

Information Exchange in Science and Technology between the  
European Research Area and Eastern  
European/ Central Asian Countries



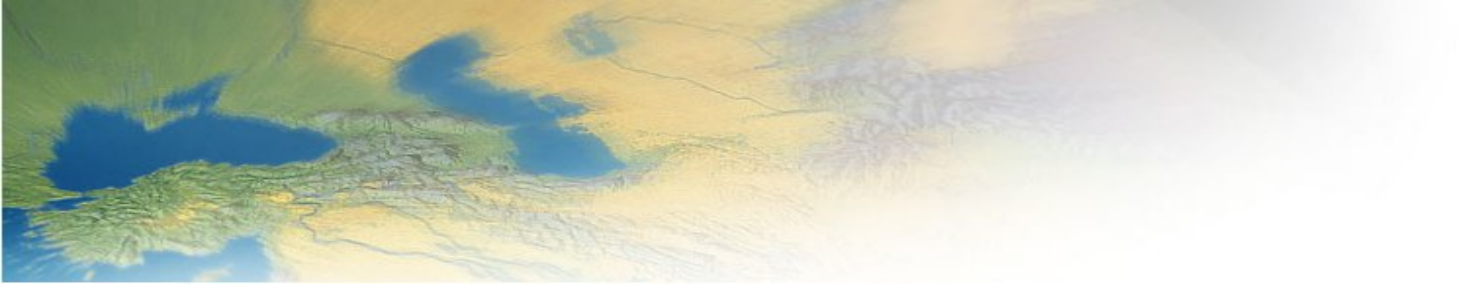
## **Moldova**

### Contry Report

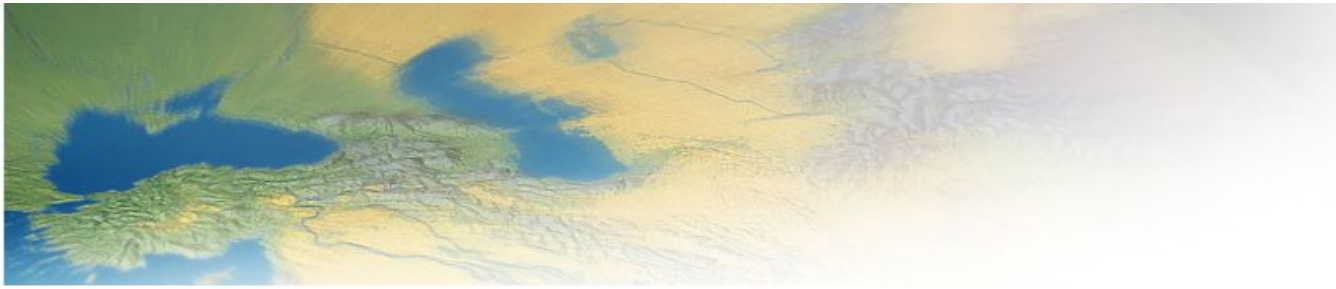
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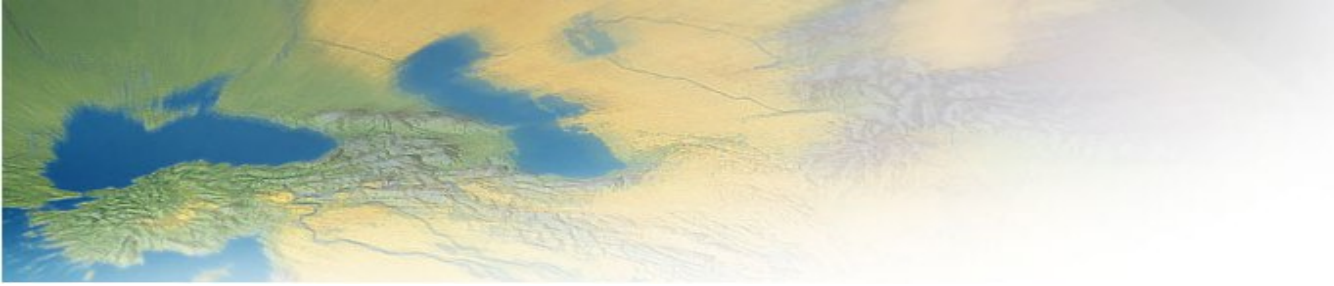


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## General information about Moldova

<b>Official name of country</b>	Republic of Moldova
<b>Population</b>	approx. 3.6 mln
<b>Area</b>	33843,5 km <sup>2</sup>
<b>Capital</b>	Chisinau
<b>System of Government</b>	Parliamentary Republic
<b>Head of Government</b>	Prime-minister of the Republic of Moldova – Vladimir FILAT, nominated on 25 September 2009, by presidential decree.
<b>Science Minister</b>	Academician Gheorghe DUCA - President of the Academy of Sciences of Moldova The Academy of Sciences of Moldova is delegated with Government competences with the view to realization of state policy in the sphere of science and innovation and the president of ASM is a member of the Cabinet of Ministers of the Republic of Moldova.
<b>Parliament</b>	The Parliament of the Republic of Moldova (Parlamentul Republicii Moldova) is a unicameral assembly with 101 seats. Its members are elected by popular vote every 4 years. The parliament then elects a president, who functions as the head of state. The president appoints a prime minister as head of government who in turn assembles a cabinet, both subject to parliamentary approval. Speaker of the Parliament – Mihai GHIMPU.
<b>Administrative structure</b>	Moldova is divided into thirty-two districts ( <i>raioane</i> , singular <i>raion</i> ); three municipalities (Bălți, Chișinău, Tighina); and two autonomous regions (Găgăuzia and Transnistria). The cities of Comrat and Tiraspol also have municipality status, however not as first-tier subdivisions of Moldova, but as parts of the regions of Găgăuzia and Transnistria, respectively. The status of Transnistria is however under dispute. Although it is



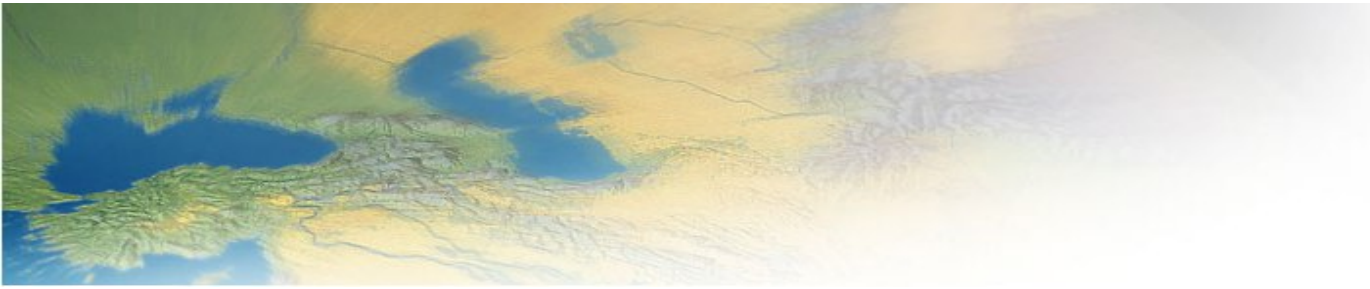
de jure part of Moldova and is recognized as such by the international community, Transnistria is not de facto under the control of the central government of Moldova. It is administered by an unrecognized breakaway authority under the name Pridnestrovian Moldovan Republic.

## Geography

The Republic of Moldova lies in the Eastern part of Europe and occupies an area of 33,843.5 square km. The capital of Moldova is Chisinau. On the North, East and South Moldova is surrounded by Ukraine, and on the West it is separated from Romania by the Prut River.

The total length of the national boundaries is 1,389 km, including 939 km with Ukraine and 450 km with Romania. The most northerly point is the village of Naslavcea (48°21' N 27°35' E), while the most southerly point, Giurgiulesti (45° 28' N 28° 12' E), which is the only settlement on the bank of the Danube. The most westerly point is the village of Criva (48°16' N 26°30' E) and the most easterly point is the village of Palanca (46° 25' N 30° 05' E).

The Republic of Moldova belongs to the group of countries located in the Black Sea Basin. It maintains close mutually advantageous commercial ties with these countries as well as the countries located in the Danube Basin. The southern border of the country extends almost as far as the Black Sea, which can be accessed through the Nistru Liman and the Danube River.



