovereignty and resources (human, financial) to carry out its mandate and responsibilities from a longer term perspective.</li> <li>3. Set up a more articulated dialogue and interaction between the coordinative agency (e.g. NASR) and Ministries with own R&amp;D plans.</li> <li>4. Place RDI programme and project management responsibilities either into the hands of a single body or in case of maintaining the use of multiple bodies (AMCSIT, CNMP, UEFISCSU, ...) unify the procedures used (see also Barrier 2).             <ol style="list-style-type: none"> <li>a. Ideally, the coordinative agency (e.g. NASR) should be the primary (or only) path-setting actor here.</li> </ol> </li> </ol>
<b>Stakeholders</b>	<p><b>The operationalisation and implementation of the actions in this area should be prepared by a task force (TF)<sup>iv</sup> composed by:</b></p> <ul style="list-style-type: none"> <li>○ NASR (lead actor)</li> <li>○ MERI</li> <li>○ Cabinet or Ministry of the Prime Minister</li> <li>○ Ministry of Economy, Trade and Business Environment</li> <li>○ Ministry of Regional Development and Housing</li> <li>○ A selection of professional business associations<sup>v</sup></li> </ul>

<b>Barrier 2</b>	<b>Double functions and responsibilities for managing R&amp;D programmes and applications inside NASR (or by organisations seconded to NASR for the sake of NP II)</b>
<b>Recommendations</b>	<p><b>Goal(s):</b></p> <ol style="list-style-type: none"> <li>1. Simplify and streamline the internal organisation of the coordinative agency, e.g. NASR (in terms of constituting DGs and Directorates as well as attached bodies like AMCSIT) and the responsibilities that are placed under its wings, to avoid overlap and redundancy and abolish the internal compartmentalization of functions.</li> </ol> <p><b>Proposed actions:</b></p> <ol style="list-style-type: none"> <li>1. Organise functions, related to the management of RDI grant programmes and evaluation of applications, horizontally rather than duplicating them across different DGs, Directorates and attached bodies.</li> <li>2. Set up a central or overarching evaluation unit that serves to evaluate applications and projects to all RDI grant programmes and assists all DGs/Directorates in their programme and project management tasks. I.e., in view of higher efficiency, scale economies and uniformity in evaluation and monitoring activities<sup>vi</sup>.</li> <li>3. Provide specialised training to the staff of the coordinative agency (e.g. NASR) in order to consolidate and build expertise and capacity inside the agency for managing RDI grant programmes instead of using exterior and/or subordinated management bodies for this.<sup>vii</sup></li> </ol>
<b>Stakeholders</b>	<p><b>The operationalisation and implementation of the actions in this area should be undertaken by a task force (TF)<sup>viii</sup> consisting of:</b></p> <ul style="list-style-type: none"> <li>○ NASR (lead actor)</li> <li>○ MERI</li> <li>○ AMCSIT</li> </ul>

