



**THE INTAS FP6 NIS  
INFORMATION NETWORK  
(ININ)**

**Concept Paper for Establishing National Information Points in  
Ukraine, Belarus, Moldova**

Revised version

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## 1. Introduction

'Winds of change' in the beginning of 1990ies transformed not only the socio-political system of the former Soviet republics, it also paralysed to a large extent the performance of their science and research system. Formerly centrally administered structures found existing links suddenly cut off from Moscow jurisdiction and were forced to restructure the whole system keeping in mind local science and technology (S&T) conditions. These developments have had tremendous effect on the functionality of S&T systems in Newly Independent States (NIS), eroding many of previously existing strengths due to severe cutbacks in funding, depreciating infrastructure, brain drain etc, yet creating also a number of new opportunities in the face of proprietary business establishments, new markets in the USA, Western Europe and Asia, strong scientific potential in rapidly evolving technology fields.

With the current paper, we aim to assess the effects of the restructuring, the current state of affairs in S&T systems of selected NIS – Ukraine, Belarus and Moldova – and put these developments into the context of S&T driven cooperation with European organisations in the framework of EU innovation programmes. Particularly, attention is paid to the proper and effective organisation of services provided by local EU innovation programmes liaison offices, so-called National Information Points (NIP) in each selected country. Obviously, the success of NIP is to a large extent pending on relevant support structures of the national innovation system, which should be taken into account while setting up the NIP.

However, the value of this paper will be fully realised only if there is mutual commitment present from all relevant stakeholders – NIP coordinators, EU advisors and state administration. Indispensable part of the paper is considered to be the section with recommendations to NIP to be applied in the process of organisation of their work as NIP, which is certainly non-exhaustive in its nature, yet important to be kept in mind.

## 2. International cooperation between EU and the third countries

### 2.1. Strategic cooperation between EU and NIS

After the fall of the Soviet Union in 1991, the EU Council of Ministers decided that technical assistance should be key in supporting the transformation of the NIS to democratic societies with competitive market economies, and created TACIS (Technical Assistance for the Commonwealth of Independent States).

Being committed to continuing its programmes for co-operation and assistance to the NIS, the EU has signed, and in most cases already ratified Partnership and Co-operation Agreements (PCAs) with almost all NIS countries, which provide an overall framework for relations between them, including the assistance programme.

Each PCA is a joint commitment for closer co-operation, which aims to consolidate its democracy and complete the transition to a market economy. It establishes a political dialogue between the EU and the NIS country concerned, and sets the parameters for trade and harmonised economic relations, financial, social, scientific, technological and cultural co-operation. Detailed

guidance on priorities and implementation of the assistance programme comes from PCA Co-operation Councils and Committees<sup>1</sup>.

The EU has general programmes and initiatives for RTD support with the NIS. These were decided when considered really necessary during the 1990s to meet urgent needs in those countries, ranging from critical environmental, energy or social problems to the essential reorienting of military scientists to civilian applications. All have evolved and contribute to consolidating or transforming the NIS' RTD infrastructure.

The fields covered by this wide-ranging EU support include science, technology, innovation and other policies. The programmes are managed by Directorates-General (DGs) of the European Commission, as well as by INTAS ([www.intas.be](http://www.intas.be)), private non-profit office for implementing the policy of European Commission. The level of EU support granted to RTD co-operation is however limited by the competition rules.

The TACIS programme<sup>2</sup>, administered by the External Relations DG together with the Joint External Services, also supports some S&T projects. The main areas of RTD covered are expertise in the development of science and technology in a market economy, and S&T innovation.

Finally, there are several 'other EU policies' with a research aspect in which there may be co-operation with the NIS. These include programmes such as nuclear safety (External Relations DG and Environment DG), space (Joint Research Centre), the environment (Environment DG), energy and transport, (Energy and Transport DG), industry (Enterprise DG), information society and telecommunications (Information Society DG), and higher education (Education and Culture DG)<sup>3</sup>.

## **2.2. Participation of NIS in EU Sixth Framework Programme**

The Sixth Framework Programme of the European Community is multi-annual programme for pan-European research, technological development and demonstration activities, with an overall budget of 17,5 billion Euros. The implementation of programme is based on vertical (thematic) and horizontal calls for proposals, which establish competitive nature of the programme in supporting the materialisation of the best excellence in EU research and development. On the other hand, FP6 is designed to contribute to the creation of the European Research Area to maintain EU's competitiveness in strategic R&D on global scales.

Participation of third countries in EU Sixth Framework Programme (FP6) is endorsed by Regulation (EC) No 2321/2002 of the European Parliament and of the Council of 16 December 2002 concerning the rules for the participation of undertakings, research centres and universities in, and for the dissemination of research results for, the implementation of the European Community Sixth Framework Programme (2002-2006)<sup>4</sup>.

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<sup>1</sup> <http://europa.eu.int/comm/research/nis/en/eu-nis.html>

<sup>2</sup> [http://europa.eu.int/comm/external\\_relations/ceeca/tacis/](http://europa.eu.int/comm/external_relations/ceeca/tacis/)

<sup>3</sup> <http://europa.eu.int/comm/research/nis/en/diversity.html>

<sup>4</sup> [http://www.cordis.lu/fp6/inco\\_policies\\_to\\_do.htm](http://www.cordis.lu/fp6/inco_policies_to_do.htm)

International co-operation (INCO) represents an important dimension of the Sixth Framework Programme. As a contribution to a European Research Area open to the world, it will be implemented in the Sixth Framework Programme through three major routes (Cordis website):

1. The opening of "Focusing and Integrating Community Research" to third country organisations with substantial funding;
2. Specific measures in support of international co-operation;
3. International activities under the heading of Human Resources.

Participation and funding of third country participants is also possible under the other headings of the Framework Programme. There is 600 million Euro foreseen for international co-operation according to the second activity of the Treaty, of which:

- 285 million Euro for participation from the targeted third countries in "Focusing and Integrating Community Research"
- 315 million Euros to fund "Specific measures in support of international co-operation". In support of the external relations, including the development policy, of the Community, these measures target also NIS countries, including the Ukraine, Belarus and Moldova.
- In addition, substantial funding under the heading of Human Resources is foreseen.

When participating in thematic priorities of FP6 (Integrating ERA block), NIS countries are entitled to the same standing as Member States, except the countries from NIS cannot coordinate a project. In 'Structuring and Reinforcing' block of FP6 NIS countries can participate if it is essential for the project or foreseen in relevant Work programme.

In general, participants from third countries have to follow the same procedures as participants from Member States. Participants from third countries<sup>5</sup>:

- have to be invited into the consortium by the European participants, or
- get active themselves to become invited into the European consortium.

### 3. Conceptual framework of NIS Science and Technology structure

#### 3.1. Soviet model of Science and Technology System

The Soviet R&D system had a unique institutional structure, the principal organisational form of which was an independent industrial research institute. Central industrial research institutes were part of the ministerial structure co-ordinating innovation process activities. Both enterprise R&D and university R&D were rather limited. While industrial institutes or 'branch science' were reasonably well developed, in-house or enterprise R&D was relatively modest<sup>6</sup>. R&D in the institutes was directed by ministries, who could also dictate the demand side, as enterprises were

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<sup>5</sup> Different rules apply for " Specific measures in support of international cooperation

<sup>6</sup> Radosevic, S. What Future for S&T in the CEECs in the 21<sup>st</sup> Century? 2004.

state owned. Academy of Sciences was mostly responsible for coordinating fundamental research efforts.

W. Meske outlines the following characteristic tendencies, which happened after the former socialist world S&T ‘dissolved’ (Meske 1998, pp.39-40):

- **Politics withdrawal from its responsibility for science** by dispensing with state planning, dissolving the ministries and other bodies formerly responsible and by granting the universities and Academy of Sciences autonomy. In all cases this was associated with a substantial reduction of state funding; in most countries these reductions by far exceeded the general level of economic downturn as a reaction to the prior overestimation of science.

- **Politics withdrawal from its responsibility for the economy.** The introduction of market economy mechanisms, the conferral of responsibility on the enterprises and in particular their privatisation all led to the downfall of the former framework of industrial R&D and innovation. With the dissolution of industrial branch ministries, the branch R&D institutes lost not only their management and funding basis but also the most important co-ordinating body for connections to the enterprises. Because the enterprises themselves were struggling for survival in the market economy, they were seldom interested in maintaining and, above all, financing the contracts with the R&D institutes, which had earlier often been imposed upon them; to the contrary, they usually even reduced any in-house R&D capacities as a cost cutting measure.

Therefore, the system that was once centrally coordinated through particular ministries found itself fragmented as a result of formation of different independent NIS with national S&T systems, eliminating formerly maintained bridge between science and R&D and industry. As industrial R&D practically vanished, basic research survived with the support of state funding, which was substantially less than it used to be, yet existent. Industrial R&D did not however find support from market, leaving the sector significantly worse off.

### **3.2. Principles in setting up NIP**

The paper continues by setting generic outlines for different NCP systems, describing the situation in target NIS countries – Ukraine, Belarus and Moldova – and making recommendations based on situation analyses in terms of efficient NIP organisation in these countries. At the time of preparation of the paper, political decision with respect to NIP organisation has been already made, therefore propositions reflected in this paper do not seek to choose alternative models, but suggest some points making the chosen model ever more effective. The suggestions are based on long term experience of Archimedes Foundation, Estonia, and EU-Bureau of the Federation Ministry for Education and Research (EUB) of Germany, both active as NCP organisations at least for the last 5 years, as well as numerous interviews performed with relevant people (NIP staff, ministry officials, researchers etc) in each of the target country.

From the experience of the EU countries there are basically three different modus operandi for establishing National Contact Points as an assisting measure to support participation in different EU programmes. As programmes central activity and decisions are made at EU level, for each individual country it is essential to have special liaison body which is able to extract EU level

information and adopt the info to the needs of local R&D communities. In addition, it is necessary to support general interest for participation in international projects, as there is inherent tendency by R&D organisations to prefer national programmes, which are far easier to apply for, yet undermine the international dimension of research and development efforts.

Three different observed forms of NCP operations are broadly the following<sup>7</sup> (see also table 1):

- Agency type NCP organisation. The tasks of NCP are subcontracted to private or public bodies, which operate as agencies within commonly agreed budgetary limits. *De facto* these institutions are independent, though subject to reporting and monitoring to/by relevant Ministry (Estonia, Austria, Netherlands etc).
- NCP hosted directly by Ministry or different Ministries. These NCPs are operating as regular department within the Ministry (Portugal etc).
- NCP dispersed and hosted by different bodies such as research institutions, agencies, universities etc, usually according to the thematic priorities, under the coordination of relevant Ministries. In some cases, especially for the larger countries there is the second tier of NCPs, usually regional NCPs consisting of 1-3 full time employees for all thematic priorities and programmes (Poland, Germany etc).

The following is short assessment of positive and negative aspects of specific organisational structures.

### 3.2.1. Agency type model

What is termed the “Agency type” model is a division of labour between the policy-making activities by public officials within the government offices and their implementation by the Agency’s employees<sup>8</sup>.

