

Summary report on research accreditation

I. General information

Name of organization	Institute of Ecology and Geography
Organization type (<i>to underline</i>)	Research institute High education institution Ministerial research institute
Research mission of organization	Institute's mission is to organize and conduct basic and applied scientific research on evolution, structure, functioning ecological and geographical systems and their basic components, their modification under the action of biotic, abiotic and anthropogenic factors, to environmental protection, efficient use of natural resources, estimate human impact and ecological security, sustainable development country's economy, training of highly qualified specialists in doctorate and postdoctorate.
Strategic research direction (s)	Strategic direction No. 2: "The functioning of ecosystems, biodiversity and sustainable use of natural resources "
Evaluated period	2005-2009
Web of organization	http://ieg.asm.md

II. Research capacity (annual average for evaluated period)

Total number of employees	168					
Number of scientific researches	88					
Number of researches who possess honorific titles, scientific degrees, scientific and scientific-didactical titles	ASM full members	ASM corresp. members	Professor	Associated professor	Dr. hab.	Dr. (PhD)
	2	1	3	2	4	40
Number of researches involved in international projects	FP7		STCU	Bilateral		Others
			4	17		7
Number of young researches (under 35 years old)	Dr. (PhD)		PhD students		Others	
	1		15		17	
Financial resources (thousand MDL)	Public budget 4649,3		International projects/grants 117,3		Research contracts 1517,9	
Distribution of expenditures (thousand MDL)	Salary 4198,5		Infrastructure development 1068,4		Other training of qualified specialists 9,9	
Expenditures for infrastructure development (thousand MDL)	Equipments 607,2		IT infrastructure 275,2		Endowment of experimental resorts 153,6	
List of 3 basic research methods, installations, technologies (per accredited field)	<p>1. It was performed zoning national territory by the degree of manifestation of late spring frosts. Beneficiary: INCP "URBANPROIECT".</p> <p>2. Recommendations developed methods for determining the allowable limits of harmful substances in the flow (runoff) to surface conditions of the Republic of Moldova. Normative construction. Beneficiary: Ministry</p>					

	of Construction and Regional Development RM. Chisinau, 2009, 130 p 3. Local plans developed and implemented four Environmental Action villages Costesti (Ialoveni) Bulboaca (Noi), Siren (Straseni) and Hrușova (Criuleni) developed recommendations for the management of natural resources in Chisinau.
List of provided scientific services	Making of paid expertise and opinions on materials related to the profile of the Institute, including environmental expertise on import or new technologies and plants;
List of editorial activities	Currently IEG publishes in cooperation with other institutes two journals: "Bulletin of ASM. Life Sciences» and "The Environment". The published journals serve as a source for academic Scientific Library, which perform exchange of scientific literature about 120 centers in 40 countries, which contribute to enriching the information sources researchers from the Republic of Moldova.

III. Distribution of number of research projects and themes during evaluated period

Institutional projects	2005 12	2006 3	2007 3	2008 3	2009 3
Projects in the frame of State Programmes	2005 1	2006 1	2007 1	2008 1	2009 1
Technological transfer projects	2005 -	2006 -	2007 -	2008 1	2009 2
Projects for equipment procurement	2005 -	2006 -	2007 -	2008 -	2009 -
Projects for young researches	2005 -	2006 -	2007 -	2008 -	2009 -
Projects in the frame of bilateral programmes	2005 -	2006 3	2007 3	2008 1	2009 -
International projects/grants	2005 1	2006 -	2007 -	2008 -	2009 1
List of 3 representative international projects/grants	<p>1. International research projects CRDF-MRDA, BGP-II, ME2-3032. <i>The zoning of Ecological Vulnerable Areas in the Republic of Moldova: GIS application techniques</i>. Term performance: 2003-2005. Project leader – Dr. V. Stegărescu.</p> <p>2. International research projects 06.31CRF. <i>Studying of thermo-hydrodynamic regime influence in the Black Sea basin on the climate change in the Republic of Moldova territory</i>. Term performance - 2006-2007. Project leader – Dr. hab. M. Nedeaľcov.</p> <p>3. International research projects NATO Sfp No: 983287. <i>Landslide susceptibility assessment in Central Part of Republic of Moldova</i>. Term performance – 2009-2012. Project leader – dr. N. Boboc.</p>				
Research contracts	2005 11	2006 6	2007 12	2008 11	2009 8
List of 3 representative research contracts	<p>1. Contract with National Ecological Fund. "Developing of market economy mechanisms to create collection and distribution of rent from natural resources and environmental factors". In 2005. 100.000,0 lei.</p> <p>2. Contract with National Ecological Fund. Develop and publish the national report "State of the Environment in the Republic of Moldova". Chisinau, 2005, 2006, 2007. 84.000,20 lei (2005), 99.800,0 lei (2006), 109.330,0 lei (2007).</p>				