## S&T background

**(up to 2004, the year of adoption of the new Code on Science and Innovation which marked the turning point for the development of science and innovation in the Republic of Moldova)**

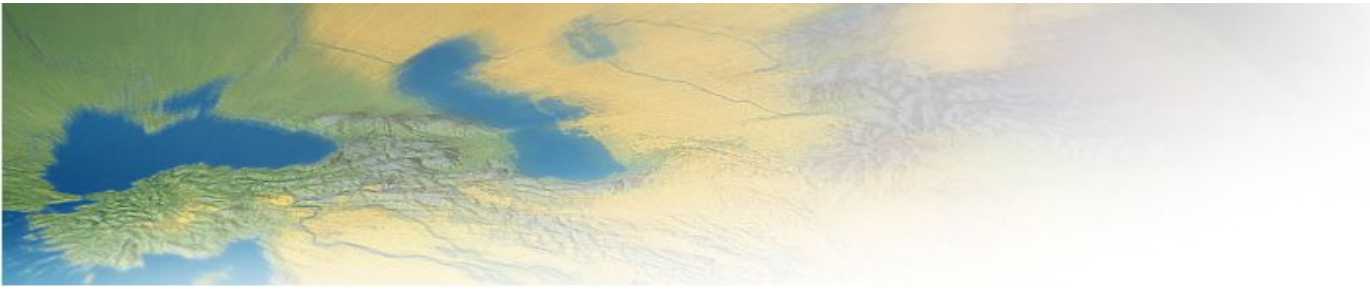
Analysis of the science area development in Moldova within the last 30-40 years has shown that it was developing mainly on the basis of both social requests and direct and indirect industrial needs. Historically, Moldova has been an agrarian republic, which reached good achievements in large-scale agricultural production. Mild moderate climate and advantageous geographical location in the Central part of Europe contributed to the increase on population. Mechanization in the agrarian sector led to the increase in people amount, which were not involved into this kind of production.

Since 1990s the Moldovan science has passed through a period of degradation. This led to the exodus of scientists abroad and ruination of the scientific and technical patrimony. The scientific potential was reduced by more than three times from 20 to 6 thousands researchers. The number of doctors-habilitat and doctors of science has decreased by one and a half time.

Due to the conservative forms and lack in flexibility with regard to the development of science and as a result of social changes in the Republic of Moldova, science was not demanded. Consequently, in the first years of independence the area of science and innovation had only inertial character, completely ignoring the needs of society, responsibility for the quality and condition of research elaborations, and have degraded significantly. The material research base, without capital investments in science and without renovation with new research instruments and tools, have been rapidly destroyed. However, the intellectual level of Moldovan scientists and researchers has remained rather high. This situation has become the result of the lack of balanced state policy in the sphere of science and innovation at that time, successful forms of its organization and transparent ways of budget financing. The prestige of research and innovation activity was extremely low, wits connection with the educational system was only formal, the forms of science organization remained unchanged and conservative, and the legislative framework had a rather regressive than stimulating character.

The main reason of the scientific potential decline was the sudden reduction of investments in science. In conditions when investments in scientific research constitute less than 1% of GDP this definitely leads to degradation of science and innovation. Thus, after gaining independence, the funding of science in the Republic of Moldova varied between 0.73 % (in 1990) and 0.18% (2000-2001) share of GDP, this index being in a continuous decrease.

The necessity of reform in Moldovan science matured. The reform in science began in 2004. The Code on Science and Innovation was ratified by Parliament on the Initiative of President of the Republic of Moldova on July 15, 2004.



## Research structure

### Characterisation of the research system

The main legal act which regulates the activities in the S&T domain of the Republic of Moldova is the Code on Science and Innovation. This code regulates legal relations related to the elaboration and implementation of the state policy in the field of science and innovations, activity in the field of scientific researches, innovations and transfer of technologies, scientific-technological information, accreditation of organizations in the field of science and innovations, attestation of scientific and scientific-pedagogical personnel of highest qualification, protection of intellectual property, legal status of entities in the field of science and innovations.

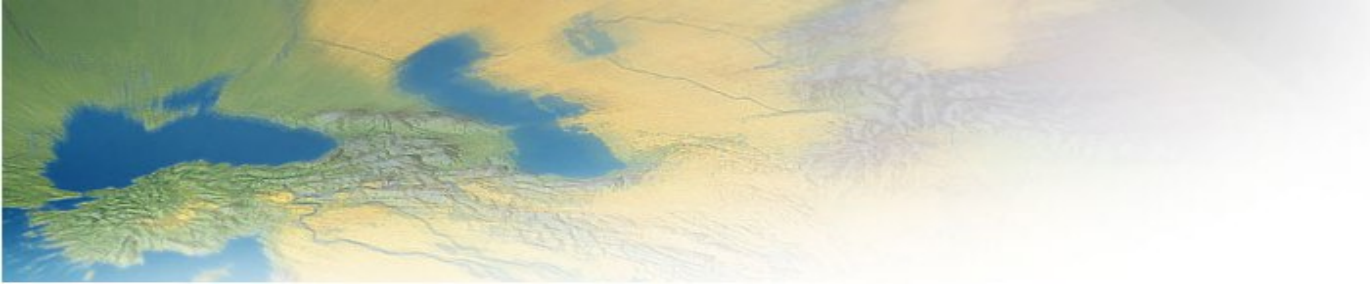
The Code was adopted on July 15, 2004 and it marked a turning year in the development of science and innovation in the country. Thus, the Code introduced two most essential changes in the role of the Academy of Sciences in science and innovation and these are:

1. The Academy of Sciences becomes the sole public institution of national importance in the field of science and innovation, the plenipotentiary coordinator of the scientific and innovational activities, the supreme scientific forum and scientific adviser to the public authorities.
2. The Academy of Sciences is authorized with the Government's competence in the field of scientific research, reinforced by the Partnership Agreement with the Government of the Republic of Moldova (presently for the period of 2009-2012). The Agreement authorizes the Academy to distribute all State funds designed for scientific research, allocated on a competition basis.

Besides, the Agreement stipulates the strategic priorities in the development of science and innovation, which are coordinated with the strategic directions stipulated by the European Union: Consolidation of the State of Law and utilization of cultural heritage with the perspective of European integration;

- Efficient utilization of human, natural and information resources for sustainable development;
- Biomedicine, pharmaceuticals and human health;
- Agricultural biotechnology, soil fertility and food security;
- Nanotechnology, industrial engineering, new materials and products;
- Efficient growth of the energetic complex, assurance of energetic security, including by using renewable resources.

Specific priorities and objectives for the period 2011-2014 are currently undergoing a process of consultation with the scientific community.



## **Structure of the Academy of Sciences of Moldova**

The Assembly is the Supreme leading body of the Academy of Sciences. It consists of full and corresponding members; 78 doctors-habilitat elected for a term of four years, representing scientific community of the Republic of Moldova. The Assembly approves the by-laws of the Academy of Sciences, elects the President of the Academy of Science.

It approves once in 4 years the Partnership agreement, confirms the policy of the Academy of Science in the science and innovation field and implements the strategy of this policy. It is competent to approve representatives of divisions in Assembly and to elect the representatives of scientific community, including higher education institutions, as a member of Supreme Council for science and technological development.

The Assembly examines and decides on the annual report regarding the results of activity in the science and innovation field and examines and approves strategies, programs related to the science and innovation field. It determines strategic directions in the science and innovation field.

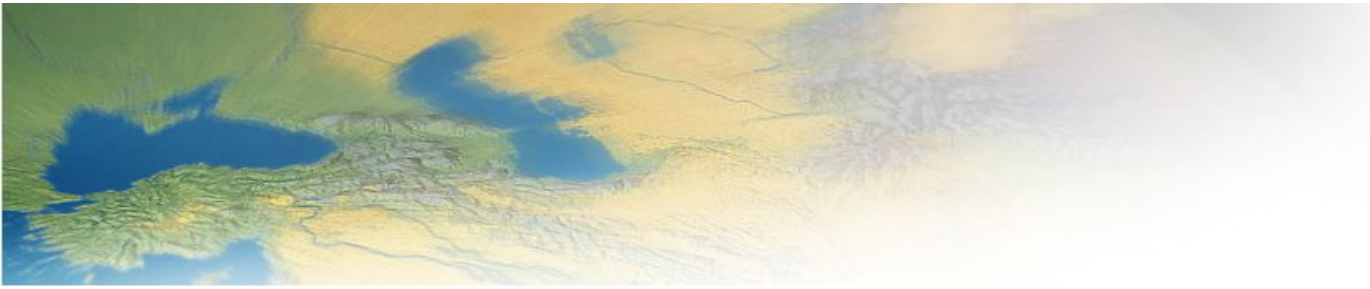
The Supreme Council for Science and Technological Development (SCSTD) is the executive body of the Assembly. It consists of 17 members: the President of ASM, First Deputy President, two Deputy Presidents and General Scientific Secretary, Coordinators of divisions of ASM and 6 representatives of scientific community, including higher education institutions and state agency for intellectual property, elected by the Assembly for a four year term.