<u>Strength of agency type model</u>	
+	As Agency operates on competitive grounds, <b>efficiency</b> of such an institution is <b>inherently maximised</b> by Agency management. Therefore, usage of resources is rationalised and potentially most effective. There is however still a danger that Agency and outsourcing body are closely related and competition for service provision is hampered, enabling opportunistic behaviours to take place.
+	<b>Neutrality of Agency assists in serving all interested communities rightfully and equally.</b> It requires from the employees of an Agency to be organisationally independent.
+	<b>Agency succeeds in pooling together ample experience and knowledge under single roof,</b> acting as ‘centre of competence’ in the specific field and guaranteeing sufficient quality of service. It is of utmost importance to maintain transfer of experience and knowledge between different departments and offices within the Agency, in order to comply with this assumption.
+	<b>Agency as ‘one stop shop’ provides visibility</b> for the constituency and assists in coordinating dissemination activities associated with the representation of EU programmes.

<sup>7</sup> We do not pretend to cover all possible organisational structures of NCPs, making references to the most common forms

<sup>8</sup> Formica, P. Industry and knowledge clusters: Principles, Practices, Policy. Tartu University, 2002

+	<b>Under-performing managers can be easily dismissed</b> or replaced, which sets them higher responsibility for their action. The problem here is the measurement of performance, which should be relatively flexible, yet transparent due to the nature of NCP work.
+	<b>Management board of NCP under Agency structure has normally sufficient power to act on their own</b> , being not subject of appointment by political parties or vested interest of different economic groups.

<u>Main weaknesses</u>	
-	Agency's <b>tendency to inflate costs</b> in order to operate in larger budgetary limits. However, this tendency is constrained by competition between Agencies for the NCP position.
-	<b>Supervision of Agency's activities is somewhat constrained</b> by contracting body due to organisational separation. Supervision can be implemented by establishing an Agency's Board with the involvement of the representatives from contracting body.
-	<b>Acting as government advisory body</b> , which would convey better impact on policymaking, <b>is frequently complicated</b> , as Agency does not stem from ministerial structure.
-	In case FP6 Programme Committee (PC) members are not from the same organisation (usual case keeping in mind recommended separation of NCP position from the delegate's one), <b>access to PC information is restricted</b> .
-	Specific Agency might not have regional representatives, which will <b>hamper its reach beyond certain geographical area</b> . If regional offices are established, cost versus benefit might happen to be too high. Therefore, in the case of Agency, partner organisations have to be involved into dissemination work in case Agency is not able to reach all interest groups.

Some of the presented weaknesses can be overcome by certain organisational and administrative actions. At the same time it is necessary to maintain good balance in terms of potential advantages of the structure, since in some cases currently outlined strength can turn easily into weaknesses if not managed properly.

Therefore, Agency should conduct its operations proceeding from the following standards (Ibid.):

- Clear and publicly accountable responsibilities are assigned.
- Initiative is supported.
- There is clear focus on needed outcomes to achieve the substantive goals of the Agency.
- Effective and open communication is encouraged amongst all of employees and management to ensure Agency's effectiveness.
- Separate board limited to max 10-12 people, all of whom are sufficiently motivated and committed to devote their time to the job.
- Executives should be held accountable in front of the Board.
- The Board should provide access to main customer groups and have an involvement from policymaking bodies.
- The Agency should aim at desirable collective outcomes. For this, Agency should nurture social capital based on networks and mutual recognition of worth between governmental bodies, corporate entities and civil society.
- The structure and management of the Agency should be flat and flexible in order to meet new developments and demands from their customers.

### 3.2.2. NCP hosted by Ministry

A number of countries have opted for establishing an NCP directly as structural unit of Ministry or different Ministries. Setting up NCP under Ministry has different implications than that of Agency, mainly due to its proximity to policymaking units.

<u>Strength of the model</u>	
+	Being incorporated into the structure of Ministry the NCP organisation can to some extent have positive <b>impact onto S&amp;T policy</b> . In practice, it will very much depend on the functions and scope of activities of NCP and its access to policymaking process.
+	With sustainable political support, the NCP organisation has good <b>operational continuity</b>
+	<b>Lower administrative and supervision costs</b> if established based on existing infrastructural resources and feedback schemes.
+	<b>Proximity to internal policy documents</b> and better possibilities to concert actions with national S&T initiatives and priorities

<u>Weaknesses</u>	
-	NCP organisation <b>does not face competitive pressures</b> , which can easily lead to low efforts and vague dedication to the job. The control over financial expenditures exists, yet the return from these expenditures cannot be sufficiently monitored.
-	NCP organisation will <b>represent foremost dedicated Ministerial interest</b> , i.e. the interests of the Ministry of Science, which may lead to leaving some groups on the background (i.e. SMEs, multipliers, consultants).
-	<b>In case NCP is hosted by different Ministries, coordination of NCP structures is more complicated</b> , as Ministries themselves are organisationally separated and act on different principles and priorities. Thus rivalry between Ministries might impede cooperation within NCP system.
-	The <b>responsibility of NCP coordinator is not comparable</b> to the one faced by the Agency <b>managers</b> , since allocation of funds depends on the position of the unit amongst other units not that much on the efficiency of the work.
-	NCP hosted by Ministry does not usually have external experts such as Board, therefore <b>access to advice is more limited</b> and strategic orientation may lack (low flexibility).
-	NCP organisation management <b>is not free in its initiative</b> , having certain position in the overall hierarchy of the Ministry.
-	<b>Tendency to inflate costs</b> in order to operate in larger budgetary limits, very common to any bureaucratic structure.
-	<b>Funding body and performing body in one may dissolve control</b> over NCP activities, or hinder the transparency in order to refrain from public criticism if this should be the case.
-	NCPs are <b>not usually experts</b> in the related field, providing mostly administrative support.

In case NCP organisation is hosted in Ministry the following principles should be applied:

- Certain objectives are set, clear and publicly accountable responsibilities are assigned.
- Involving experts and/or advisory group/board into the activity of NCP.

- Ensure interaction between different units within Ministry and between employees in order to combine experience and cohere efforts on broader basis.
- Adopt specific strategy towards interest groups who are outside of direct ministerial policy scope (e.g. blurred responsibilities between Ministry of Economy and Ministry of Science towards SMEs, multipliers, third sector organisations).

### 3.2.3. NCP dispersed and hosted by different bodies

NPC organisation is sometimes dispersed and amorphous in its nature – this is mainly the case for larger countries with more dispersed R&D community across the country. Apart of it, in a larger country there is more diverse representation of interests, which can lead to NCP, organised under different bodies. Management of such NCP organisation is most complicated, as supervision should be performed across different players, information management and equal distribution is hardly achievable, spill over of experience is limited due to geographical separation and rivalry. However, as NCP is organised under existing institutions, infrastructural investments are minimised in this case. Also, reach to different interest groups can be achieved with this decentralised body as subsidiarity principle is applied.

<u>Strength of the system</u>	
+	Potentially <b>wider reach</b> due to <b>less centralisation</b> . However, there is a serious danger that NCP established under research institutes will focus mainly on researchers and discard enterprises and SMEs, whereas Enterprise Associations will forget about researchers. Thus, distribution of tasks under different organisations can have direct effect on marketing strategy.
+	Usually appointed NCPs are <b>experts</b> in their field.
+	<b>System embeds rivalry</b> , which motivates NCPs to perform their tasks efficiently.

<u>Main weaknesses of dispersed NCP system</u>	
-	<b>Communication and exchange</b> of best practice and knowledge between different NCP hosting organisations <b>seriously impeded</b> . This is almost inevitable if the system is large enough and operating in dispersed manner. Low knowledge spill-over has tendency to result in poor quality of service. Rivalry is another reason for low cooperation between different players.
-	<b>Supervision</b> of performance and measuring efficiency <b>is unattainable</b> due to large administrative costs and dispersed organisation of NCP system.
-	<b>Difficult to assess proper costs</b> assigned to the system, as each participating organisation has opportunistic interest to maximise its budget. While in the first two cases there is just one organisation operating, in the latter case there are numerous organisations involved, which turns the inflated costs into serious problem.
-	<b>Feedback</b> from Ministry to NCP system in terms of statistics and general performance <b>is less effective</b> , communication between NCPs and national delegates difficult as well, though not impossible.
-	<b>Coordination of the system is complicated</b> as division of responsibilities is widely scattered and time lag is present due to inert changes.

If dispersed NCP organisation is established the following aspects should be kept in mind:

- Where possible limit the variety of NCP host organisations in order to maintain coordinative efficacy, yet picking the best organisations for the job.
- Encourage systematic meetings between different NCP organisations for better exchange of information and involve the representatives of all NCPs into coordination process.
- Maintain competition for the NCP host, cohering competitive calls to the lifecycle of Framework Programmes.
- Encourage cooperation between first tier NCPs with second tier (regional) NCPs by supporting trainings, joint programme of activities etc
- Clear assignment of responsibilities for each organisation and establishing distinct feedback mechanisms.

### 3.3. Country reports

#### 3.3.1. Ukraine

##### 3.3.1.1. Period in transition

Similarly to the entire Soviet S&T system, the Ukrainian S&T system has altered radically since 1991. Transformation of the S&T system has been affected by cardinal changes in external and internal conditions of its development. **First of all, it is the disintegration of the international socialist science system and co-operation links between scientific centres.** This system was organised within the framework of the Council of Mutual Economic Assistance as bilateral and multilateral forms of co-operation of the research institutions of the former socialist countries. **Another factor that affected processes of transforming the Ukrainian science was the destruction of inner-state distribution of labour and co-operation in science of the former Soviet Union.** The breakdown of S&T system of the Soviet Union has broken links of long standing in research structures and deprived scientific organisations of a very substantial financial support from the government<sup>9</sup>.

Ukraine, like any other republic of the former Soviet Union inherited the key features of the „Soviet pattern“ of S&T system: extreme division into separate sectors, a centralised pattern of funding from single governmental budget, as well as centralised management and control structures. The prevalence of large organisations, insensitive to any change or adjustment of their institutional forms and lack of communication with the world community, created additional problems. Lack of funding in turn led to migratory processes in science. Scientists have opted out of the system by their own will, typically on account of the uncertain future of science and low salary rates. Migration has occurred to lucrative business sectors as well as abroad (Ibid. 2002).

The Ukrainian science and technology system excels in many areas of research, in particular in space studies, theoretical physics, mathematics, the welding industry, protective and reinforcing coatings and biotechnologies.

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<sup>9</sup> Kavunenko, L. Ukrainian Science System after Ten Transition Years. Conference Proceedings.

### 3.3.1.2. NIP set up in the Ukraine

The Ukrainian NIP<sup>10</sup> was established by the Ministry of Science under the Kiev State Centre of Scientific, Technical and Economic Information (The Centre) as a result of INTAS project undertaking. The Centre itself was founded already back in 1969 with the purpose of promoting scientific-technical and innovation investment activities, distribution and manufacturing application of scientific and technical achievements, extension of scientific production management methods and scientific labour organisation, increase of labour productivity and enhancement of product quality.

The Centre is alike other 19 regional Centres Scientific, Technical and Economic Information, who perform similar tasks on regional level. The largest concurring Centre is located in Lviv. Other Centres are not related to NIP activities, as Kiev NIP is designated to fulfil the tasks of FP6 /FP7 activities on national level. However, despite of a good reach of these Centres over the entire country, those Centres are not sharing the tasks related to FP activities. Instead, 9 information points are used as regional representatives. Those regional information points are established at different Institutes and Universities across Ukraine, which are operating on the basis on collaboration agreements endorsed with Kiev Centre. The selection of multipliers is done on the basis of vested interest, organization top level commitment and multidisciplinary represented by the organization.

Regional information points are located in Uzhgorod, Lviv, Vinnytsia, Odessa, Kharkiv, Dnipropetrovsk, Donetsk, Zaporizzia, Simferopol. Thus, NIP advice is present on most of the territory of the Ukraine, whereas the availability of people and quality of advice depends on the available resources of each individual regional information point.