Barrier 3a	<b>Incoherence between criteria sets used for application, evaluation and monitoring procedures regarding resp. RDI programmes and underlying action lines (notably NP II and SOP-IEC)</b>
Recommendations	<p><b>Goal(s):</b></p> <ol style="list-style-type: none"> <li>1. Align and harmonize the set of criteria and procedures for application, evaluation and monitoring of grant awarding programmes             <ol style="list-style-type: none"> <li>a. to provide more transparent and efficient application, evaluation and monitoring modalities to both applicants and evaluators</li> <li>b. to sustain the Romanian RDI policy priorities in a more effective and targeted way via the funding of “in-line” projects</li> </ol> </li> </ol> <p><b>Proposed actions:</b></p> <ol style="list-style-type: none"> <li>1. Streamline evaluation criteria and granting protocols and modalities of running and upcoming RDI grant programmes (and action lines per programme) by:             <ol style="list-style-type: none"> <li>a. basing them more pronouncedly on strategic and programmatic RDI objectives in Romania</li> <li>b. placing a stronger emphasis on criteria that stimulate societally relevant, market responsive and competitiveness/business-oriented RDI</li> <li>c. reducing the weight of scientific/academic criteria in proposal and project evaluations (compared to the current practice under NP II and SOP-IEC).</li> </ol> </li> <li>2. Install and apply systematic and methodologically sound evaluation and screening practices:             <ol style="list-style-type: none"> <li>a. under the guidance / responsibility of a central or overarching evaluation unit (e.g. inside the ultimate coordinative body, like NASR -see Barrier 2).</li> <li>b. supported by (contractually / temporarily hired) professional evaluators. Either domestic or foreign ones (as regards involving evaluators from abroad: issue a stronger call on Romanian evaluators residing outside of Romania (“expatriates”).                 <ol style="list-style-type: none"> <li>i. building a local community of skilled and professional evaluators, e.g. by stimulating them to participate at EU level in project and programme evaluations and expert committees; and by cooperating with EVALROM – the Romanian association of professional evaluators.</li> <li>ii. applying more severe and to-the-point criteria for assessing the capabilities of evaluation experts (more rigour into the selection procedure)</li> </ol> </li> </ol> </li> <li>3. Undertake regular progress monitoring with regard to awarded projects and beneficiaries of grant allocations (see also Barrier 2). Also to allow detecting points for improvement at beneficiaries of funding and providing corresponding support. To this end:             <ol style="list-style-type: none"> <li>a. Undertake progress reviews and site visits in relation to running projects conducted by knowledgeable evaluation experts. Monitor e.g. on:<sup>x</sup> <ol style="list-style-type: none"> <li>i. Contribution to programme and project objectives (notably in terms of outcomes and impacts on business competitiveness and e.g. quality of life)</li> <li>ii. Efficiency and effectiveness of projects with regard to pursuing objectives</li> <li>iii. The R&amp;D capacities on behalf of grant beneficiaries (following e.g. scale and quality indicators)</li> <li>iv. To what extent the projects produce structuring effects among the (inter)national RDI community and with the business sector and wider society (i.e., outreach, networking and inclusion)</li> <li>v. To what extent the projects contribute to territorial cohesion and equity (e.g. levelling regional disparities)</li> </ol> </li> </ol> </li> </ol>

	<ul style="list-style-type: none"> <li>b. Make the outcomes of such monitoring activities available or consultable via a public database. One, to incentivise RDI to improve their performance, and two, for public and private parties interested in assigning research activities to RDI institutes to have the possibility to compare between available actors.</li> </ul> <p>4. Undertake meaningful formative and summative impact assessments on projects at the end of their lifetime (see also Barrier 2):</p> <ul style="list-style-type: none"> <li>a. Record the outcomes of such impact assessments also in a publicly consultable database. Again, both to incentivise RDI to improve their performance, and for public and private parties interested in assigning research activities to RDI institutes to have the possibility to compare between available actors.</li> <li>b. The joint data from intermediate monitoring exercises and end-of-life assessments can then also be used to eventually issue quality labels to RDI organisations according to their sectors or domains of activity, which will further allow RDI organisations to benchmark their performances to those of others. This will also help in presenting success stories which can be presented to the public opinion as results of RDI funding (and as such fulfil a PR function).</li> </ul>
<p><b>Stakeholders</b></p>	<p><b>The operationalisation and implementation of the actions in this area should be prepared by a TF<sup>x</sup> composed by:</b></p> <ul style="list-style-type: none"> <li>○ NASR (lead actor)</li> <li>○ External/foreign experts in evaluation matters</li> <li>○ Innovation Council</li> <li>○ Advisory Board for Research, Development and Innovation</li> <li>○ Professional Bodies, e.g. unit of evaluators or professors</li> <li>○ Representatives of user community of RDI centres (e.g. Romanian Centre for SMEs)</li> </ul>