SCSTD coordinates the elaboration of both the state programs, international scientific and scientific-technical programs in the science and innovation field and mechanisms for their implementation and monitoring. It coordinates and stimulates the activity in the field of innovation and technology transfer.

Its competence is distributing, on the basis of Partnership Agreement, of the budget allocations according to the strategic directions in the science and innovation field. SCSTD as well organizes the competition of the projects, financed from the state budget and elaborates mechanisms of monitoring, stimulation and implementation of state programs in the science and innovation field, development of markets for produces in this field, etc.

Within the Academy of Sciences of Moldova activate 3 scientific divisions and 2 subdivisions:

- Division of natural and life sciences, which includes 2 subdivisions on medical sciences and agricultural sciences;
- Division of exact and economic sciences;
- Division of social sciences and humanities.



Institutions evaluation and scientists' attestation is the competence of **National Council for Attestation and Accreditation (NCAA)**. The accreditation system of institutions from the field of science and innovation will give them the possibility to obtain financial support from the State Budget.

**State Agency on Intellectual Property (AGEPI)** is created on the basis of the Code of Science and Innovation. It represents the Republic of Moldova at the World Intellectual Property Organization and other international and interstate organizations on intellectual property protection. AGEPI supports and develops relations of co-operation with them as well as with profile establishments of other states.

**The Agency on Innovation and Technology Transfer (AITT)**, created according to the Code on Science and Innovation and authorized with functions on implementing innovation and technology transfer policies and strategies, promotes the development of innovation infrastructure in the country.

The main tasks of AITT are:

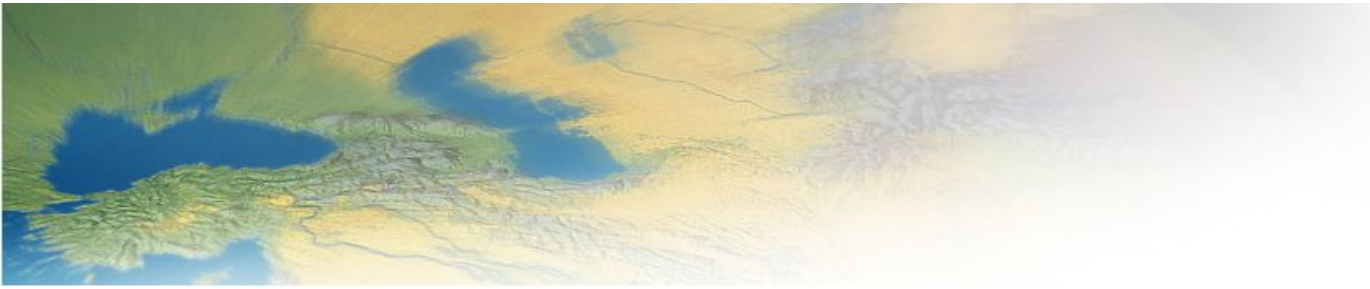
- a) implements the policies in the field of innovation and technology transfer;
- b) provides consulting on policy and legal framework development for innovation infrastructure;
- c) establishes strategic directions of innovation and technology transfer activities, reflected in programs and projects at all levels;
- d) participates in strengthening the relationship among research institutions, universities and entrepreneurship;
- e) coordinates the process of creation the innovation and technology transfer infrastructure;
- f) provides business assistance in the field of innovation and technology transfer.

In July 2007 the Law on Science and Technology Parks and Innovation Incubators No. 138-XVI of 21.06.2007 was approved and fiscal incentives were granted to the residents of science and technology parks and innovation incubators:

1. Exemption from payment of VAT (20%) on goods and services imported from abroad and of those bought on the territory of the Republic of Moldova.
2. Exemption from payment of customs taxes (5%) on imported goods and services.
3. Exemption from payment of income tax during three tax periods.
4. Low tariffs on premises leasing and on public utilities for the residents situated on the territory of the science and technology park or innovation incubator.

Additionally, these residents benefit of reduced rent rates and production facilities & offices as well as 95% of patent costs covered by AGEPI.

The Scientific-Technological Park "Academica", created in 2007, currently houses 27 residents - small and medium innovational enterprises from different areas. Although the



park was originally designed as broadly specialized, many residents of the Park are focused on the energy field, energy efficiency, renewable energy sources.

The Innovation Incubator "Inovatorul" having the mission to create favorable conditions for establishment and development of innovational start-ups, houses 6 residents.

Creation in 2008 of the Science Technology Park "Inagro" in the field of ecologically intensive and organic agriculture was imposed by the imperatives of the environment and reality and houses 15 residents. This park is based on a large and valuable set of assets consisted of buildings, plantations and agricultural land with multi-potential recovery potential (in Chisinau and Cahul).

Once the Agency on Innovation and Technology Transfer was created, the number of projects of technology transfer have raised from one in 2004 to 30 in 2009. The financing scheme is 50% of the costs are covered by AITT - 50% by the beneficiary (private sector).

### **Scientific-educational cluster "Univer SCIENCE"**

Within the Academy of Sciences of Moldova was created the scientific-educational cluster based on the University of the Academy of Sciences of Moldova, the ASM's Lyceum for gifted children and research institutes, scientific park and innovative incubator, which represents an association of specialized and competitive structures in research and education that can assure excellence in science, creating premises to the integration processes of research with education, as well as innovation premises between research and education institutes, state and private sector, commercial associations and other structures.

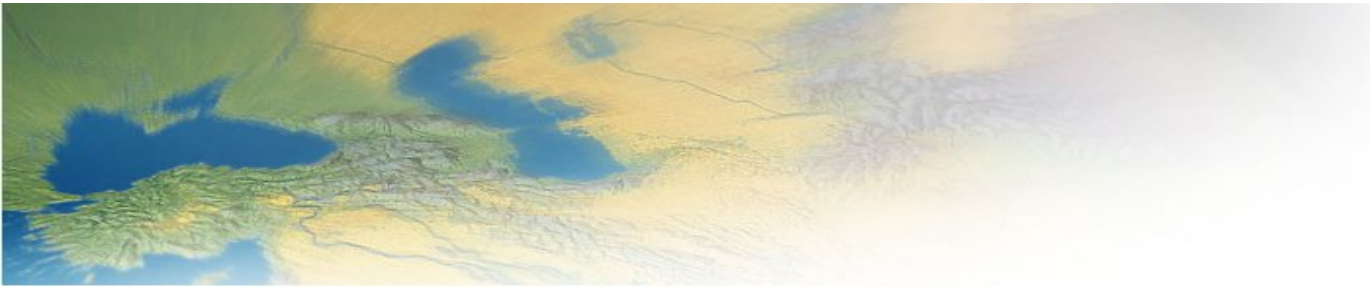
Specific objectives of the scientific-educational cluster:

- Professional education of researchers;
- High performance;
- Competitiveness based on scientific criteria, insuring specialization on domains;
- Growth of innovative capacity through program expansion;
- Management experience;
- Obtaining of management and marketing capacity in research-development.

The Lyceum for gifted children was founded in 2006 by the decision of the Government of the Republic of Moldova with the aim of providing a modern and quality education to gifted children from Moldova. Gifted children should be able to benefit from special educational conditions that would allow them to develop fully their abilities, for their own benefit and for the benefit of society as a whole.

University of the Academy of Sciences of Moldova (UnASM) was created with the purpose of a performing centre of the scientific staff training. The main goals of UnASM:

- Identifying and supporting gifted young people;



- Training of scientific staff at high performance, using the most successful achievements of the national and foreign systems of university and post-university education;
- Strengthening the synergy between science and education;
- Integration of educational activity and academic science;
- Training in learning managerial skills and communication of scientific researches, including those fundamentals;
- Fostering the development of relationships between science and business sector;
- Involvement of the youth in research during their formation as specialists;
- Attraction of renowned researchers within the country and beyond in the process of youth education in Moldova;
- To develop younger scientific-didactic staff within ASM;
- Establishment of the new strategy of science development in Moldova.