Principal activities of the Centre cover the following directions:

- Collection and dissemination of information on the EU research programs
- Web-site support
- Organization of the skills building, training, awareness raising actions (seminars, conferences, workshops)
- Consulting and training, developing practical skills in project writing and management
- Establishment and development of contacts with scientific and research institutions in Ukraine and abroad
- Provision of service as INTAS Help Desk in Ukraine
- Assistance in searching for partners
- Working as a part of ININ information network, collaborating with NIPs/NCPs

When building up the NIP system, Polish system is well replicated due to similarities of the two countries and geographical and cultural proximity. However, consultancy and support from Poland was not available at the time of the set-up of NIP system in the Ukraine, which has deprived Ukrainians of the experience gained by Polish by the time the system was being

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<sup>10</sup> The information in this section is based predominantly on individual interviews with the Ukrainian NIP personnel, foremost with Ms O. Koval

introduced in the Ukraine. An advantage compared to Polish system is in the set-up structure of NIP – the activities are performed by one distinct body on both, central as well as regional level. This enables maintaining organisational transparency and wide reach of the services at the same time.

The Ukrainian NIP is subordinate to the Director of the Centre, being yet a separate unit within the organisation, and consists of administrative personnel of 3 full-time and 2 part-time employees, who consult on FP matters in general. FP thematic co-ordinators are appointed by the Ministry and they reside outside of NIP, mainly in the leading universities or research centres. FP6 thematic co-ordinators are in most cases related to the Academy of Science, who was the institution, which performed NIP tasks in FP5. Thematic co-ordinators are not operating full time and are engaged into consultancy predominantly in the cases when assisting thematic information is needed. Due to the professional engagement of the thematic coordinators into their everyday assignments as scientists, their knowledge on FP6 is however weak and time for consulting work very limited.

At this stage, when generally FP6 is unknown to the potential constituency, the prime aim of the NIP is to focus on information dissemination mainly. It covers distribution of electronic newsletters, face to face meeting with research community, information days and thematic presentations at the assistance of thematic coordinators. NIP has established an extensive database of potential FP6 participants, and main information on FP6 and partner searches is distributed through dedicated mailing lists.

Information on active participants is acquired from Cordis databases, meaning that operative information on the FP6 participation is not accessible by the NIP. On the other hand, due to the peculiarities of national scientific system and financial hardships potential and active FP6 participants are not interested in sharing the information with NIPs. At the present stage NIP have gained overview of the active Ukrainian organisations through scanning the Expressions of Interest, and as a result identified around 83 organisations potentially interested in the programme.

The target groups, mainly universities and research centres, are approached in traditional ways using mailing, telephone calls, information days and newsletters. The mailing list covers around 1000 contacts, contact database is also kept and developed.

Mostly people approach NIP with the questions related to project funding and administrative aspects, as well as Intellectual Property Rights and distribution of commercial gains from the exploitation of IPR. The funding issue is one of the most problematic as universities understand they are obliged to invest 50% of their own resources into the project (this point should be clarified further in order not to give wrong signals to the constituency).

In terms of the training, the most important aspects that are indicated by the NIP are questions related to setting up an effective NIP system, the assessment of so-called 'best practice' cases and transfer of the RTD results to the Ukrainian context. Still, it is evident that in-depth information on FP6 is not available to the NIP and performed INTAS trainings were useful though not sufficient enough.

Being a structural unit under the Centre provides NIP with the unique possibility to have some impact on STI policies, as the Centre operates as advisory body to the government of the Ukraine. Having distinct signals from the constituency, one is able to convert existing gaps existent on RTD landscape into policy measures, which can have positive impact on STI environment and thus also on international RTD cooperation.

With respect to scientific strongholds scientific activity is distributed between different regions of the Ukraine – main scientific centres being Harkov and Odessa next to Kiev. Ukrainian scientists have excellence in cybernetics, semiconductors, radiophysics, electronics, chemistry of molecular compounds, low temperature physics, solid state physics, micro-electronics, bionics, new aspects of theoretical physics, quantum chemistry, geochemistry, physics of minerals, mathematical work on oscillation of synchro-phastrons and satellite orbits, controlled thermonuclear fusion, mechanised engineering and radio engineering and automatic control theory. They have also mounted investigations in applied gas dynamics, aerohydronechanics, solid state mechanics, thermal engines, and hydraulic engines of high parameters, problems of the "boundary layer" in aerodynamics and aerodynamic wing theory. However, the leading fields in terms of FP6 are material and nanotechnology, space-related research as remnant from the former military industry, and biotechnology.

**Table 1.** SWOT analysis of Ukrainian NIP system

Strength	Weaknesses
<ul style="list-style-type: none"> <li>▪ Authorised central body co-ordinating FP6 national activities, ability to handle information in centralised manner and serving as one-stop-shop for clientele</li> <li>▪ Basic personnel is employed full-time with basic state help, though motivation is not high due to low overall operating budget for NIP activities</li> <li>▪ NIP is built on existing and functioning structures, having thus good set of experience and contacts</li> <li>▪ There are no organisational limits in cooperating in EU projects, attitude is more or less conducive to active participation (low inference into grant distribution)</li> <li>▪ Direct link of CNTEI Kiev (NIP host organisation) with Ministry of Education and Science, which facilitates NIP communication with other institutions</li> <li>▪ Existing NIP has capable personnel and knowledge in FP6</li> <li>▪ S&amp;T system is for Ukrainian organisations conducive to participation in FP6 and necessitating the existence of NIP</li> <li>▪ Database of research and scientific organisations is present, more than 1000 contacts in e-mailing lists and databases</li> <li>▪ Good personal and scientific relations with experienced Polish research partners.</li> <li>▪ Increased interest to the EU scientific programmes in Ukraine</li> <li>▪ Cooperative agreements with National Academy of Science of Ukraine, Ministry of Industrial Policy, local information points in Ukraine</li> <li>▪ Working contacts with the Delegation of the EC to Ukraine</li> </ul>	<ul style="list-style-type: none"> <li>▪ NIP limits itself to contractually binding activity of information dissemination, however proactive approach is lacking due to low financial basis and low experience in proposing and submitting FP6 proposals</li> <li>▪ Communication with INTAS office is not supported sufficiently from INTAS side</li> <li>▪ Contact base with EU research community is vague, also little interest from EU researchers' side</li> <li>▪ Misunderstandings on the level of Ministry of Science and Education <i>versus</i> Academy of Sciences affect directly the efficiency of NIP system, as thematic coordinators are from Academy of Science</li> <li>▪ Access to trainings of NIP personnel is very restricted as they are from the third countries and not supported by the Commission</li> <li>▪ Insufficient statistics from FP participation and missing feedback from Ukrainian participants impeding effective work</li> <li>▪ There is no government support present for successful EU project proposers</li> <li>▪ Multiple reporting to different national bodies and INTAS – no multilateral coordination</li> <li>▪ Limited access to internet/digital divide/language barriers are very problematic points for the Ukrainian constituency</li> <li>▪ Insufficient communication between EU and Ukrainian scientists</li> <li>▪ Undeveloped links with NCPs</li> </ul>

Opportunities	Threats
<ul style="list-style-type: none"> <li>▪ Growing interest in EU S&amp;T cooperation and project possibilities from Ukrainian scientific community</li> <li>▪ Tax exemption from S&amp;T related grants having effect on enlarged participation</li> <li>▪ NIP Ukraine receiving higher independency which will help to reduce administrative burden of the organisation and facilitate the involvement into everyday practical consulting work</li> <li>▪ Successful participation of Ukrainian scientists in FP6 projects (up to now very limited) will rise interest towards FP6/FP7</li> <li>▪ Inclusion of NIP into the framework of state funding</li> <li>▪ Increasing interest of EU in S&amp;T cooperation with so called third countries</li> <li>▪ Twinning possibilities with EU NCP institutions as well as NIPs and researchers in other NIS</li> <li>▪ Active participation of young scientists in the EU scientific programmes</li> <li>▪ Developed scheme of the INCO actions in the FP7</li> <li>▪ Establishment of the Centres of Excellence in Ukraine will facilitate the participation in EU schemes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Unstable funding and relations by INTAS office may endanger the national funding of NIP, as Ministry is not fully convinced of the necessity for NIP office.</li> <li>▪ Ease of access to US funds crowd out interest towards FP6</li> <li>▪ Practice with funded EU projects will change and funding will be directed to general accounts and monitored by central bodies</li> <li>▪ Large number of unsuccessful projects will dilute interest towards FP6</li> </ul>

### 3.3.1.3. Recommendations and opinion: NIP Ukraine

The approach of the Ukrainian Ministry of Science to establish NIP under Kiev State Centre of Scientific, Technical and Economic Information complies well with the characteristics of the Ukrainian S&T structure. Due to dispersed scientific activity across the country it is most prudent to outsource the activity to a dedicated Agency, which has sufficiently well represented regional reach. Positive aspects associated with the approach are:

- The Agency committing the tasks is experienced in industrial innovation support activities, which adds professional scent to the services and helps to add value for the customer through the range of additional services. It is therefore important to maintain close contact between NIP unit and other units within the Centre.
- The Centre is a neutral body, having equal access to research bodies, enterprises as well as support structures. There is an existing contact base with research community, which is useful in performing FP6 tasks, as most of FP6 projects are market oriented and suitable for the Centre's constituency.
- As independent body the Centre has incentive to participate in FP6 projects itself assisting NIP in their dissemination work and giving good experience to NIP staff.
- The Centre provides NIP with the unique possibility to have some impact on STI policies, in order to foster and rationalise the establishment of national STI programmes as well shape the RTD environment in the country on whole.

The above mentioned characteristics constitute opportunities for the NIP organisation, which should be harnessed through well-streamlined activities.

However, the following aspects should be considered at the present stage of set-up of NIP:

1. Relative distraction of thematic co-ordinators from NIP main office and organisation has adverse impact on the efficiency of NIP work. Thematic coordinators are mostly active as professional scientists having very little time to dedicate on consulting and administrative issues. This fact in turn keeps their motivation low in studying FP6 thematic priorities and developments within and to share the knowledge with wider constituency. Separation of thematic coordinators from each other and NIP personnel does not facilitate of best practice and experience exchange, which is essential element in achieving efficiency of the established system.
2. The present structure of the system is natural outcome of the process that has been taking place well before the establishment of formal NIP under the Centre. At that time, Academy of Sciences was responsible for the FP5 representation in the Ukraine, having thus basic structure present also for FP6. However, as the tasks of NIP were shifted towards more neutral body – the Centre, within the FP6, Academy of Sciences was left with thematic coordinators who *de facto* have to assist dedicated NIP personnel in promoting the activities of the Programme. Evidently, this *modus operandi* does not enable achieving high efficiency of FP6 consulting. Situation could be better if NIP under the Centre managed to include thematic coordinators under their jurisdiction and have dedicated thematic coordinators who are able to spend certain amount of time on administrative work. In some cases it might require hiring people who are not

professional scientists in the field, yet efficient in administrative aspects and highly motivated.