<b>Barrier 3b</b>	<b>Incoherence between criteria sets used for attestation/accreditation procedures, on the one hand, and for grant awarding procedures and decisions, on the other.</b>
<b>Recommendations</b>	<p><b>Goal(s):</b></p> <ol style="list-style-type: none"> <li>1. Establish a logical and aligned flow between attestation/accreditation procedures of R&amp;D organisations and grant awarding decisions. Notably in view of sustaining Romania's RDI policy priorities and establishing a level playing field among RDI organisations for the application to grant competitions</li> </ol> <p><b>Proposed actions:</b></p> <ol style="list-style-type: none"> <li>1. Align the criteria used for the attestation/accreditation procedures and for the proposal evaluation/grant allocation procedures by:             <ol style="list-style-type: none"> <li>a. Interrelating the resp. criteria sets and have them follow more directly from parameters and indicators that are in line with strategic and programmatic RDI objectives in Romania</li> <li>b. Placing a stronger emphasis on criteria that stimulate societally relevant, market responsive and competitiveness/business-oriented RDI</li> <li>c. Reducing the weight of scientific/academic criteria in attestation / accreditation procedures.</li> </ol> </li> <li>2. Apply attestation or accreditation procedures at the level of those R&amp;D units inside research organisations that are the actual conductors of R&amp;D projects and not at the level of research organisations as a whole, thus allowing:             <ol style="list-style-type: none"> <li>a. The creation of a database that allows to categorize and compare R&amp;D units in Romania according to themes and not a general collection of R&amp;D institutions with a mixed background in research disciplines and or all-round profiles (e.g. universities)</li> <li>b. The avoidance of situations in which accreditation / attestation is based on the points obtained by one R&amp;D unit inside a larger institution, and then allow other R&amp;D units from the same institution to benefitting from those accreditation / attestation points.</li> </ol> </li> <li>3. Decouple the attestation/accreditation of organisations from obtaining points on evaluation criteria for NP II or SOP-IEC Axis 2 proposals: do not grant bonus points to attested/accredited organisations due to their mere attestation/accreditation</li> <li>4. Install and apply a verification system of the academic credentials presented –as far as such criteria are retained for attestation/accreditation, e.g. by means of a peer review body or a central or overarching evaluation unit (see Barrier 2):             <ol style="list-style-type: none"> <li>a. To check on the validity of presented academic credentials (f.i. congress presentations should not get the same scores as publications in internationally highly cited and refereed journals, or the influence of a scientific committee to which an academic can be affiliated)</li> <li>b. To assess the usefulness of patenting as an indicator for attesting/accrediting organisations (for certain R&amp;D activities and sectors this is not really applicable and or relevant)</li> </ol> </li> </ol>
<b>Stakeholders</b>	<p><b>The operationalisation and implementation of the actions in this area should be prepared by a TF composed by:<sup>xi</sup></b></p> <ul style="list-style-type: none"> <li>○ NASR (lead actor)</li> <li>○ Innovation Council</li> <li>○ Advisory Board for Research, Development and Innovation</li> <li>○ Professional Bodies, e.g. unit of evaluators or professors</li> <li>○ Representatives of user community of RDI centres (e.g. Romanian Centre for SMEs)</li> </ul>