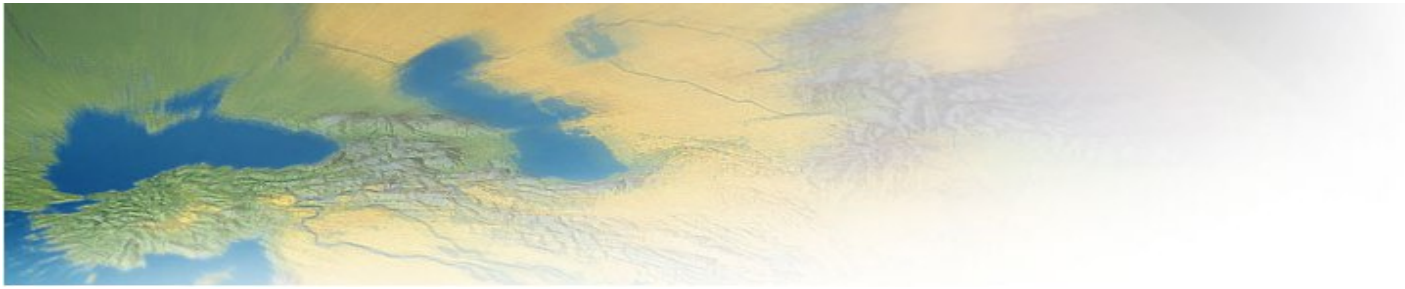
The main directions of activities:

- Implementing the university (1<sup>st</sup> stage ) and post university (2<sup>nd</sup> and 3<sup>rd</sup> stage ) training programs;
- Realizing scientific researches both fundamental and applicative, technical-scientific, experimental papers in different areas of physics, chemistry, biology, physiology, experimental medicine, electronics, material engineering, energy etc.

As opposed to other institutions of higher education in Moldova, the process of training in the UnASM is realized through integration of teaching with research, of science with technologies, of theory with innovation experience. The training program of UnASM include: Communication Program, Teaching and Learning Program, Business Administration, Technology and Society.

With the aim of fostering international scientific relations, the **Center for International Projects** (CIP) has started its activity in January 2009. CIP was created by the Academy of Sciences of Moldova, on the basis of Article 79 of the Code on Science and Innovation, and has the following general objectives:

- to promote and administer bilateral grant programs (currently the ones between the ASM and the Belarusian Republican Foundation for Fundamental Research, Federal Ministry of Education and Research of Germany, Romanian National Authority for Scientific Research, Russian Foundation for Basic Research, Russian Foundation for the Humanities, Ministry of Education and Science of Ukraine) and international projects in the sphere of science and innovation (including FP7 projects with the participation of the ASM);
- to offer managerial, technical, financial and legal assistance to the members of Moldovan scientific community, including consulting activities, seminars, trainings and other activities in the framework of international and bilateral projects.



**The Association of Young Researchers of Moldova "PRO-Science"** (ATCM PRO-Science), registered by the Ministry of Justice in 2004, started as an initiative group in 2000. The activity of the association is dedicated to the public benefit and as a legal base serves the national legislation and the internal rules. The ATCM PRO-Science represents a non-governmental, non-political and non-commercial association, having as main goal creation and development of an open frame for the junior researchers in order to implement the values of the social democracy in the following activity areas: education, teaching-learning domain, science, research and development, international cooperation.

## Research indicators

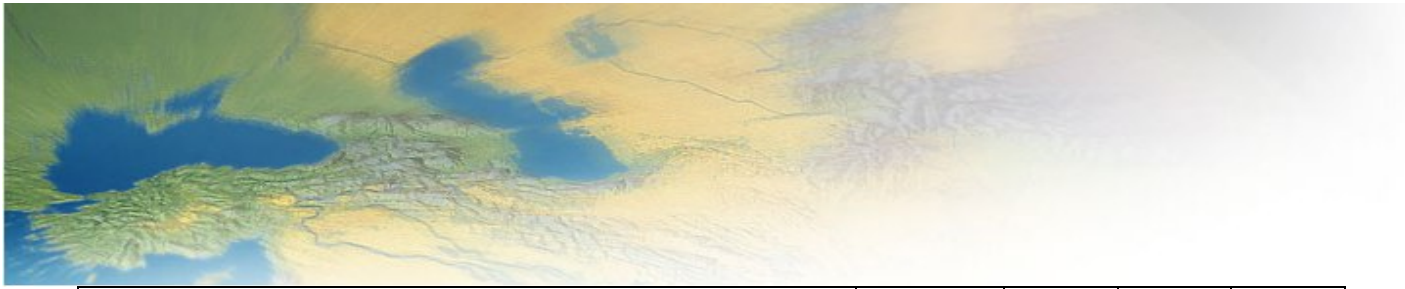
<b>NBS Indicators<sup>1</sup></b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
R&D allocations in % of GDP*	0.21	0.22	0.37	0.46	0.65	0,70	0,54
Organizations conducting R&D activity	79	86	88	67	76	70	n/a
Personnel employed in R&D activity	6858	6696	6678	6299	6522	5314	n/a
Scientific researchers	2737	2725	2583	2507	2592	3471	n/a
Granted patents <sup>2</sup>	241	256	269	288	268		

<b>ASM Indicators<sup>3</sup></b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Total number of projects, including:	523	629	647	603
- <i>Institutional</i>	315	310	314	314
- <i>Projects in the framework of state programs</i>	66	109	112	96
- <i>Independent projects for young researchers</i>		36	68	52
- <i>Projects of technology transfer</i>	24(33)	43	37	30
Personnel employed in R&D activity				
ASM personnel				
Scientific researchers	2945	3100	3247	3279
Doctors-habilitat	392	420	405	418
Doctors of sciences	1310	1300	1356	1398
Young researchers (up to 35 years)	680	875	711	985
Young researchers by total number of researchers (%)	23	28,15	21,9	30,4
PhD students	541	516	1664	1747
Number of publications, including	5056	6385	6788	4659

<sup>1</sup> According to the National Bureau of Statistics (NBS) reports

<sup>2</sup> According to State Agency on Intellectual Property (AGEPI) reports

<sup>3</sup> According to the Academy of Sciences of Moldova (ASM) annual reports



- Articles in national peer reviewed journals	1688	1608	1798	1273
- Articles in international peer reviewed journals	785	792	722	1771
- Reports at international conferences	1626	1647	1858	509
Patents	169	186	213	251
Organization of international events, including	192	128	134	47
- national	123	75	95	39
- international	69	53	39	8
Awards	173	202	206	276

The statistical system of the Republic of Moldova, coordinated by National Bureau of Statistics, is now in reforming process according to the European Strategy of our country.

However, due to the fragmentation of the statistical system in the Republic of Moldova (besides National Bureau of Statistics collect R&D data Academy of Sciences of Moldova, State Agency on Intellectual Property, National Council for Attestation and Accreditation and they use different methodologies and statistical forms; some indicators are calculated only at ASM for annual reports) it is rather difficult to have a clear overview on R&D in Moldova from the statistical point of view.

ASM with the support from UNESCO launched a project for introducing in the Moldovan scientific sphere the statistical indicators accepted by EUROSTAT.

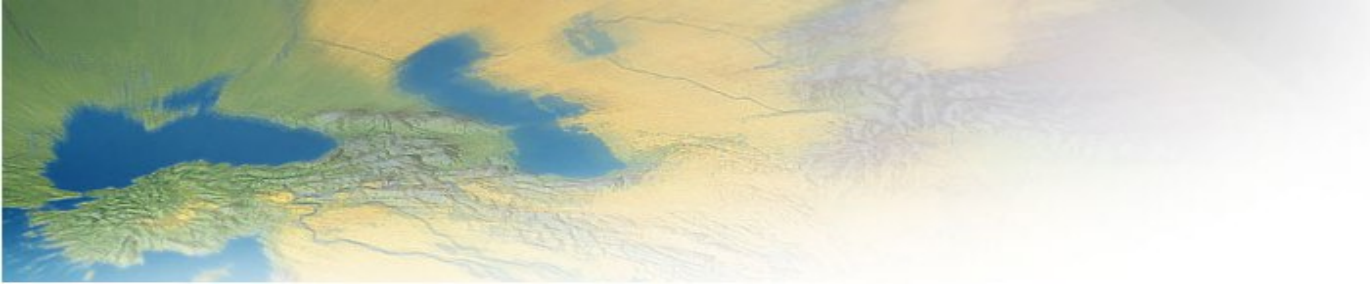
## Research funding system

The Academy of Sciences is authorized with the Government's competence in the field of scientific research. Therefore, all budget funds designed for scientific research are allocated only through the Academy of Sciences on a competitive basis.