3. The Centre's inherent proximity to Ministry operating as advisory body provides the Centre with an excellent possibility to impact national STI strategies and shape national RTD programmes. This possibility should be exploited in order to search for synergy between national coordination and EU support in research domain. Through healthier local S&T environment there is also a higher possibility to be successful internationally, which would considerably strengthen the position of NIP in Ukraine.
4. Current orientation of NIP advice onto leading research groups and institutes is indeed a productive approach. Nonetheless, there is also high potential embedded into large, formerly R&D intensive state owned companies, who have restructured their processes when adopting to market economy. Some of these enterprises have still well qualified personnel and opening new R&D cooperation opportunities would facilitate their shift back to more knowledge based production. Currently lack of market outlets in the West and relatively poor contact base and cooperation can be overcome by collective projects with western partners who might become suitable channel for subsequent marketing of their RTD results. Hence, NIP should aim at filling the gap between academia and industry by attracting them into common projects.
5. A number of outlined problems in SWOT analysis refer to lack of funds, insufficient reach towards EU scientific community, limited experience with project proposal writing and managing. A number of these problems can be partly overcome by more active involvement of NIP in FP6 instruments such as S CAs. For these purposes NIP should look actively towards possibilities of being engaged into such projects and utilise the possibility in streamlined and well defined manner, perhaps at the assistance of experienced consultants or similar experienced bodies from EU member states. Also, there exists practical need for further trainings of NIP and Ukrainian constituency towards participation in EU framework programmes.

### **3.3.2. Belarus**

#### *3.3.2.1. Country S&T profile*

Before gaining its independence in 1991, Belarus (namely, the staff of its almost 300 organisations involved into R&D and 28 800 people, including 17 000 researchers (2004) has been tightly integrated into the common structure of the single scientific and technological space of the former Soviet Union (FSU) with its 3 thousand research institutes under 20 Academies of Sciences which was rather closed to the world<sup>11</sup>. The links and cooperative relations between particular organisations followed the patterns of labour division planned for all the republics of the FSU. With the part of technological innovations being adopted from Russia, Belarus has represented the strong technological fortress in metal-processing and new materials, micro- and

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<sup>11</sup> Pobol, A. (2004). Development of Scientific and Technological System in Belarus. In: Supporting the Development of R&D and the Innovation Potential of Post-Socialist Countries. Ed.: Walter Filho. NATO Science Series 5: Science and Technology Policy - Vol. 42. IOS Press.

optoelectronics and some biotechnologies. In the Soviet Union period, Belarus has been one of the most industrialised countries in the world with about 45% of industry in the GDP, and has held the third place for S&T among the republics of the USSR<sup>12</sup>. Its capital city, Minsk, ranked sixteenth in the world (and fourth in the FSU) in scientific output.

With all this, the scientific system was previously oriented on carrying out of large-scaled strategic state R&D tasks; the most significant expenditures were made on military purposes. In mid-90-es, it has been decided to refuse from such military orientation; hence the thematic directions of R&Ds should have been changed to the benefit of country's civil needs in building of the knowledge-based technological area. After splitting of the Soviet system, Belarus has inherited alongside with its independence the high energetic dependency from Russia on oil and gas; because the whole structure of economy has leaned on low prices of energy before, this has called for necessity to choose between falling into economic dependence from Russia again, or restructuring of economy for the less energy-intensive and more resource-saving productions (which is currently proclaimed to be one of the priority directions of the state development). The need has been felt for small-steps incremental technological innovations, for more small-sized projects with the shorter period of completing the science-intensive product and technological innovations, and accordingly for the actors able to develop fundamental knowledge for the needs of industrial market, which under conditions of economic crisis turned low-solvent.

New challenges of economic structure and changes in customers' demands could only be met by new forms of organising the R&D process. In all Post-Soviet R&D systems they have started to arise through "survival strategies"<sup>13</sup>, where inter-organisational restructuring (as splitting of institutes) has prevailed over restructuring which would involve several institutions from different sectors. Though privatisation processes in science have been very slow in Belarus, as novel forms of R&D organising there have emerged the research-based small firms, spinning-off from large public research institutions (state laboratories) aimed at commercialisation of ideas of technological innovations developed by companies' founders during previous research career.

Nowadays, the sector of entrepreneurship in S&T sphere of Belarus embraces a rather wide diversity of various forms. More than 130 entrepreneurial structures have been created in Belarus under the structure of the National Academy of Sciences and the research organisations in its framework. However, their survival rate is low, and the share of entrepreneurial structures acting in the sphere of R&D amounts to only one per cent of the whole SMEs sector, rather thin by itself. This is reflected in *low BERD level*. Domestic expenditures for R&D in Belarus are reaching 145 mln. USD or 0.86% GDP (2004). In that, the share of budget financing in GERD is 49.1% (2004)<sup>14</sup>.

Belarus has inherited the developed industry and good infrastructure, there is sufficient knowledge and willingness to develop and cooperate but the real possibilities are rather limited. SMEs are in their very early stage of development. Private initiative is not supported on the

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<sup>12</sup> Nesvetailov, G.A. (Ed.) (1991) Scientific Potential of the Republic. Nauka i Tekhnika, Minsk.

<sup>13</sup> Radosevic, S. (2004). What Future for S&T in the CEECs in the 21<sup>st</sup> Century? In: Werner Meske (Ed.) From System Transformation to European Integration: Science and technology in Central and Eastern Europe at the beginning of the 21<sup>st</sup> century. Münster: Lit Verlag. Pp.443-478.

<sup>14</sup> About the state and prospects of science development in the Republic of Belarus upon results of 2004. Analytic report. State Committee for Science and Technology of the Republic of Belarus. Minsk. 2005.

national level. Although legally anyone could start his own business, the formal procedure is so complicated, that many of those who start, give up halfway.

A problem of large *regional concentration of R&D resources* is relevant: 75% of researchers are situated in the capital city Minsk (2004). All bigger universities are situated in Minsk. The best in the rank is Belarus State University – a classical university followed by the State University of Informatics and Radio-electronics, National Technical University and State Medical University. Also there are observed the regional diversities in *innovation rate among SMEs*<sup>15</sup>.

As also in many other countries of the FSU, large *gap between fundamental research and introduced in industry innovations* exists; in the structure of scientific system of Belarus the expenditures' ratio "basic research : applied research : developments" constituted in 2004 20:30:50. The reason lays in that the fundamental and the prevailing share of applied research are with the relative stability supported by budget funds, whereas *alternative sources for financing the applied research and developments from domestic and foreign industrial investors are lacking*. Newly introduced schemes of organizing the applied research are to provide tighter links between science and industry through industry-shared project funding and rigid control on whether the results of state S&T investigations half-funded by state are industrially introduced and mastered by enterprises.

However, Belarus entered the 21<sup>st</sup> century with an open, export-oriented economy. Nearly 60% of the country's GDP is organically linked to the external marketplace leading to a high degree of national dependency upon global economic trends. Share of products with high science-intensity in export in 2002 was 4.2%, of medium high science-intensity – 13.8%<sup>16</sup>. Export of Belarus to CIS countries has constituted 55% of the whole export, of which 90.5% was export to Russia. Major trade partners of Belarus outside CIS are Germany – 6.1% of turnover, Great Britain - 3.2%, Poland – 2.9% and Netherlands and Italy – each 2.1%. The highest share of high-tech exports to CIS countries are electron integral schemes and TV sets; to the countries outside CIS exported are electronic integral schemes and micro schemes, optical, photographic, measuring and medical devices, diodes, transistors and analogue. While the EU is Belarus' main trading partner outside the New Independent States, for the EU trade flows with Belarus are marginal (0.1% of EC trade). This puts forward the issues of developing the international cooperation.

At the moment Belarus faces a serious task to balance economy, develop its competitiveness and sources of growth to which Belarus primarily attributes intellectual potential of the nation – science, education, innovation activity of the people.

Though being an open economy as for products and labour market, Belarus in fact has a very low *integration into the world technological network*. Till now, only 7% of industrial enterprises have supported technological collaboration with foreign countries (2002). 544 collaborative projects have been performed by industrial enterprises in 2002, whereby 75% of partners have been from Belarus, and 20% - from Russia. Russian capital is in most cases the only available funding for

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<sup>15</sup> Shehova, M. (2001). Statistical Observation of Small Entrepreneurship. In: Belarusian Economic Journal, No. 4.

<sup>16</sup> Slonimski, A.A. and Linchevskaja, O.S. (2003). Transfer of Technologies: State Regulation and Role of Small Enterprises. In: Belarusian Economic Journal, №. 4.

the companies; however, there also exist some problems with the involvement of and cooperation with it.

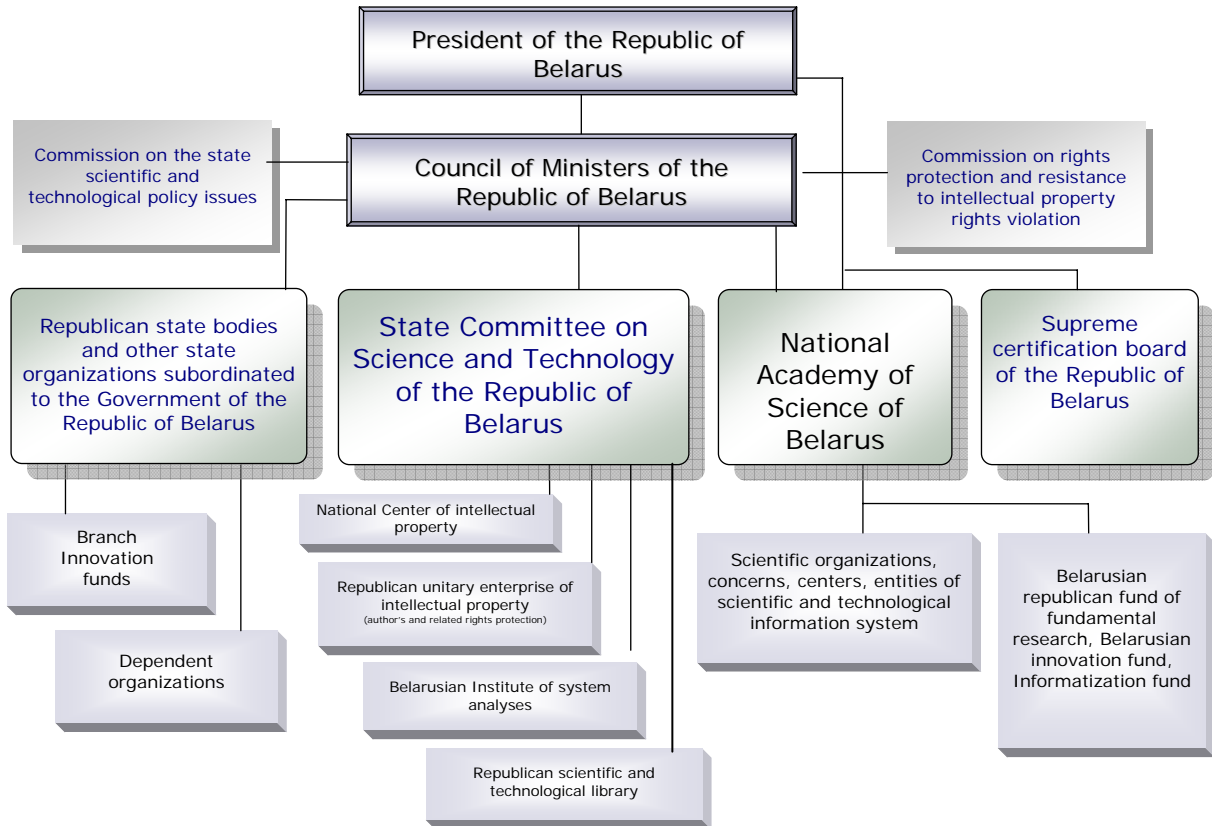
Generally, *connection of R&D sphere to foreign investments* is still occasional; foreign funding to R&D in Belarus has got 2 approximately equal sources – 1) direct contracts between Belarusian and foreign companies for development and delivery of S&T production, 2) international scientific cooperation programs and projects. The distribution of funds upon fields of sciences shows that the largest share of foreign funds has been not surprisingly invested into technical sciences (89.5% of all foreign funds invested into R&D in 2002). Existing cases of business investments into, e.g., German “Karl Zeiss” (optics, systems of electronic visualization), “Alcatel SEL” (introduction of mobile telephone system of GSM standard and commutation equipment production), “Fresenius AG” (medical equipment production), Dutch “Maersk Medical Ltd.”, Swiss “SB Telecom Ltd.” are however considered to be successful cases of FDI into knowledge-intensive industries in Belarus.