<b>Barrier 4</b>	<b>Lack of coordination between and integration of regional and national actions to foster RDI</b>
<b>Recommendations</b>	<p><b>Goal(s):</b></p> <ol style="list-style-type: none"> <li>1. Foster regional RDI initiatives and valorise regional innovation potential in Romania</li> <li>2. Enhance the ability of Romanian regional actors to tap into Structural Funds for innovation support from 2013 onwards.</li> <li>3. Strengthen the coordination of and supervision on the use and destination of Structural Funds to reach regional cohesion objectives.</li> </ol> <p><b>Proposed actions:</b></p> <ol style="list-style-type: none"> <li>1. Establish a unit/department inside the coordinative agency for RDI policy (e.g. NASR) and make it responsible for stimulating regional and local RDI activity (e.g. subordinated to/coordinated by the current DG Technology Transfer and Infrastructures inside the current NASR).</li> <li>2. Elaborate a concrete (multi-annual) action plan for cooperation between the coordinative agency for RDI policy (e.g. NASR) and the Regional Development Agencies in order to foster RDI at regional level.</li> <li>3. Improve the coordination between the National Plan for RDI 2007-2013 and Regional Innovation Strategies to exploit complementarities and synergies between regions in a better way and to better ensure that regional strategies are in line with the national strategy (top-down surveillance of regional RDI strategies and plans).</li> <li>4. Build the territorial office network of the coordinative agency for RDI policy (e.g. NASR) more on the basis of instances that are close to the market (stronger inclusion of e.g. incubator centres, cluster organizations, innovation relay centres, EEN, poles of excellence / competitiveness, instead of overly reliance on university contact points).</li> <li>5. Stimulate the regional branches of the coordinative agency for RDI policy (e.g. NASR) to locally foster more market-oriented RDI and to act as a bridge between R&amp;D and the local business market (e.g. by sparking demand for R&amp;D from businesses and help in technology transfer and spin-off creations with the support of EEN and similar intermediary structures) rather than only act as an administrative check / contact point for sending documents to NASR.</li> <li>6. Consolidate the regional offices of the coordinative agency for RDI policy (e.g. NASR) to leverage the development of regional innovation strategies in close partnership with the local authorities.</li> <li>7. Proactively assist, rather than reactively, the Romanian regional actors in applying to Structural Funds for innovation support from 2013 onwards</li> </ol>
<b>Stakeholders</b>	<p><b>The operationalisation and implementation of the actions in this area should be prepared by a TF composed by:</b><sup>xii</sup></p> <ul style="list-style-type: none"> <li>○ DG Technology Transfer and Infrastructures (lead actor) ∈ NASR</li> <li>○ Innovation Relay Centre/EEN/RENNIT representatives</li> <li>○ Managers of clusters, national growth poles, poles of excellence, competitiveness poles/initiatives</li> <li>○ Ministry of Regional Development and Housing</li> <li>○ Councils for Regional Development and Regional Development Agencies</li> <li>○ Managers of Science and Technology Parks, Business and Technology Incubators, Centres for Technology Transfer, Centres for Technological Information, Offices for liaising with industry</li> </ul>

<b>Barrier 5</b>	<b>Underperformance of Romanian RDI actors when applying to EU programmes</b>
<b>Recommendations</b>	<p><b>Goal(s):</b></p> <ol style="list-style-type: none"> <li>1. Improve the international networking and liaising skills of Romanian R&amp;D community</li> <li>2. Enhance the success rate of Romanian applications to EU RDI programmes</li> </ol> <p><b>Proposed actions:</b></p> <ol style="list-style-type: none"> <li>1. Design and implement a multi-annual action plan to prepare the Romanian R&amp;D community in a better way for participation in EU programmes             <ol style="list-style-type: none"> <li>a. This plan should include the provision of training on:                 <ol style="list-style-type: none"> <li>i. proposal writing</li> <li>ii. (European) project management, reporting and administration techniques</li> <li>iii. dealing with Intellectual Property Rights</li> <li>iv. financial management</li> <li>v. “technical” English</li> </ol> </li> <li>b. Similarly, plan should also:                 <ol style="list-style-type: none"> <li>i. foresee ways to raise the awareness of and provide assistance to Romanian R&amp;D organizations to foresee organizational capacities and structures in order to obtain more success in European research programmes. I.e. by appointing specialised departments or staff within organisations and developing a coherent and mid- to long-term internationalization strategy</li> <li>ii. prepare for the development of “R&amp;D platforms” for joint international tendering. I.e., by mapping available actors (researchers and organizations) in Romania that can join forces and place such data into a database with all R&amp;D actors. Also to improve communications and learning from each other</li> <li>iii. identify and select key R&amp;D areas where Romania can present and or develop itself into a European champion<sup>xiii</sup></li> </ol> </li> <li>c. Promote the external visibility of the Romanian R&amp;D community further, notably vis-à-vis European counterparts and help this community towards more cooperation with European partners and participation in European R&amp;D consortia. E.g. by:<sup>xiv</sup> <ol style="list-style-type: none"> <li>i. Disseminating EU RDI programme calls for proposals among the Romanian R&amp;D community at an early stage (e.g. via emailing lists, NASR website, call info days, and other channels: NCPs, EEN...)</li> <li>ii. Assist researchers from other countries to discover R&amp;D partners in Romania</li> <li>iii. Identify and attract expatriate Romanian researchers to invest in or contribute to setting up research infrastructure, labs and equipment (see if possibilities for this via NP II / SOP IEC can be valorised) as well as stimulate partnerships and cooperation with Romanian RDI organisations</li> <li>iv. Support and train Romanian researchers to access evaluator positions for European project applications and to get more Romanians in evaluation committees</li> <li>v. Provide support and training to the National Contact Points (NCPs) to improve the quality and quantity of their services<sup>xv</sup></li> </ol> </li> </ol> </li> </ol>