In 2009, the budget for science was allocated for 603 projects<sup>4</sup>, including:

- 314 institutional projects (basic research – 123 & applied research – 191);
- 96 projects in the framework of state programs;
- 51 grants for young scientists;
- 30 of technology transfer;
- 68 in the framework of Agreements between ASM and the Russian and Belarusian Funds of Fundamental Research;
- 70 international grants.

<sup>4</sup> Activity indicators of the Academy of Sciences of Moldova, Annual Report 2009



## Research policy

### Context of research policy

The **Code of the Republic of Moldova on Science and Innovations** regulates legal relations related to the elaboration and implementation of the state policy in the field of science and innovations, activity in the field of scientific researches, innovations and transfer of technologies, scientific-technological information, accreditation of organizations in the field of science and innovations, attestation of scientific and scientific-pedagogical personnel of highest qualification, protection of intellectual property, legal status of entities in the field of science and innovations.

### Research policy: objectives and priorities

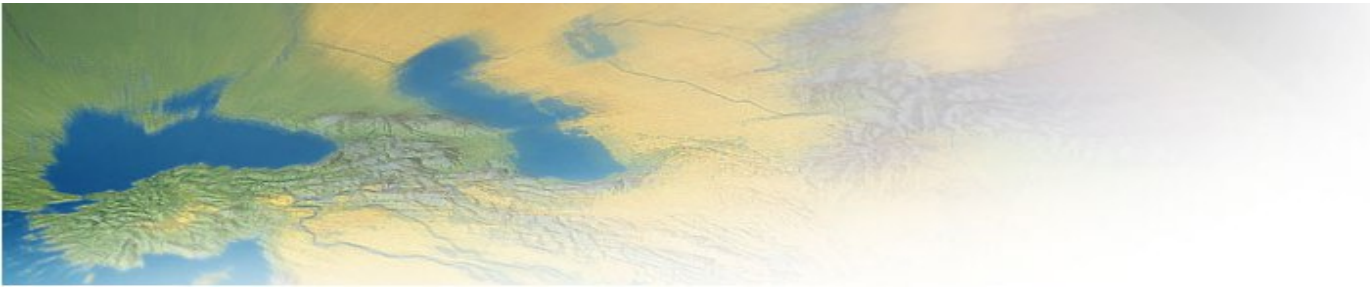
#### The goals and tasks of state policy in the field of science and innovations

1. The basic goal of the state policy in the field of science and innovations is a stable socio-economic and human development in the Republic of Moldova, based on maximum stimulation and use of scientific, scientific-technical and technological potential, oriented to creation and commercialization of competitive and ecological pure produces, services, processes.
2. The tasks of the state policy in the field of science and innovations are:
  - a) complex integration of fundamental and applied researches within the innovation activity from all fields of economic, social, cultural, political and informational life of the Republic of Moldova;
  - b) development and efficient use of scientific and technological potential;
  - c) ensurance of progressive structural reformation of the field of production of goods and services, increasing their efficiency and competitiveness;
  - d) protection of the environment, monuments of natural and historic heritage, rational use of natural resources, saving and developing biological and cultural diversity;
  - e) protection and development of informational resources of the country;
  - f) consolidation of the interconnection between science and education.

#### Strategic directions of the activity in the field of science and innovations

(1) State policy in the field of science and innovations envisages concentration of resources and organization of the activity on strategic directions of the field of science and innovations.

(2) Strategic directions of science and innovations are identified taking into consideration current trends at the world level, of the national potential and necessities of the social social-economic development of the country.



## **Policy making and coordination**

### **The Parliament:**

- ) adopts legal acts, which regulate the organization and functioning of the field of science and innovations;
- b) approves strategic directions of the activity in the field of science and innovations;
- ) approves the amount of financial resources, which area allocated to support the activity in the field of science and innovations;
- d) ratify international agreements regarding cooperation in the field of science and innovations.

The **Government** concludes with the Academy of Sciences a Partnership agreement, which on the basis of delegation to the Academy of Sciences of powers to carry out the state policy in the field of science and innovations, determines:

- ) the strategy of development of science and innovation activity;
- b) strategic directions of the activity in the field of science and innovations;
- ) amount of financing in the field of science and innovations in accordance with Law on state budget taking into consideration the permanent increase of the necessities for its financing.

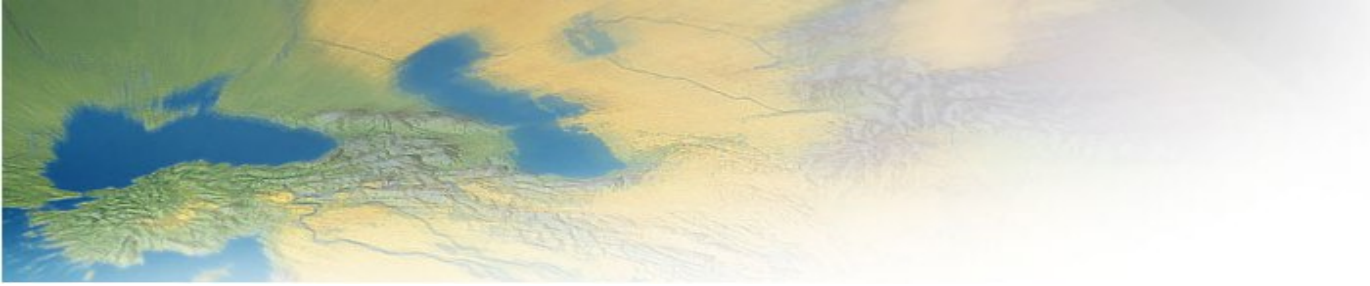
### **The Government also:**

- ) organizes elaboration of legal acts related to science and innovations, and submit them to the Parliament for examination;
- b) creates economic mechanisms of stimulation of the activity in the field of science and innovations and the utilization of the results of such of activity;
- ) concludes intergovernmental agreements on cooperation in the field of science and innovations;
- d) supports the creation of the infrastructure of the field of science and innovations;
- ) award prizes in the field of science and innovations.

The **Academy of Sciences of Moldova** as the sole public agency of the national significance in the field of science and innovations is the plenipotentiary coordinator of scientific and innovation activity, supreme scientific forum of the country and scientific consultant of the public authorities of the Republic of Moldova.

### **Academy of Sciences on the base of the Partnership Agreement with the Government:**

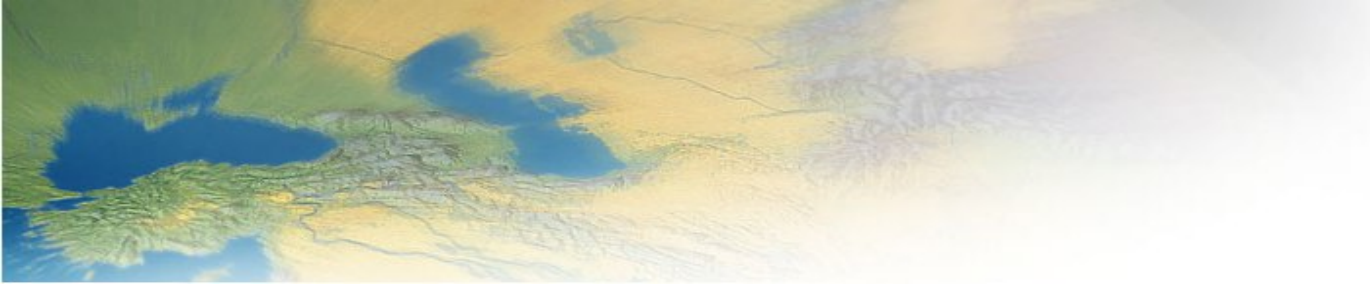
- a) elaborates and promotes the strategy for development of science and innovation activity, realizes the state policy and performs the conceptual activity in the field of science and innovations;
- b) identifies strategic directions in the field of science and innovations;
- c) distributes budget allocations in accordance with the strategic directions in the field of science and innovations;
- d) organizes the elaboration of state programs, international scientific and scientific-technical programs, as well as mechanisms of their implementation;