Still low is participation rate of institutions in FP6, though a capacity of S&T collaboration is very high. National R&D development programme identifies 6-7 priorities, which basically coincide with the thematic priorities of FP6. They embrace: health, Chernobyl disaster consequences liquidation, environment protection; agriculture; energy and transport; informatization and telecommunications; resource-saving, new materials and technologies; machining and radio electronics competitiveness; development of State. **Nanotechnology** is represented by numerous research institutions, **ICT** – national strength lies in software development, system solutions, computer industry (INTEGRAL), television industry (located in Minsk and Vitebsk, cooperating with Philips), **life science, biotech**, material technology and powder metallurgy.

The system of state management in the field of R&D was reorganised in 2001-2002 and now consists of three main actors: the State Committee for Science and Technology, National Academy of Science and Supreme Certification Board. The legislative base for state management of the S&T sphere in transitive conditions has been worked out in Belarus already in 1993. Applied R&D are carried out and realized mostly in the framework of State scientific and technical programs (SSTP), as well as innovation projects (IP), branch, and regional scientific and technical programs. Now, there are Belarusian State Foundation for Fundamental Research, Foundation for Informatization of Belarus, Belarusian Innovation Foundation and numerous branch innovation foundations, that structure relationships of state and researchers apropos R&D.

The growth of investment into R&D and its effectiveness is one of the main tasks of the State Committee on Science and Technology (SCST), which is a republican body of state management ranked as a Ministry (see the scheme below).

#### System of state management in the field of science and technology



The major objectives of SCST are as follows:

- implementation of public policy in the sphere of scientific and innovation activities, including international activities, as well as in the intellectual property rights protection;
- coordination of governmental institutions' activities in the spheres of R&D and innovation activities, as well as in the IPR protection;
- organizational and economic regulation of R&D and innovation activities, as well as of the IPR protection;
- improvement of the structure of the scientific and technical capacity and enhancement of its efficiency;
- ensuring control over compliance with the legislation of the Republic of Belarus on development of R&D and innovation activities and IPR protection, as well as over the use of the Republican budget funds allocated to R&D including international cooperation.

Development of international S&T cooperation including cooperation with EU for the benefit of R&D organisations without regard to their subordination is SCST's power. Thus it was natural to organise NIP under SCST's protectorate.

In future the NIP should develop into a completely new and independent non-profit institution, preferably public. The founders should be all interested groups. Funding should come from the state budget via the State Committee for Science and Technology. The activity might be wider and include both free of charge and paid services.

So far there is almost no private consultancy service in the market except for small legal consulting companies but if the situation changes, a possibility of cooperation with such companies may be considered

### 3.3.2.2. NIP System in Belarus

The NIP system<sup>17</sup> in Belarus is evolving. Although launched in September 2003, the first activities started only in January 2004 and regular ones – in September 2004. In August, permanent personnel were hired in the embodiment of one NIP employee. There are 2 people involved into NIP activities on top of that, however they do not work full time. General attitude of the decision makers is, that what they have today is a temporary project, and neither accession to EU nor participation in framework programmes is a national priority. The officials (the State Committee for Science and Technology) have no legal opportunity to support NIP institutionally though they do support some of the NIP's activities (organisation of conferences and seminars on FP6 in the interests of the whole R&D community of the country or its definite groups). Upon the request of the SCS&T Belarusian State University has placed at NIP's disposal premises which are free-of-charge and has got necessary communication tools (internet access and telephone). Financial support of the every days NIP's activities comes only via the INTAS grant. This in its turn impedes from employing full-time personnel, as nobody wants to give up their permanent job for something uncertain. Nevertheless, the first wider publicity event was arranged in April with the involvement of local media and reception for decision makers, and second largest in 27<sup>th</sup> of October, 2004 at the involvement of experts from Archimedes Foundation, Estonia, and EU Bureau, Germany.

NIP personnel is able to offer the following services:

- information dissemination,
- general questions about FP6 and other cooperation projects and funding opportunities,
- construction and maintenance of a web site,
- consultations on all stages of proposal preparation, electronic proposal submission,
- advise on the partner search,
- consultations during the project implementation (financial issues, project management, legislation, problems with customs).

Beginning from January 2005 up till now the personnel include:

- the head (full-time employee),
- assistant – secretary (full-time employee),
- IT-assistant (part-time, her main position is in the Belarusian Institute of System Analysis),
- accounting assistant (part-time, her main position is in the Belarusian Institute of System Analysis).

Besides, there is a group of contact persons for several FP6 priorities (life sciences, nanotech, IST and SMEs). They are united into an Advisory Board for Belarus-FP6 and Belarus-INTAS

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<sup>17</sup> Information presented in this chapter is based on interviews conducted with Belarus NIP personnel, mainly with Ms. I. Fedorova and Mr. A. Mikheyshin

Cooperation headed by the First Deputy Chairman of the SCS&T. Except IST contact person who is involved in IDEALIST FP6 project they are not interested financially in making consultancy in their priorities. Though as a top researchers they could be involved in promotion of national R&D potential internationally. All of them represent different R&D organisations – the National Academy of Sciences and universities.

The present grant for launching the NIP system was applied for by the Institute of System Analysis, as the State Committee for Science and Technology as a national agency did not qualify for application. However, the connection between NIP and the Institute is only formal. NIP is developing into an independent project.

The head of the NIP system has good experience with INTAS projects since 2000. He has consulted all stages of proposal preparation, is well informed about administrative requirements, eligibility criteria etc – all this has been of considerable help to get into the system of the Framework Programme.

Belarus research community has no obligation to register or inform governing bodies in any other way about their participation in a FP project or preparation of a proposal. Though they should report about their project activities inside the organisation (for example, a laboratory reports to the R&D department of a university) or to the head organisation (annual reports of the institutions and organisations of the National Academy of Sciences to its Presidium). The Institute of System Analysis which is NIP host organisation is authorised by the Government of the Republic of Belarus as an agency to register R&D works, both national and international. This registration exempts R&D from VAT and, thus, organisations are interested to have the projects registered. As a whole, the BelISA's data bases seem to be reliable source of information about the number and content of international R&D projects including FP ones. Weaknesses for the NIP: 1) information is usually late - normally organisations start to register their R&D works after receiving first money that could be several months later the beginning of the project, 2) there is information only about ongoing projects but not about proposals submitted. Therefore the NIP personnel has no overview of the participation in Belarus institutions in FP6, so any useful information from the continuing advice providers is very welcome.

In general, interest in FP participation is still low. But it grows gradually. The most popular programs are INTAS and ISTC. Basically interest has been expressed in INTAS calls – questions about proposal submission, eligibility criteria, filling in the application forms, possibilities for partner search (information is given only about the possibilities, no actual partner search is done). Practical assistance in off-line proposal preparation and electronic proposal submission. During the project – questions about the use of funds, management, eligibility of costs, national legislation, customs regulations, taxation. Communication between the NIP personnel and researchers is carried out mostly by e-mail, telephone or via web-site. Some people prefer personal consultations.

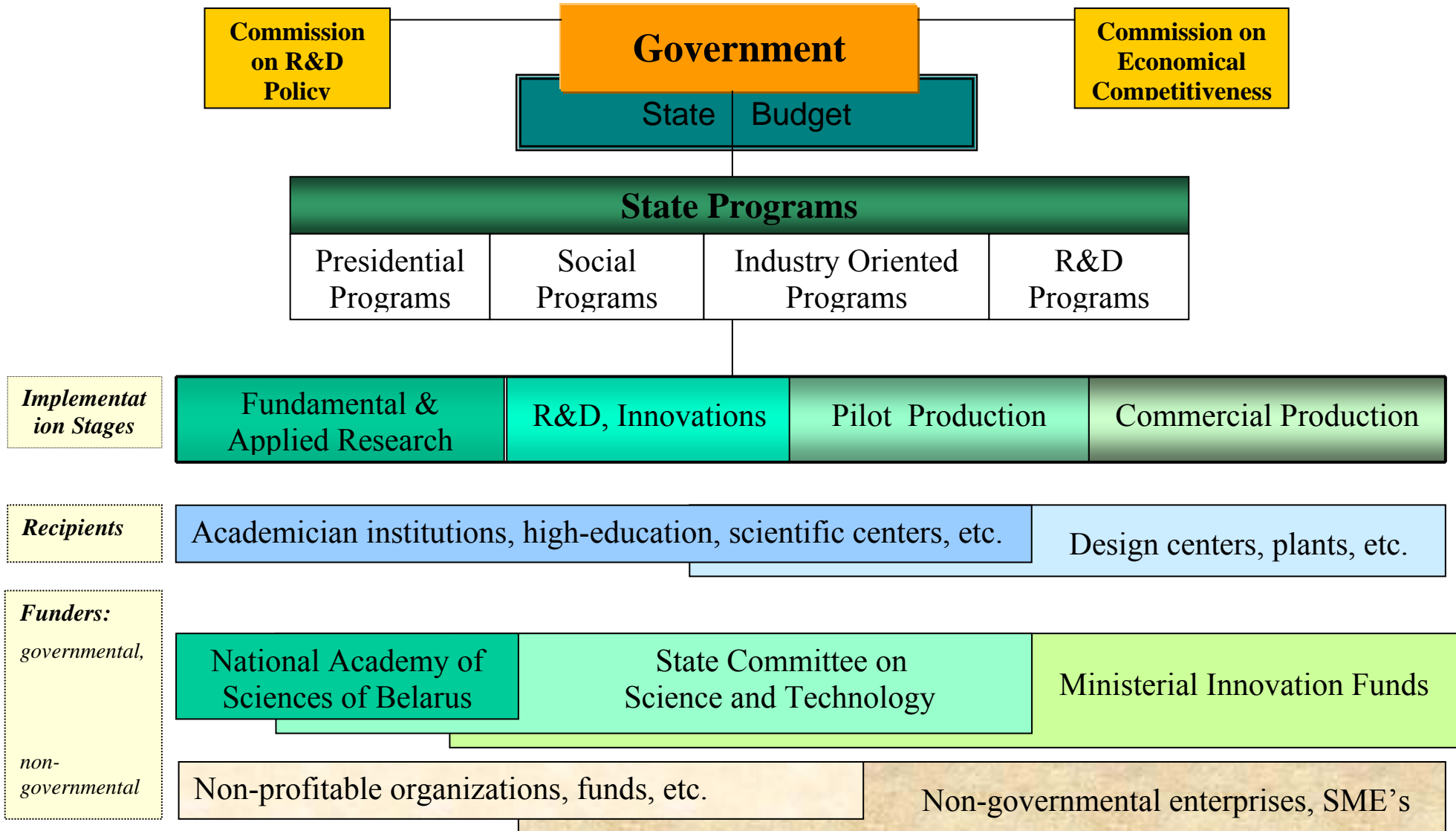
Interviews with local NIP actors revealed that the community might be interested in the following topics for training courses and seminars:

- comprehensive overview of FP6/7
- EU priority research topics
- Partner search and partnership offers (how to present ones skills and experience)

- Added value of the Belarus researchers to the EU research area

One of the main tasks of the NIP is a mapping exercise to identify the interest groups and possible contact persons in major research institutions including regional ones, who could disseminate information among their fellow researchers. This was done in 2005 – the first half of 2006 by a set of 1 information days in the capital city and in regions - Grodno (2), Vitebsk, Brest, Gomel and Polotsk. By the summer of 2006 a network of over 30 information multipliers all over the republic has been created. The list of NIP's direct clients is around 650.