<b>Stakeholders</b>	<p><b>The operationalisation and implementation of the actions in this area should be undertaken by:</b></p> <ul style="list-style-type: none"><li>○ ROST and the Directorate General International Cooperation and European Integration (as lead actors)</li><li>○ NASR</li></ul> <p><b>With support from and upon consultation with:</b></p> <ul style="list-style-type: none"><li>○ National Contact Points</li><li>○ External/foreign experts in proposal development</li><li>○ Innovation Relay Centres/EEN/RENNIT representatives</li><li>○ Representatives of Romanian R&amp;D organisations</li><li>○ Innovation Council</li><li>○ Advisory Board for Research, Development and Innovation</li></ul>
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<b>Barrier 6</b>	<b>Lack of responsiveness of RDI organisations to final beneficiaries</b>
<b>Recommendations</b>	<p><b>Goal(s):</b></p> <ol style="list-style-type: none"> <li>1. Stimulate cooperation between business and RDI actors</li> <li>2. Foster market side demand for R&amp;D</li> </ol> <p><b>Proposed actions:</b></p> <ol style="list-style-type: none"> <li>1. Design a multi-annual action plan to raise the responsiveness of the Romanian R&amp;D community to market-led research<sup>xvi</sup>. This plan should:             <ol style="list-style-type: none"> <li>a. enhance the focus of RDI programmes on applied and market-oriented research and RDI in support of competitiveness in order to stimulate cooperation between the R&amp;D centres and the business sector (see also Barrier 3a and 3b)</li> <li>b. foresee in the organisation trade markets, and partner matching/brokerage events and campaigns to help establish relationships between business and RDI actors<sup>xvii</sup></li> <li>c. support the broadening of the services offer on behalf of R&amp;D organisations in function of relevant needs and requests from potential private users of R&amp;D organisations and including more (product/market) development-oriented services (to be determined on the basis of a market study)<sup>xviii</sup></li> <li>d. provide support for R&amp;D organisations to develop marketing departments / functions, and training on how to market R&amp;D research etc.</li> <li>e. underpin the development of the demand side to RDI, i.e. the business system as a potential user of R&amp;D and centres offering services in that regard. For example by introducing an innovation voucher scheme that facilitate private actors finding their ways to R&amp;D centres<sup>xix</sup></li> <li>f. identify a small range of selected sectors where Romania can take a leading edge in Europe, leading to the development of an ambitious programme to reach out to the demand side of R&amp;D in the sectors concerned</li> <li>g. allow to assess whether private RDI institutions with a proven market orientation can be accepted to apply for a wider range of RDI granting programmes (including infrastructure development) through a special state aid scheme for R&amp;D, even if such institutions have not been attested/accredited. Alternatively: consider designing a fast-track attestation for these cases. In a similar vein: open up possibilities for public-private partnership proposals under public R&amp;D grant competitions</li> </ol> </li> </ol>
<b>Stakeholders</b>	<p><b>The operationalisation and implementation of the actions in this area should be undertaken by:</b></p> <ul style="list-style-type: none"> <li>○ NASR and Representatives of Innovation Relay Centres/EEN/RENNIT (lead actors)</li> </ul> <p><b>With support from and upon consultation with:</b></p> <ul style="list-style-type: none"> <li>○ Representatives of user community of RDI centres (e.g. Romanian Centre for SMEs)</li> <li>○ Ministry of Economy, Trade and Business Environment</li> <li>○ Ministry of Finance</li> <li>○ Representatives of Romanian R&amp;D organisations</li> <li>○ Competition Council</li> <li>○ Innovation Council</li> <li>○ Advisory Board for Research, Development and Innovation</li> </ul>