- e) elaborates the mechanisms of monitoring and stimulation of implementation of the results of state programs in the field of science and innovations and creation of the market of produces of this field;
- f) organizes competitions of projects in the field of science and innovations, financed from state budget;
- g) assures financing of publication of scientific magazines and scientific works;
- h) assures financing of subordinated scientific libraries;
- i) elaborates prognosis of development of science and innovation activity;
- j) promotes the policy of preserving, rational placing and development of intellectual potential, property and infrastructure in the field of science and innovations;
- k) supports the activity in the field of innovations and transfer of technologies;
- l) contributes to the implementation of the results of scientific researches and advanced technologies;
- m) promotes national and world values in the field of science and culture;
- n) organizes and if necessary carries out scientific-methodological coordination of the activity of the entities in the field of science and innovations, which are part of the Academy of Sciences, and entities in the field of science and innovations, which are not a part of it, which receive subsidies from the state budget;
- o) effectuates, at the request, scientific-methodological coordination of the activity of the entities in the field of science and innovations, which are not a part of the Academy of Science and which do not receive subsidies from the state budget;
- p) gives consultation, performs expertise and review of bills of laws and other regulations, related to the policy in the field of science, economic, social, cultural and other fields of social life;
- q) performs training of the scientific personnel through graduate, post-graduate education and advanced training courses, supports and promotes scientific schools;
- r) collaborates on the international level with similar institutions.

The **Academy of Sciences**, among other things, also:

- a) organizes and carries out fundamental and applied scientific researches, elaborates advanced technologies;
- b) elaborates state conceptions, projects and programs, gives advise to public administration authorities regarding the strategic directions of economic, social and humanitarian policy of the state;
- c) submits to the Government conclusions regarding the situation in the field of research- development and recommendations for stimulation of innovations and transfer of technologies;
- d) organizes the activity for elaboration of syntheses regarding the trends of social-economic, technological and human development of the country;
- e) determines the training policy of scientific and scientific-pedagogical personnel by means of organization of an efficient system of Master, PhD and post-doctor I studies on the basis of the decision of the Supreme Council for science and technological development;



- f) determines and develops its organizational structure, following the strategic directions in the field of science and innovations and social-economic priorities of the country etc.;

### **National research programmes: State programs in the field of science and innovation**

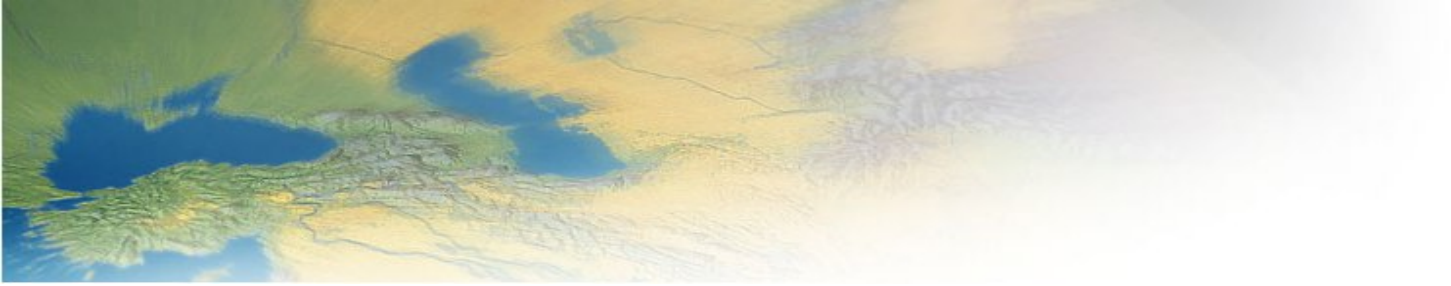
State program in the field of science and innovations represents a complex of projects in this field and a form of realization of state policy in the field of science and innovation. However, these programs are restricted to the participation of accredited Moldovan organizations in the sphere of science and innovation.

State programs in the field of science and innovations are developed by the Government and scientific community in the person of the Academy of Sciences in accordance with the strategic directions of activity in this field. The list of state programs is included in the Partnership Agreement.

State programs in the field of science and innovations are financed partially or integrally from the state budget in accordance with the results of the contest organized by the Academy of Sciences.

A project in the field of science and innovations is a complex of activities, interconnected through performers, terms and resources, which are realized by organization in the field of science and innovations regarding the solution of a problem (achieving of a common goal) and is aimed to:

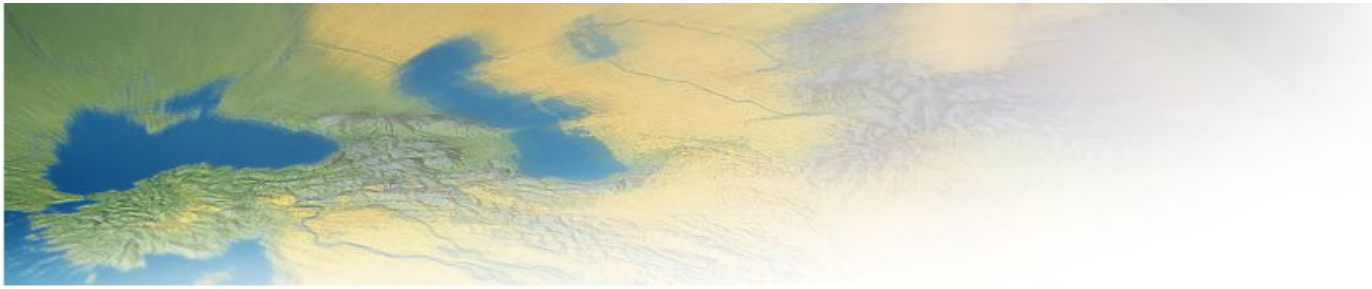
- development of fundamental and applied knowledge and of their application methods;
- development of infrastructure of the field of science and innovation, improvement of laboratory, electronic and diagnostic equipment, polygraphic and publishing equipment;
- improvement of technical-economic parameters of applied technologies and/or manufactures produces (executed works, performed services) with the purpose to ensure their competitiveness on the world market;
- creation and/or assimilation of technologies and/or new types of produces (works, services), which are results of the implementation of an object of intellectual property (patent, industrial design, topography of integrated circuits, know-how etc.), for which the manufacturer has necessary documents (certificate, patent etc.) or license issued by the owner of the object of intellectual property, or which must be elaborated for the first time in the Republic of Moldova and/or are more competitive, possessing technical-economical significantly better parameters and increase the national scientific-technical and technological level.



Projects, as a rule, are a component part of a program in the field of science and innovation executed by organizations, performing respective activity.

Projects shall meet the following requirements:

- to be oriented to solve the most important problems of social-economic development of the state and correspond to strategic directions of development of science and innovations, stated in the Partnership Agreement;
- to contain scientific or technological novelty and correspond to professional level;
- to be scientifically and financially founded, to define the expected results and methods of their transparent monitoring.



## International co-operation in research, science and technology

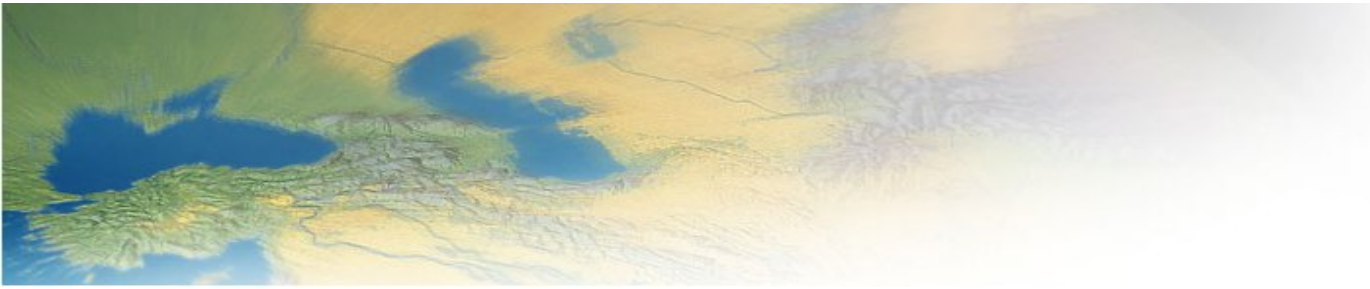
### Scope and objectives

- Integration into the European Research Area;
- Initiation and fostering of relations with similar institutions abroad;
- Facilitation of access to world-class research infrastructures abroad;
- Participation in international grant projects and programmes;
- Representation of Moldovan scientific community in international scientific organizations;
- Enhancing the international visibility of Moldovan scientific accomplishments;
- Taking over of success practices in the R&D area.