**Figure 1.** RDTI Funding System in Belarus



**Table 2.** SWOT analysis of Belarus NIP system

<b>Strength</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>▪ Acceptance of State Committee to establish NIP in Belarus. For these purposes certain funding is present, but mostly based on separate application i.e. for organisation of information events, conferences etc.</li> <li>▪ Existing NIP has qualified personnel and director, who have experience in previous S&amp;T projects and management.</li> <li>▪ Infrastructure for S&amp;T is relatively well supported in Belarus and the quality is satisfactory (actually the best in NIS countries)</li> <li>▪ Strong fields of S&amp;T are related to engineering, electronics and machinery</li> <li>▪ Database of research and scientific organisations is present</li> <li>▪ Cooperation between State Committee and Belarus universities is good and mutual</li> <li>▪ Good personal and scientific relations with Russian and Polish research partners.</li> </ul>	<ul style="list-style-type: none"> <li>▪ NIP is operating only on the basis of INTAS funding, which is temporary</li> <li>▪ There are only 2 full-time persons working at NIP which is not enough for working with 17 000 potential FP actors</li> <li>▪ EU is not the priority in terms of S&amp;T cooperation for a country as a whole</li> <li>▪ There is no government support present for successful EU project proposers</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>▪ Renewal of former S&amp;T contacts with former partners from NIS</li> <li>▪ Re-orientation of researchers engaged earlier in INTAS projects to FP because of INTAS liquidation</li> <li>▪ Inclusion of NIP into the framework of state funding</li> <li>▪ Increasing interest of EU in S&amp;T cooperation with so called third countries Twinning possibilities with EU NCP institutions as well as NIPs in other NIS</li> </ul>	<ul style="list-style-type: none"> <li>▪ Political voluntarism can endanger the proper functioning of NIP</li> <li>▪ Instability of NIP staff can pose serious constraints on NIP work in case experienced staff decides to resign from the work</li> <li>▪ Omissions with respect to INTAS contract may endanger the future funding of NIP, leading to closure of NIP due to lack of funding.</li> </ul>

### 3.3.2.3. Recommendations and opinion: NIP Belarus

The support of INTAS to Belarus for establishing local NIP office has been decisive and should be highly recognised. Participation in EU structures does not hold high ranking on the Government's priority list<sup>18</sup>, therefore state support in the phase of the establishment of the NIP has been modest - most of the funding for the establishment of NIP has come from INTAS. Thus, one of the challenges for Belarus NIP is to purport convincingly the necessity and value of NIP undertaking in order to guarantee sustainability for the NIP activities for the remaining continuum of FP6 and for FP7, whereas the latter one will turn into major STI policy instrument on European scales with almost double funding.

Decision to form NIP under the roof of State Committee on Science and Technology can be welcomed, as it hopefully will make it easier to:

- convince Ministry and the government in the necessity of such structure provided the Committee will manage to create best practice cases through augmented participation of Belarus in FP6 activities;
- act as highly recognised body with good credentials and scientific background, utilising its wide network of contacts with RTD community;
- provide political sustainability for actions as State Committee ranks high in the existing R&D support system.

The following are recommendations for the establishment of NIP and for increasing the efficiency of NIP everyday activities. These recommendations are non-exhaustive, however we believe proper realisation of the recommendations could significantly contribute to the success of Belarus participation in FP6.

1. It seems that success of NIP is very much pending on political support, which is missing at the moment. Therefore, NIP should gain higher visibility through public events and intensive dissemination, prepare action plans for future activities with certain objectives defined, and articulate the benefits from S&T related cooperation with European Community. Ever increasing budget for INCO activities is one indication of European willingness to support international cooperation, Belarus in turn can benefit from European funding in strengthening its own scientific base.
2. Presently, NIP staff consists of 2 persons. Our suggestion is to increase the number of positions for NIP, if not for all thematic priorities then at least generic NIP who is able to perform basic dissemination and consulting work, whereas thematic NIPs can enter the scene when more in-depth information is needed.
3. In the long run, it is necessary to have permanent state support for NIP activities. With the termination of INTAS contracts NIP activities should be pursued further, and local funding should be allocated for covering basic costs. NIP can actively search for matching funding from alternative EU resources, but this should not be the only source of financing.

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<sup>18</sup> S&T cooperation is gaining considerable scales with Russia

4. NIP should seriously utilise twinning possibilities with EU NCP institutions as well as NIPs in other NIS. One possible way is to initiate projects under INTAS framework, establishing basic contacts with European scientific community.
5. Likewise in the case of Ukrainian NIP, we advise to focus activities next to research institutions also to the leading R&D intensive enterprises. As a positive heritage from the former Soviet Union, some of these enterprises have capacity to cooperate in the field of R&D, especially in the sectors like electronics, biotechnology, material technology, military. Currently lack of market outlets in the West and relatively poor contact base and cooperation can be overcome by collective projects with western partners who might become suitable channel for subsequent marketing of their RTD results. Hence, NIP should aim at filling the gap between academia and industry by attracting them into common projects.

### **3.3.3. Moldova**

#### *3.3.3.1. Transition to new S&T system*

The Republic of Moldova had a rather powerful scientific and technical potential during Soviet times. For instance, in the '80s the Academy of Sciences of Moldova had 3 departments with 17 scientific institutions, as well as a branch chain of scientific research institutes. Research was carried out in the fields of equipment construction, food industry, viticulture and wine-making, soil research and agro-chemistry, plant protection and seminal industry, irrigation, etc. In 1990 the number of people involved in scientific and technical activity reached the figure of 25,990 persons, of which 14,101 persons were involved in research work, design, construction and technologies. There were 375 Doctors Habilitat (Doctor of science) and 1,761 Doctors of Science (Kandidat). There were also researchers who successfully combined teaching and research activity. Their number reached 2,795 persons, including 198 Doctors Habilitat and 1,820 Doctors of Science.

Following Moldova's independence, R&D expenditures faced a constant decline. In the last decade budget allocations for science from the GDP decreased from 0,76 % in 1991 to 0,2 % in 2002. This level of funding from the state budget is lower not only with respect to developed countries (Japan-3,6 %, US-2,84 %, Germany-2,29 %, France-2,18 %), but also with respect to some former socialist countries (the Czech Republic-1,26 %, Hungary-1,1 %, Ukraine-1,1 %, Russia-0,85 %, Romania-0,54 %).

Furthermore, after the collapse of the USSR, the technical equipment of the research organizations has become obsolete. Approximately 30,000 scientists in the Republic of Moldova were left without a primary source of funding when the Soviet Union dissolved in 1991. These scientists include hundreds of experts in microelectronics and avionics. During the 2000-2002 period the number of R&D organizations in the Republic of Moldova decreased from 83 to 76 units. The total number of researchers involved in scientific activity has declined by 22%. Such a dramatic decline was mainly caused by the "brain drain phenomenon", i.e. many scientists migrated to other countries to continue their research work, while others changed their careers and got engaged in other jobs not related to science.

During the transition period from the socialist system to the market economy in the 90's many big enterprises were forced to stagnate due to insufficient funding. This was reflected upon the development of the S&T field. The majority of the economic agents were not interested in investing in Science and Technology for a long period due to the financial risk. Hence, the contribution of the business sector to R&D activities was and continues to be marginal (0.034% of GDP in 2003).

In 2004 R&D activities were performed in 86 organizations in the Republic of Moldova. Of these, 64 were scientific research organizations, 7 were bureaus for design and technology, 4 were organizations for design and exploitation, and 11 were institutions for higher education. 49% of these organizations were funded from the state budget, 37% were private enterprises, and 14% were bodies of higher education. The total volume of work increased by 23% compared to the previous year 2003 and constituted 178.2 mln. lei (local currency), with research works accounting for 118.9 mln. lei.

The volume of scientific investigations, including fundamental and applied investigations, in 2004 accounted for 66.8 mln. lei, thus marking a 11% increase with respect to the previous year. The volume of applied research increased up to 48% with respect to the previous year, thus reaching the same volume as the fundamental research. The volume of scientific elaborations also increased up to 18% with respect to 2003.

The expenses for research and elaborations executed with the own forces constituted 111.8 mln. lei, of which 96% were current expenses and 4% – capital expenses.<sup>19</sup>

Currently Moldova is restructuring its S&T system with the help of the United States. Moldova in cooperation with CRDF (The U.S. Civilian Research & Development Foundation (CRDF) is a non-profit organization that promotes international scientific and technical collaboration) is trying to preserve the world-class research and innovation occurring. The Moldova Science and Technology Development Program is consistent with this goal. The collaborative nature of the Program ensures that the United States will reap technological and economic benefits as well.

In keeping with the CRDF's non-proliferation goals, the joint program is actively seeking the participation of researchers who are former defence scientists. Additionally, the CRDF and the MRDA (The Moldovan Research and Development Association) will make inclusion of young scientists a priority in their ultimate funding decisions, thereby ensuring that the Moldovan tradition of groundbreaking science and engineering will continue well into the 21st century.<sup>20</sup>

The MRDA – located in Chisinau, Moldova - is a non-profit, voluntary, self-financing organization registered with the Ministry of Justice of Moldova. The goals of the MRDA are to (1) promote scientific research and technological development in various fields in conformity with international standards, as well as to develop the scientific and engineering potential in the Republic of Moldova and to (2) provide direct funds (grants) for scientific research and development projects on a competitive basis. The U.S. Civilian Research and Development

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<sup>19</sup> Country Report No 7, The Science, Technology and Innovation System in Moldova, April 2006

<sup>20</sup> [http://www.crdf.org/News/mrda\\_backgrounder.html](http://www.crdf.org/News/mrda_backgrounder.html), 09.06.2004

Foundation (CRDF) has been instrumental in providing material support, training and guidance to the fledgling organization.<sup>21</sup>

But both the MRDA (Moldovan Research and Development Agency) and of Moldovan science are far from secure. First of all it is not clear for how long will the US State Department continue propping up former weapons researchers and Moldova's spending on R&D is still very problematic – 0.18 % of GDP is spent on R&D.<sup>22</sup>

Speaking about institutional capacity for S&T policy making in Moldova the following institutions should be mentioned:

- **The State Agency on Intellectual Property (AGEPI)**, which was created on the basis of Article 163 of the Code on Science and Innovation from July 15, 2004 and the Government Decision nr. 1016 "On the Creation of the State Enterprise AGEPI", dated September 13, 2004. The founder of the Agency is the Government. The Agency represents the Republic of Moldova at the World Intellectual Property Organization and other international and interstate organizations on intellectual copyright. It supports and develops relations of cooperation with these bodies as well as with respective bodies of other state; the Agency is independent in decision-making with regard to legal protection of the intellectual property and it grants the titles of protections on behalf of the state.
- **The Agency of Innovation and Technology Transfer** was created by the Assembly of the Academy of Science. The decision was made on the basis of the Code on Science and Innovations, adopted by the Parliament of the Republic of Moldova on July 15, 2004 (Decision nr. 259-XV). The Agency is a state scientific institution and is responsible for the organization of the developed hi-tech industrial infrastructure in the area of innovations and technology transfer within the Academy of Science of Moldova. The Agency is also responsible for the development and application of new mechanisms and principles of integration of the existing scientific and technological potential and the industrial infrastructure, the latter being subjects of economic activities with a various pattern of ownership. The general management of the Agency is carried out by the Supreme Council of Science and Technological Development (SCSDT).