## 4. Good practice examples

In this section we present some examples of practices abroad in line with the respective recommendations issued in the roadmap:

### **Ad Barrier 3a – Impact assessment schemes for RDI projects and programmes:**

See f.i.:

- <http://www.interact-eu.net/documentation/downloads/10/379>
- <http://www.proinno-europe.eu/index.cfm?fuseaction=page.display&topicID=53&parentID=53>
- [ftp://ftp.cordis.europa.eu/pub/innovation-policy/studies/sar1\\_smartinnovation\\_master2.pdf](ftp://ftp.cordis.europa.eu/pub/innovation-policy/studies/sar1_smartinnovation_master2.pdf)

### **Ad Barrier 4 – Reaching out to business actors in the regions via relay intermediaries:**

An option here can be to station such offices in the premises of Regional Development Agency or to increase the operational links between regional representatives of the coordinative agency for RDI policy (e.g. NASR) and Regional Development Agencies.

See also the OECD Reviews of Regional Innovation with indications on how to manage the relationship between national and regional articulations of innovation support. These reviews provide many examples from several countries with regard to decentralisation of innovation support from central to regional structures (or how the two levels produce synergies to supporting innovation at regional level).

Further ideas in this regard can be sourced from Choi and Hwang (2005) who argue for a decentralized structure in South Korea on the basis of examples from Italy, Austria, and Germany, where decentralization of innovation support measures and responsibility is a success story (see:

<http://www.sbaer.uca.edu/research/icsb/2005/043.pdf>). Although their work focuses more on the implementation of a Regional Development Agencies model, what is relevant for the Romanian case is that the paper concludes (see f.i. p. 9) –notably on the basis of the examples from UK and Italy (Emilia Romagna)- that to promote regional industry effectively, policies of the central government need to be complemented and adjusted by actions from regional policy actors. In addition, in order for regional agencies to construct and or support a regional innovation system, an overall vision (e.g. via a national RDI Master Plan) and a stakeholder mobilizing force (RDA or Innovation Relay Centres) are needed. In this respect, England's RDA have proven to be an adequate vehicle through which central government's projects can be planned and adjusted at the regional level.

## **Ad Barrier 5 – Internationalisation of Romanian R&D and the Romanian R&D community:**

### *Inside-out internationalization:*

To really promote the external visibility of Romanian research(ers). A higher equity policy can also include the set-up of antenna R&D centres abroad, as is done for instance by Austrian and German public research institutions. See for instance the e-Austria institute in Timisoara (Romania) or the Fraunhofer Institutes from Germany in China.

In Austria this is coordinated by a publicly supported funding society (Christian Doppler Gesellschaft). It finances research laboratories at Universities abroad, which are co-funded by Austrian companies. That way they can tap into local excellences abroad and are able to insert it into the domestic innovation system. In the case of Germany, the Fraunhofer Society has e.g. set up research structures in China. Through that they get better access to the local knowledge and innovation base and are able to develop new research (and product / services) markets. A positive externality of this internationalization strategy is that research institutions also become more attractive as research partners for companies from the home base. Also, they can serve as a transmission belt to those companies that can not or do not want to go abroad themselves or to co-operate internationally as much as they would need. Knowing that a public research partner is integrated in international knowledge networks, offers possibilities to any local company to reap benefits from third party internationalization. See also: [http://www.proinno-europe.eu/admin/uploaded\\_documents/Mini-study\\_8-final.pdf](http://www.proinno-europe.eu/admin/uploaded_documents/Mini-study_8-final.pdf), where also internationalization support schemes from the UK, Finland and Denmark are presented (§ 3.1.1 – 3.1.1.5).