### Co-operation with EECA-countries

The Academy of Sciences of Moldova (ASM) collaborates on the basis of bilateral scientific agreements with various research institutions from the **Russian Federation** (The Russian Academy of Sciences, The Russian Academy of Agricultural Sciences, The Russian Fund of Fundamental Research, the Russian Foundation for Humanities), **Belarus Republic** (National Academy of Sciences, the State Committee for Science and Technologies of Belarusian Republic created on the basis of inter-governmental agreement between Republics of Belarus and Moldova regarding the cooperation in science and technology, and the Republican Fund of Fundamental Research), **Ukraine** (Ministry of Education and Science of Ukraine, National Academy of Sciences and the Academy of Agricultural Sciences – including a Convention that implied a collaboration between the Academy of Agricultural Sciences “Gheorghe Ionescu- i e ti” from Romania and the Academy of Agricultural Sciences from Ukraine, the Southern Scientific Center of the Academy of Sciences of Ukraine), **Azerbaijan** (signed an Agreement on scientific cooperation with the National Academy of Sciences in June 2007), as well as international organizations like: **International Association of Science Academies** (MAAN), **Organization of the Black Sea Economic Cooperation** (BSEC), **the Science & Technology Center in Ukraine** (STCU) and cooperation in the framework of **Organization for Democracy and Economic Development** between Georgia, Ukraine, Azerbaijan, and Moldova (GUAM).

Thus, within the framework of the bilateral Agreement on scientific and technological cooperation between ASM and the **Russian Fund for Basic Research** signed on 18.03.2005 and additional protocols, were financed 44 projects for the 2006-2007 time



frame, in 2008-2009 were implemented another 45 projects, selected out of 88 proposals submitted to both parties. Currently, a new call is under negotiation.

In the framework of the Agreement on organization of the joint call between ASM and the **Russian Foundation for Humanities**, signed on 23.01.2009, a bilateral competition was organized in the beginning of 2009 and 9 projects were accepted for financing out of 24 submitted.

Within the cooperation Agreement between ASM and the **Belarusian Republican Fund of Fundamental Research** signed on 03.05.2007, and additional protocols, were financed and implemented 16 research projects for 2008-2009, other 19 moldo-belarus projects were launched in the beginning of 2010 for a period of one year

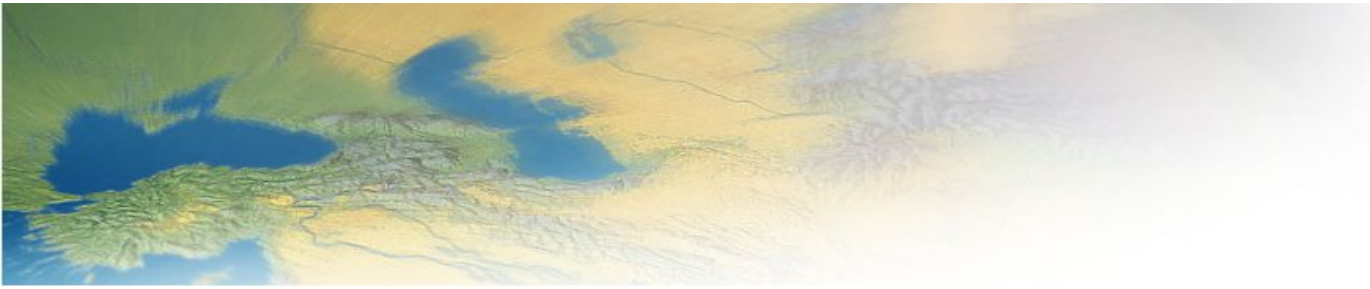
Based on the Agreement on cooperation in the field of education, science and culture between the Parliaments of Ukraine and the Republic of Moldova, signed on 20.03.1999 and additional protocols between ASM and the **Ministry of Education and Science of Ukraine**, 18 projects were launched in the beginning of 2010, selected out of 73 proposals submitted.

## **Co-operation with EU-member states and Associated Countries**

Policy dialogue in the field of research and development between the European Union and the Republic of Moldova continues in the framework of the EU - Moldova Cooperation Committee and Subcommittee no.4 on "Energy, Environment, Transport and Telecommunications, Science and Technology, and Training and Education" meetings. In the beginning of 2010, negotiations of the EU-Republic of Moldova Association Agreement were launched, the Chapter on "Research, Technological Development and Demonstration" was included as part of the Working Group IV on "People to People Cooperation".

Eastern Partnership, launched early 2009, brought new opportunities in the view of enhancing the scientific cooperation between the European Union and the Republic of Moldova, Belarus, Ukraine, Georgia, Azerbaijan and Armenia, declared as the core objective of the Platform 4 'Contacts between People' Work Programme 2009-2011 in the field of research: increase the participation of Eastern Partners in the opportunities for cooperative research, capacity building and researcher mobility, offered by the Seventh Framework Programme.

Following the official request of the Republic of Moldova to associate to the Seventh Framework Programme expressed in May 2008, a short-term Action Plan „Moldova Knowledge Excellence Initiative" was launched, aimed at strengthening the scientific potential and management skills of RDI organisations for participating in FP7, thus consolidating the role of science and innovation in the general process of the country's development. The Action Plan was approved by the Decision no.230 of the Supreme



Council for Science and Technological Development of the Academy of Sciences of Moldova on 27th of November 2008.

In this context, by the Decision of the Government of the Republic of Moldova no.515 of 17 August 2009, the National Committee for Association of the Republic of Moldova to FP7 was created. The newly created National Committee has the role of promoting and monitoring the process of association and the measures undertaken for the advancement of Moldova's participation in FP7 and is composed of representatives of Ministries, at the level of Deputy Minister, other central public authorities and state institutions, targeted by FP7 priorities.

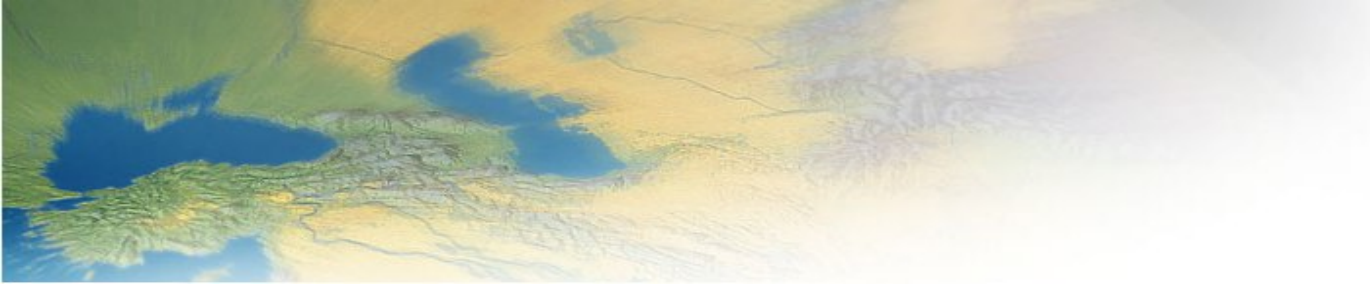
On a bilateral level, ASM has concluded Agreement on scientific cooperation with Academies of Sciences from the following EU-member states and associated countries: **United Kingdom, Poland, Hungary, Bulgaria, Romania, Montenegro, Turkey, Austria** and the **Czech Republic**.

In March 2008 was signed a Memorandum of Intentions on scientific and technological cooperation between the Academy of Sciences of Moldova and the **German Federal Ministry of Education and Research**, on basis of which were implemented two Open Calls for collaborative research project proposals in 2009 and in 2010, respectively. Each year, 10 different projects were accepted for funding. As agreed between funding parties, the project proposal submitted to these Calls must encompass 2 components: (1) basic & applied research component; and (2) a pre-feasibility study component for further collaborative research project proposals under future bilateral calls or other programmes such as the EU Research Framework Programmes (FP7).

In the framework of the S&T Cooperation Programme between the **Romanian National Authority for Scientific Research** (ANCS) and the Academy of Sciences of Moldova for the years 2010-2012, signed on 23.10.2008, a collaborative Call for Proposals was announced in December 2009. The particularity of the Programme is one of its aims to facilitate the integration of the Moldovan scientific community into the research and development system of the European Union, preparation of Moldovan teams to participate in community programmes, especially the Seventh Framework Programme, as well as to develop towards the collaboration within regional programmes as those of BSEC.