December 14, 2005 was a crucial date for further development of the national R&D system – a starting date of the reform of the whole R&D system - the Government of the Republic of Moldova adopted the Decision No. 1326 concerning measures of optimization of the infrastructure in science and innovation aiming at creation of favourable climate for research and innovation; and formation, promotion and consolidation of new democratic management culture, based on knowledge, openness and competence. The most visible change is that Academy of Sciences has become the most important decision making and funding institution. Earlier the whole research funding and coordinating system initiated from the Ministry of Education.

Currently there are a total of 39 research units. 20 of them operate within the Academy of Sciences of Moldova and two within the Ministry of Culture and Tourism, eight within the Ministry of Agriculture and Food Industry, eight within Ministry of Health and Social Protection, and one within the Ministry of Education, Youth and Sport. The main forms of organizations in

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<sup>21</sup> same

<sup>22</sup> Banishing Moldova's Demons, Science, vol 304, 21 May 2004, [www.sciencemag.org](http://www.sciencemag.org)

the area of research and development are institutes of the Academy of Science of Moldova (20 Institutional members), State Universities (12) and institutes subordinated to the ministries (19).

Recently a number of laws were elaborated to guide the activity of the Academy of Sciences: the Law on the State Policy in Research and Development (1999), the Law on the Academy of Sciences of Moldova (2000), the Statute of the Academy and other normative documents. The Code on Science and Innovation was adopted on July 15, 2004. The Code radically changed the role of the Academy of Sciences in the new system of organisation and management of sciences. The new structure of the Academy is given in the figure below.

In compliance with the Code, the Academy of Sciences (ASM) consists of 6 Sections of Sciences.

1. Section of Economic and Mathematical Sciences (3 Institutes and 1 Center)
2. Section of Physical and Engineering Sciences (4 Institutes and 1 Center)
3. Section of Biological, Chemical and Agricultural Sciences (7 Institutes)
4. Section of Humanities, Social and Arts (5 Institutes and 2 Museums)
5. Section of Agricultural Sciences (9 Institutes)
6. Section of Medical Sciences (5 Institutes and 4 Centers)

The Academy of Sciences of Moldova has signed the Partnership Agreement with the Government of Moldova for a term of four years with compulsory annual correction and confirmation. The Partnership Agreement is approved once in four years by the Assembly of the Academy of Science at the initiative of the President of the Academy of Science.

Strategic directions of science and innovation sphere for 2005-2008 are:

1. Consolidation of Law State and valorisation of cultural heritage in the perspective of integration into multicultural multinational Europe
2. Economic base of the sustainable development and efficient utilization of human and natural resources
3. Biomedicine and human health
4. Agricultural and industrial biotechnologies
5. Nanotechnologies, new materials and information technologies
6. Energy security and increase of efficiency

It has become clear that steps should be taken for increasing the prestige of research and development activities, attracting young people to higher education and research, wider application of research results (to be funded by the Agency of Technology Transfer) and increasing considerably the salaries of senior researcher staff. Stimulating award system is being introduced as well as the election of the scientist of the year.

The academia-industry communication has been very limited so far. Only 2% of utility models find their way to industrial production. The R&D results in the Republic of Moldova are of top European and international standards, unfortunately they are not demanded by the national economy. The main factors hindering the internal demand for R&D in Moldova are the weak development of the high technology sector of economy; a weak informational system, and the lack of financial resources in the local industry. Economic problems have caused a situation

where more than 1 million Moldovan citizens are working abroad bringing about 600 million dollars to the country.

A number of new institutes are planned to be founded – Institute of History, State and Law among them. The existing institutes with strong potential and wide renown in physics, chemistry and mathematics will continue their work. Other areas with competitive potential are information technology, biotechnology, medicine, pharmacy, new materials, plant physiology and genetics.

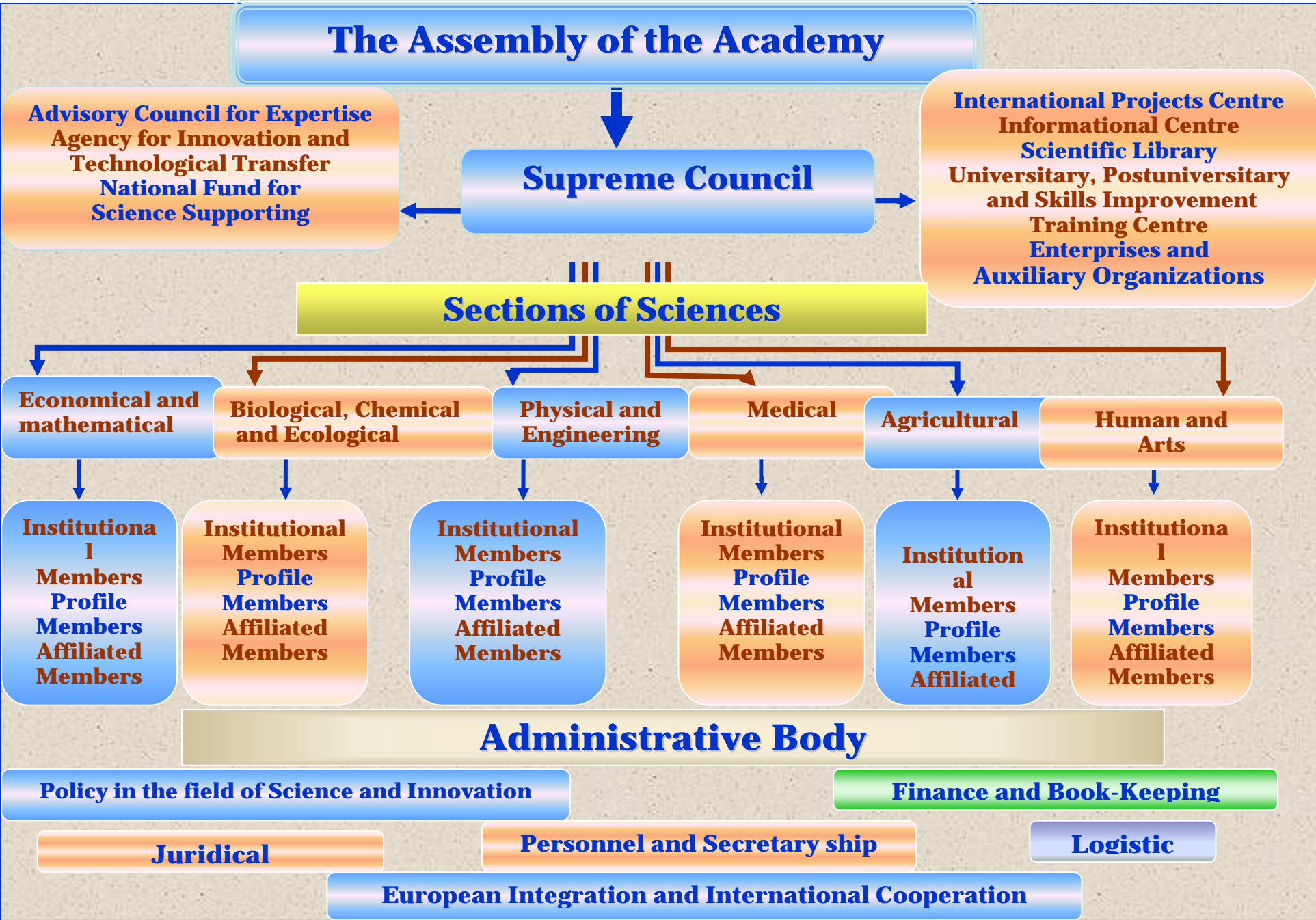
Today the research community faces a number of problems considerably complicating their position and limiting their freedom of activities. Researchers have limited access to internet – a very important means of international communication and source of information today. High fluctuation rate of personnel in the ministries complicates the communication with those institutions and affects the quality and the outcome of the policy making process. Another issue is Russified town of Tiraspol with whom all attempts to make any contact have failed so far. Due to ‘historical’ and political reasons almost all national heavy industry is in Transnistrian region which has been separated from Moldova and declared itself a republic. The existing national industry includes footwear production, textile, perfumery and pharmacy. Electronic industry did not survive in the changing times.

On account of scientific strength, main R&D activity is performed under the roof of Academy of Sciences. At present, in the Academy of Sciences, fundamental and applied researches are conducted in the following fields of science: problems of mathematics and informatics; theoretical physics; solid – state physics; micro- and optoelectronics; transfer processes in electric and magnetic fields; geological and geophysical processes; physical and technical problems of power engineering; chemistry of coordinated compounds; bioinorganic chemistry; physiology and biochemistry; microbiology; ecology; protection, renewal and rational utilization of flora and fauna; physiology of stress; genetics, medicine; history; linguistics and literature; philosophy; ethnography; art; economy, etc<sup>23</sup>. After the R&D reform, Academy of Sciences is responsible for technology transfer activities as well.

The share of foreign sources for R&D sponsorship of the fundamental sciences in Moldova is substantial. It accounted for almost 30-40% of the total amount of budgeting for 2003-2004. The share of commercial contracts for R&D for the Academy of Sciences did not exceed 10%. At the same time, some Research Institutes (e.g. ELIRI) as well as some private enterprises operating in science and technology received commercial contracts for R&D coming from abroad exceeding 50% of the total budgeting.

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<sup>23</sup> Academy of Sciences, Moldova. Booklet, 2004.



### 3.3.3.2. *Establishing NIP system in Moldova*

The Moldovan NIP was officially formed in September 1, 2003 although some services have been available earlier - since March, such as information dissemination, access to computer, consultations, information events in universities etc. At the present time the NIP personnel includes 4 part-time people, who are also involved in other tasks and obligations. They are all able to provide consultations on general issues of the Framework programme in addition to their own speciality. NIP activities are coordinated by the President of the Academy of Sciences of Moldova, who communicates on state level, signs official letters, opens meetings etc.

In addition to basic staff NIP includes also a network of thematic consultants – altogether 16 researchers covering:

- Health and Biotechnology (4 persons)
- Information Society Technologies (2 persons)
- Nanotech (1 person)
- Food (1 person)
- Energy (1 person)
- Environment (1 person)
- Innovation (2 persons)
- Socio-Economic Sciences and the Humanities (3 persons)

The continuously updated NIP database includes some 150 research institutions and ~700 researchers. In most of the universities the NIP team has managed to find a contact person. Unfortunately cooperation possibilities of universities with NIP depend on the attitude and willingness of their rectors, who make such decisions personally. Nevertheless universities have helped with consultations on thematic priorities, as there is no budget allocation for respective permanent NIP personnel yet.

Previous experience of the key person includes 12 years of consultations in INTAS information point, coordination of foreign relations in the Centre of Optoelectronics (import of equipment, customs formalities, visa formalities, communication etc), personal experience in international R&D cooperation as a PhD researcher in the Laboratory of Semiconductors etc. A lot of preliminary work and information search has been done out of office hours on a personal computer at home.

Project manager, scientific secretary of the Centre of Electronics, is also a contact person for nanotechnology and web master of NIP. He can be characterised by significant personal project management experience.