A moderate equity policy can include the set-up of formal cooperation agreements with foreign research centres. Although this already takes place, a more systematic and broad policy can be implemented in this regard. For examples of this kind we refer to § 3.1.1.6-3.1.1.11 of [http://www.proinno-europe.eu/admin/uploaded\\_documents/Mini-study\\_8-final.pdf](http://www.proinno-europe.eu/admin/uploaded_documents/Mini-study_8-final.pdf) and [http://www.proinno-europe.eu/admin/uploaded\\_documents/International\\_learning\\_amongst\\_innovation\\_gencies\\_Report.pdf](http://www.proinno-europe.eu/admin/uploaded_documents/International_learning_amongst_innovation_gencies_Report.pdf).

### *Outside-in internationalisation:*

This can also include inviting foreign researchers to spend a period at Romanian research centres, see for instance § 3.1.1.13-3.1.1.16 of [http://www.proinno-europe.eu/admin/uploaded\\_documents/Mini-study\\_8-final.pdf](http://www.proinno-europe.eu/admin/uploaded_documents/Mini-study_8-final.pdf).

### *Fostering the participation of national experts in international evaluation committees:*

More coordinated involvement of Romanian experts in evaluation of applications to European research programmes can certainly provide learning effects to the Romanian research community in terms of transferring knowledge on how to apply more successfully and prepare better bids. In this regard, coordination does not simply refer to “having more Romanian evaluators”. In fact, based on participatory

observations it is our impression that there is already a considerable number of Romanian evaluators participating in European evaluations. What can be improved, though, is to foster more participation of industry-related experts, and not only academic as is now mostly the case.

In this regard, learning can be obtained from Spain's FEDIT (the Spanish Federation of Technological centres). In their 2004 annual report (<http://www.fedit.es/Spanish/DocumentosInformes/Portal/Publico/DocumentosEInformes/MemoriasAnuales/Memoria%20FEDIT%202004.pdf>), this federation specifically mentions:

- the creation and consolidation of a database of experts with experience in participation in the evaluation of national and international R&D programmes (page 36).

This is a line of action Romania can also consider to follow in order to profit from the involvement of national experts by performing some coordination at institutional level.

#### **Ad Barrier 6 – Raising responsiveness of RDI organisations to final beneficiaries**

*Raising the awareness of the Romanian R&D community for market needs:*

Also other countries and regions have undertaken initiatives (schemes/programmes) to increase cooperation between R&D and the business sector, for example:

- Link Up, which is a service provided by Emilia-Romagna Research aimed at facilitating enterprises' access to skills, structures and technologies, and at promoting collaboration between enterprises and the research system.
- The TKK Entrepreneurs Program (developed by the Helsinki University of Technology); which has been developed to make researchers familiar with academic entrepreneurship and to get to know business people and other academics that are interested in commercialization of their research
- The "Know-How Wales" programme, which offers a knowledge transfer service for bringing together potential business and academic partners in collaboration that will put some good ideas and expertise to productive and commercial use.
- The INNO-Action 2006-2009 "Tech SME Partnering", which promotes the number and value of investments in, partnerships for and entrepreneurial commitments to technology transfer (TT) and collaborative development platforms, by providing partnering tools to technology transfer or industrial liaison officers, technology transfer and collaborative research and development projects. Innovation experts (incubators, government agencies, consultancy representatives) also mediate between the TT Platforms and SMEs.

*Innovation voucher schemes:*

Examples of countries and regions that have implemented or experimented with voucher initiatives to increase the business sector's demand for RDI activities:

- Subsidieregeling Innovatievouchers, the Netherlands: [www.senternovem.nl/innovatievouchers](http://www.senternovem.nl/innovatievouchers)
- Research Vouchers, Region of Limburg / Innovation Voucher Benelux Middle Area, five Belgian and Dutch Regions: [www.kennisvoucher.nl](http://www.kennisvoucher.nl)
- Innovation Vouchers, Ireland: [www.innovationvouchers.ie](http://www.innovationvouchers.ie)
- INDEX, West Midlands (UK): [www.indexvouchers.org](http://www.indexvouchers.org)

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<sup>i</sup> E.g. as embodied by NP II or alternatively by an overarching master plan or guidelines that provide direction to RDI plans not initiated by NASR

<sup>ii</sup> Through ex ante evaluations on objectives, principles and content, monitoring on outcomes after being put in motion, summarise the evaluation after completion of time

<sup>iii</sup> The likelihood of creating a new Ministry at a time of reducing the budget for the public sector might be very low..