In 2010, negotiations on launching similar cooperative programmes with the **French National Center for Scientific Research** (CNRS), the **Italian National Research Council** (CNR) and the **Ministry of Education, Youth and Science of Bulgaria** have begun.

Cooperative activities are also carried out in the framework of the following organizations: **Organization of the Black Sea Economic Cooperation** (BSEC), **NATO Science for Peace and Security Committee**, **All European Academies** (ALLEA), **Central European Initiative** (CEI), **International Union of Academies** (UAI-IUA), **the**



**International Council for Science (ICSU), Central and Eastern European Networking Association (CEENet), International Atomic Energy Agency (IAEA), UNESCO** etc.

## **EU-funded cooperation/ projects**

Since the 7<sup>th</sup> Framework Programme was launched, 94 project proposals with the participation of Moldovan research groups (including research institutions, higher education institutions, SMEs and NGOs) were submitted and 15 accepted for funding, in the following themes: Health – 3; ICT – 1; Transport – 1; INFRA – 2; SME – 1; INCO – 3; IRSES – 3.

In 1994, Moldova joined the Tempus programme. Its initial focus was on university management, curriculum development, and teaching staff retraining in the fields of social work, communication studies, modern European languages, and economics. Since 2000, Moldovan non-academic actors — in particular government organisations, and to a lesser extent, enterprises — have gradually become more active in Tempus projects.<sup>5</sup> For the period of 2009-2011, 8 projects with Moldovan partners were selected for funding.

The gradual integration into the **European Research Area** is greatly connected to the modernization of the information access in the areas of science and innovation. The informational environment in the area of research and education in the Republic of Moldova is based on the infrastructure of the network RENAM (Research and Educational Networking Association of Moldova), created and continuously developed on the basis of grants provided by NATO (Science for Peace and Security Programme) and the European Commission (FP6 and FP7). The RENAM network has an external channel for internet traffic (capacity of 155 Mbps) that is connected to the academic cross-European network GEANT.

In the framework of the Program on Scientific Co-operation between Eastern Europe and Switzerland (SCOPEs), as a result of the first open call for the period of 2009-2012, were submitted 18 joint project proposals with Moldovan research groups (4 institutional partnerships and 14 joint research projects) out of which 10 projects were approved for financing (1 IP and 9 JPRs). In the framework of SCOPEs 2005-2008 were financed 15 projects (5 IPs and 10 JPRs) with Moldovan participation.

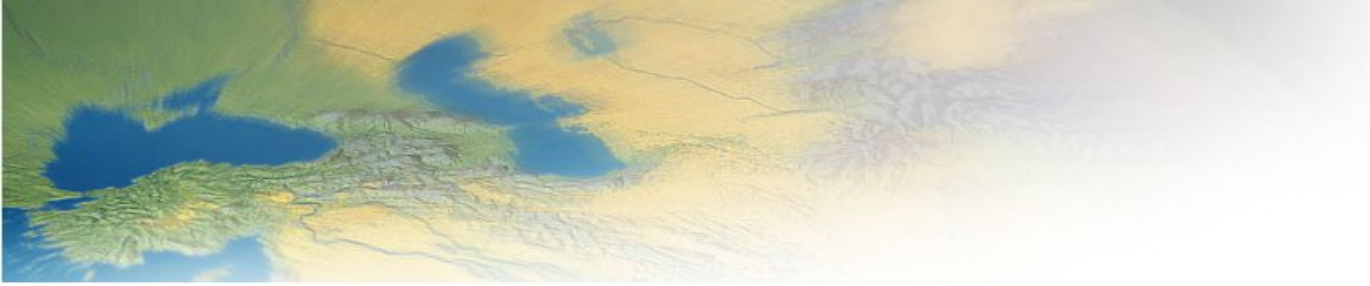
## **Further co-operations**

A great support for the Moldovan science development is granted by the **U.S. Civilian Research & Development Foundation (CRDF)** through the Moldovan Research and

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<sup>5</sup> „Participation of Moldova in Tempus“

<http://ec.europa.eu/education/programmes/tempus/countries/impact/moldova.pdf>



Development Association (MRDA) its partner organization created in 2000 within a Cooperation Agreement between the Government of the Republic of Moldova and CRDF. Up to 2008 CRDF jointly with MRDA have committed about 8 million dollars to support more than 250 projects within 38 grants competitions. In the implementation of these projects were involved more than 2000 scientists.

The Academy of Sciences of Moldova is one of the institutions that promote the values of **NATO Science for Peace and Security Programme** in the Republic of Moldova. European integration and international collaboration in the fields of fundamental and applied scientific researches is an important aspect of science policy in Moldova. Various projects and workshops were implemented in cooperation with NATO Partner Countries, in the fields of geology, agriculture, energy, environment, ICT and others.

Since the opening of the **Science & Technology Center in Ukraine (STCU)** Office in November 2006 in Chisinau, 16 grants were allocated to Moldovan organizations, with a total cost of approx. 1,85 mln USD.

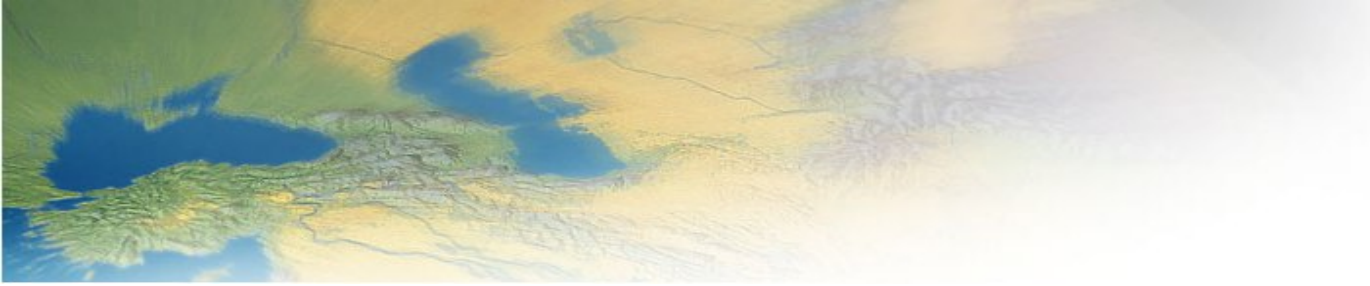
## Major international events in the S&T field

In the period of **4-5 May 2007**, the Academy of Sciences of Moldova, together with UNESCO Office in Venice (BRESCE), the UNESCO Office in Moscow and the International Council for Science (ICSU), organized the Conference of the Academies from Eastern and South-Eastern Europe with the title **“Global Science and National Policies: the role of Academies”**, attended by over 50 representatives from 23 countries and international organizations.

Main topics of the Conference represented: science for knowledge and sustainable development; mitigation of natural and human-induced environmental disasters; science education; gender issues in science; science and national development; role of Academies in the SEE countries. Within this Conference, the scholars recognized ASM as a unique model of science management, being recommended its implementation in the states with similar particularities as of the Republic of Moldova.

In the period of **18-21 of September 2008**, the International Conference for the Central and Eastern Europe, Balkans, Caucasus and Baltic States on **“Science & Education Policies”** in Chisinau was organized by joint efforts of the Academy of Sciences of Moldova and the Ministry of Education and Youth of the Republic of Moldova, with the support of the UNESCO Office in Moscow, Central European Initiative, the U.S. Civilian Research and Development Foundation (CRDF), Office of Naval Research Global (ONRG) and Moldovan Research and Development Association (MRDA), among others.

The programme of the Conference addressed several challenges affecting science and higher education policies today, mainly: strengthening international impact of national



research and education programs; strengthening research in higher education; developing a knowledge-based economy; stemming and reversing brain drain.

As a result of the Conference, were issued two documents: Final Communique & Declaration, as a contribution to developing better science and higher education policies in the regions targeted by the Conference and beyond. As well, these documents constitute a contribution of the states of represented regions to the World Conference on Higher Education (Paris, July 2009) and World Science Forum (Budapest, November 2009).

Full reports presented during both above-mentioned Conferences were published by the UNESCO Office in Venice and Regional Bureau for Science and Culture in Europe (BRESCE) in "Science Policy Series" Volumes no. 6 and no.7, respectively.

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