General level of knowledge is comparatively low, which conclusion has been drawn from the questions asked so far – covering every possible aspect of international cooperation, framework programmes, participation in projects, proposal preparation and submission etc. Thus, more trainings are needed for the research community addressing primarily, how to write a competitive proposal – administrative forms, eligibility criteria, selection of calls, partner search, eligible costs, on-line and off-line proposal preparation tools, proposal submission etc.

Moldovan researchers have experience with INTAS (since 1992 about 100 projects gaining more than 2,2 M€) and INCO-Copernicus (about 28 projects). 58 projects have been funded by the World Federation of Scientists in the years 2000 – 2006 (Switzerland), 7 by the International Agency for Atomic Energy, 10 by SCOPEs (Switzerland). More than 50 applications have been submitted to different calls of FP6 with only a few passing the threshold, out of which in case of 8 projects funding contracts have been signed with the European Commission.

In the field of environmental sciences the Republic of Moldova participates in 14 international joint projects supported by the *World Bank*, *United Nation Ecological Program (UNEP)*, *Global Environmental Foundation (GEF)*, *TASIS* and *EU*. During 2000-2006 CRDF has committed over 6 million dollars for the support of more than 200 projects. Around 1,200 scientists have participated in 20 CRDF Programs. CRDF has supported (about 6,0 mln USD) the scientific research projects and the creation of 4 Centers under the aegis of the Regional Experimental Support Center Program: the National Center for Material Study and Testing in Mechanics, Optoelectronics and Non-Conventional Energy; the Center of Advanced Biological Technologies; the Center of Research and Development of Electronic Instruments for Civil Use based on New Materials and Technologies; and the Research and Education Center.

There are two new Conventions signed between the International Association for promoting cooperation with scientists from the New Independent States of the former Soviet Union (INTAS) and the Republic of Moldova on June 09, 2005: *The Convention of Scientific Cooperation between INTAS and the Academy of Sciences of Moldova on Joint Collaborative Call for Research Projects* and *the Convention of Scientific Cooperation between INTAS and ASM on Joint Collaborative Call for Young Scientific Fellowships (YSF)*. In the framework of these calls the scientific community of the Republic of Moldova has submitted 60 Research Projects and 15 YSF, from which 12 Research Projects and 9 YSF are currently funded.

**Table 3.** SWOT analysis of the position of the Moldovan NIP system

Strength	Weaknesses
<ul style="list-style-type: none"> <li>• The NIP personnel has good experience with international projects</li> <li>• NIP personnel has received good practical training concerning the Framework Programme</li> <li>• NIP personnel has exemplary reach to the universities and research institutions.</li> <li>• Local NIP has experience in organising the Framework Programme related seminars with special emphasis on thematic priorities.</li> <li>• Effective system of thematic publications and compilation of information search manuals for the beginners</li> <li>• The entire NIP system is operating under the Academy of Sciences, which results in low fragmentation and good communication.</li> <li>• Strong support from the Romanian NCP and other R&amp;D support structures</li> <li>• The Academy of Sciences is nominated as national body responsible for innovation activity in Moldova</li> <li>• Willingness of the Academy of Sciences to maintain NIP also in the future under its roof</li> <li>• Growing number of young and active researchers taking the positions in universities and research institutions</li> <li>• New generation of researchers appointed to top management of R&amp;D institutions</li> <li>• New president of the Academy of Sciences with clear vision of the future of national R&amp;D system</li> <li>• Positive effect of restructuring of national R&amp;D system and introduction of the system of accreditation of R&amp;D institutions on the competitiveness of R&amp;D institutions</li> </ul>	<ul style="list-style-type: none"> <li>• All project accounts are transferred into one centralized budget in the Academy of Sciences – there are no separate accounts for international projects</li> <li>• Small number of bilateral S/T contracts (signed only with Hungary, Poland, Bulgaria, Russia, Ukraine, Slovenia and Montenegro) makes cooperation with other countries difficult</li> <li>•</li> <li>• There is only a limited national financing for the NIP activities, it is operating mainly on the INTAS grant. The government supports with existing infrastructure (office space mainly)</li> <li>• Communication with the INTAS office has been problematic, although slowly improving - funds are constantly delaying.</li> <li>• The available budget is insufficient for participation in trainings and information days</li> <li>• There is no national support to cover the costs for project preparation phase</li> <li>• There is no transport related research in Moldova</li> <li>• Great differences in the development level of different research fields</li> <li>• Limited communication skills</li> <li>• Low level of knowledge of foreign languages</li> <li>• <u>Very limited project preparation skills</u></li> <li>• <u>R&amp;D institutions with no accreditation have no access to public funding</u></li> <li>• <u>Lack of awareness of the possibilities offered by the Framework Programme for NIS country participants</u></li> <li>•</li> </ul>

<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Negotiations on bilateral S/T agreements are in progress with southern European countries and INTAS. With INTAS the agreement will be endorsed hopefully in one year's time</li> <li>• National financing for project preparation could enlarge the possibilities of successful participation for bringing in national experts and facilitating the communication with potential co-operation partners</li> <li>• Availability of co-funding for successful project proposals</li> <li>• R&amp;D funding grows proportionally to the growth of GDP</li> <li>• The share of R&amp;D funding will reach 1% of GDP by the year 2012 (0,18% in 2003, 0,45% in 2004)</li> <li>• Increasing general knowledge of EU policies and programmes</li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>• Low success rate in EU Framework Program is resulting in a very low motivation for participation and US provided grants are much more attractive to the potential participants, mainly due to simplicity of procedures.</li> <li>• Integration of Moldova into the European Research Area is problematic due to low national financing of local research.</li> <li>• Success of NIP activities depends still on INTAS grant</li> <li>• Discrepancies between the legislation of the Republic of Moldova and the EU</li> </ul>

### 3.3.3.3. Recommendations and opinions: NIP Moldova

New development in Moldova with respect to the restructuring of its national S&T system in 2005 will provide the Academy of Sciences with more responsibility for running national R&D system, which will potentially result in a bit stronger position of NIP also in this framework. It might be somewhat unbalanced to run the activities of NIP from the Academy of Sciences, as consultation is predominantly done with academic researchers, however the capacity of local industry in R&D activities is very low, and thus it is a prudent approach in the case of Republic of Moldova.

Therefore, the positive aspects regarding the establishment of NIP under the Academy of Sciences are basically the following:

- Solid position of the Academy in the framework of national S&T system can assist NIP structures in popularisation of Framework Programme and attract potential researchers into being involved in international EU R&D projects.
- High scientific and administrative qualification of NIP personnel plays important role in attracting Moldovan researchers into the activities of Framework Programme. This however is of utmost importance, as US funds tend to be far more popular finally leading to the transfer of knowledge bypassing EU.

Still, we have the following recommendations, which might to a large extent ever improve the performance of NIP as well as increase Moldovan participation in Framework Programmes.

1. Presently one of the most disadvantaged aspects of participating in EU R&D projects is the fact, that international funding schemes are administered centrally by the Academy of Sciences, which gives very limited independence for researchers, low flexibility and delays in funding. High interference by the state with individual R&D projects sets distinct frames to the participation and interest towards being involved into EU Framework programme, as it means higher administration and time horizons in parallel communication with the Academy and European Commission. Therefore, we would suggest redesign of the current schemes of *modus operandi* and have EU funds directly transferred to a separate account owned by the participating institution.
2. NIP should be proactive in communication with the Academy of Sciences and the Ministry with an aim to purport the endorsement of bilateral S&T agreements with INTAS and individual EU countries. It will provide better environment for initiation of different R&D projects and will enable Moldova to be involved actively in EU research undertakings.
3. The Academy of Sciences is a very suitable roof for NIP to operate, however in the future the Academy should take decisive steps in safeguarding financial sustainability of the NIP office. Once INTAS funds end, the Academy should find substitute funding from their own resources to maintain stability of actions. The experience of Estonia shows clearly the value of funding a separate National Contact Point office, which is the platform and initiator for many new projects and capacity-building of local research organisations.
4. As Moldova is a relatively small country, it cannot rely on mass participation of researchers in EU structures. Therefore, NIP should act as a catalyst in initiating different

projects themselves and attracting local partners into the projects with the view of long term capacity building. Moldova finds itself science-wise in similar position with Estonia, where most of the scientific groups are small and overloaded with work, however in Estonia we have managed to provide positive impulse by taking the lead in formation of international consortia and initiation of projects which have afterwards resulted in repetitive partner search and new projects. Thus, the NIP activity should in this case be much focussed on individual high level performers and proactive approach at their involvement.

5. It is most important to identify European leading R&D networks in the domain where Moldova has comparative scientific advantage. Further on, active dissemination towards these networks should be undertaken and placement into the network activity strategically pursued.

#### 4. Summary

The present concept paper for establishing national information points in the Ukraine, Belarus and Moldova aims to analyse the current state of S&T in the above countries and provide prudent and clear recommendations for organising the NIP activities and organisational structure based on this information.

The paper describes general S&T situation in these countries after the collapse of the Soviet Union, which had drastic effect also on local research activities, outlines the possibilities of these countries to participate in international R&D networks, predominantly in the context of Framework Programme, analyses advantages and disadvantages of different NCP set ups and applies the knowledge to the existing NIP structures in the Ukraine, Belarus and Moldova.

The core part of the paper is focussed on recommendations, which could be applied while developing the NIP structure in the NIS countries. We do not pretend to provide a panacea for all the problems existing in NIP activities, however we believe that some of the recommendations could significantly improve the performance of NIP and enforce the participation of NIS scientists in FP6.

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## Annex I. Different set-ups of FP6 NCP system across Europe

Country	n° of NCP staff (full-time equivalent)	n° of organisations involved	Types of organisations involved					If other, specify
			Ministry	Higher Education	Public research organisation	Private Enterprise	Other	
Austria	43	11	x				x	NPO's contracted by public bodies
Belgium	11	6	x				x	Governmental Agency, Business Federation
Bulgaria	NA	5	x	x	x	x		IRC
Cyprus	3,2	10	x	x	x	x	x	National Research Funding Organisation
Czech Republic	11	1					x	private not for profit organisation
Denmark	6	1					x	Authorised Technological Institute
Estonia	7	1					x	Private non-profit organisation
Finland	10	8	x		x		x	Governmental funding organisations
France	14	32	x	x	x		x	associations
Germany	40	12	x		x	x	x	Technology Transfer Agency, Public Private Partnership
Greece	11	5	x		x	x	x	
Hungary	5	3	x				x	National Atomic Energy Office, Hungarian Space Organisation
Iceland	3	4		x			x	
Ireland	7	10	x		x			Semi-State Agencies
Israel	14	1	x	x				
Italy	18	4	x		x			
Latvia	11	2					x	Professional NGO: Baltic Chapter of SPIE and IRC
Liechtenstein	1	1				x		
Lithuania	7	1					x	Agency for Intern. Science & Techn. Development Programmes
Luxembourg	1,5	1					x	National Innovation Agency
Malta	5	3	x	x		x		
Netherlands	31	1	x					
Norway	8	1					x	Research Council
Poland	46	12		x	x			
Portugal	11	18	x	x				
Romania	3	5	x	x	x	x	x	
Slovakia	5	10	x	x	x			
Slovenia	8	3	x					
Spain	9	8	x	x	x	x	x	National Agency for Technological Development
Sweden	12	3					x	Public body
Switzerland	22	12		x			x	Private non-profit organisation
Turkey	13	1			x			
United Kingdom	46	32	x	x	x	x	x	Govt owned contractor

NA=Not available