<sup>iv</sup> End purpose of the TF: amending the R&D legislation (GO 57/2002 and Law 324/2003 with subsequent amending) and issuing a Emergency Government Ordinance for changing the government structure.

<sup>v</sup> To avoid that businesses are not heard in a debate like this, it would be good to include some professional associations (e.g. the Romanian Centre for SMEs) to have countervailing powers and interests of the final beneficiaries of RDI management also represented, as the changes to be implemented should also be to their benefit.

<sup>vi</sup> Take note that this should substitute and not add to currently existing staffs that are organized and assigned vertically to programme pillars. So it is not an extra structure, but it is to lighten up the current situation in which for each RDI programme and or action line underlying it, there is a dedicated department or staff for reviewing and managing applications and projects.

<sup>vii</sup> Areas where there is room for upgrading of skills at the current NASR through training, are among others the following:

- (Financial) management of programmes and projects
- Performance and impact monitoring of programmes and projects
- Support to the R&D community in terms of designing and costing proposals (both for national and foreign programmes, in the latter case with help from NCPs and ROST)
- PR and promotion support to the R&D community to enhance their exposure and linking to foreign R&D community and business community and or learn to instruct NCPs and IRCs how to achieve this
- Increase and spread out knowledge on how to deal with IPR issues (e.g. advising researchers how to protect their R&D results)

In general, it is important that “client care” and “commercial skills” are further developed. I.e., learning to treat both R&D centres and the final beneficiaries of their activities (Industrial actors) as clients in order to come better research projects with more impact on business and society.

<sup>viii</sup> End purpose of the TF: issue Governmental Decisions and Ministerial Orders in order to provide the required organisational streamlining.

<sup>ix</sup> In this regard, learning can be obtained from several impact assessment exercises. For an overview of examples, see “Ad Barrier 3a” at the end of the present file.

<sup>x</sup> End purpose of the TF: amending GD 551/2007 followed by the necessary Ministerial Orders to prepare implementation of aligned and mutually coherent criteria sets and application and evaluation procedures.

<sup>xi</sup> End purpose of the TF: amending GD 551/2007 followed by the necessary Ministerial Orders to prepare implementation of aligned and mutually coherent criteria sets for attestation/accreditation and grant awarding procedures.

<sup>xii</sup> End purpose of the TF: inducing Government Decisions enhancing the regional R&D coordination or even amending of R&D main legislation to include provisions for regional coordination. Amending legislation related to Regional Development may also be required, to some extent.

<sup>xiii</sup> This could take the shape of a debate led by the coordinative agency for RDI policy (e.g. NASR) as an exercise to amend the current sectoral priorities according to the National Strategy for RDI given the current crisis conditions.

<sup>xiv</sup> For this, ROST could also prepare an action plan to organise specific/thematic (international) events in Romania.

<sup>xv</sup> NCPs should be nominated by the coordinative agency for RDI policy (e.g. NASR) from a pool of persons with experience not only in the sector in which they are supporting the R&D community (energy, IT, etc.). In parallel, these persons should have management, budgeting, partner search, FP rules, knowledge. Furthermore, for the sake of giving ongoing support, NCPs must be able to deliver support the R&D community on a day-by-day basis and should not disappear f.i. in European Institutions as detached national experts.

<sup>xvi</sup> Also other countries and regions have undertaken initiatives (schemes/programmes) to increase cooperation between R&D and the business sector. For an overview of examples, see “Ad Barrier 6” at the end of the present file.

<sup>xvii</sup> A common action plan of specific, “dedicated”, Technology Transfer units (such as NASR/DG TT and Infrastructures, EEN and RENITT could help to promote the offer of R&D centres to SMEs/businesses.

<sup>xviii</sup> See previous footnote.

<sup>xix</sup> In this regard, learning can be obtained from various countries and regions where such voucher schemes have already been introduced. For an overview of examples, see “Ad Barrier 6” at the end of the present file.