	<p>3. Contract with National Institute for Research and Design in spatial planning, urbanism and architecture "URBANPROIECT". "Natural resources and their evaluation for object no. 14602 "National Spatial Land Plan", 2006-2007, 254.000,0 lei.</p> <p>4. Contract with CET-1. Implementation of vanadium extraction technology from waste electric power consumption of oil. 2008, 80.000,0 lei.</p>
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IV. Scientific publications

Total number of publications abroad	Books (1 monography + 1 dictionary)	Chapters in books 1	Journal papers 92
Total number of publications in ISI journals and books	Books -	Chapters in books -	Journal papers -
Total number of publications in the country	Books 25 + 3 National Report (ro) + 3 National Report (en)	Chapters in books 21	Journal papers 138
Total number of conference abstracts	International abroad 207	International in the country 80	National 81
Total number of publications in the collection of works	International abroad 19	National 209 National Report + 15 other collection	
List of 5 representative publications (per accredited field)	<p>1. Constantinov, T.; Nedeačov, M.; Rapcea, M. Changes in the thermal regime and conditions of winter for thermopile crops and fruit. Chisinau: Printing Academy of Sciences. 2005, 124 p.</p> <p>2. Ursu, A. Pedogeographical districts and regional differences of use and protection of soils. Chisinau: Printing ASM, 2006. 232 p.</p> <p>3. Dediu, I. Treaty of theoretical ecology. Chisinau: Ed. Phoenix, 2007, 558 p.</p> <p>4. Sandu, M.; Spataru, P.; Arapu, T.; Lupascu, T. Biochemical Oxidation – a Pathway for Ammonia Removal from Aquatic Systems. In series: NATO Science for Peace and Security Series C: Environmental Security. "Methods and Techniques for Cleaning-up Contaminated Sites". <i>ESP.982358</i>, 2007. p. 142-146. www.springer.com/.</p> <p>5. Stegărescu, V.; Kuharuk, E.; Nedeačov, S. Gamma-ray scintillation spectrometry in the radioecological studies in The Republic of Moldova. In: Environment & Progress. Cluj- Napoca, 2008, nr. 12, p. 449-454.</p>		
List of 5 citations	<p>1. Ursu, A. Pedeo-geographical districts and regional particularities in soil utilization and protection. Chisinau: Printing ASM, 2006. 232 p</p> <p>2. Dediu, I. The Ecology of populations. Chisinau: Phoenix Publishing, 2007. 177 p.</p> <p>3. Dediu, I. Systemic Ecology. Chisinau: Phoenix Publishing, 2007. 295 p</p> <p>4. Dediu, I. Treaty of theoretical ecology. Chisinau: Phoenix Publishing, 2007. 558 p</p> <p>5. Begu, A.; Brega, V.; Duca, Gh.; Drucioc, S.; Donea, V. Vegetable crops with energetically potential. Chisinau: Ed "Bons Offices" Ltd, 2009. 168 p.</p>		

V. Innovation outputs

Total number of patents	Registered in the country 3	Registered abroad	Implemented -
Total number of new developed methods and technologies	Registered -	Non-registered 1	Implemented -
Total number of new scientific products	Registered -	Non-registered 53 - maps	Implemented -
Total number of scientific outputs for central and local authorities (draft of law, strategies etc.)	58		
Total number of scientific outputs for educational institutions	Handbooks for high education 6	Handbooks for pre-university institutions 13 - Atlases	Delivered university courses 34
List of 5 representative innovation outputs (per accredited field)	<ol style="list-style-type: none"> 1. "Method of the ammonia content calculating in natural waters (Practical Guide). Chisinau, CEP USM, 2005, 20 p. Ministry of Environment, IES. Social and economic effect not calculated. 2. Sustainable development. Problems and ways to solve // Guidelines for local authorities. Chisinau, 2005, 40 p. Public Administration. Social effect. 3. Tourist map, scale 1:600.000. Chisinau: Julian, 2005. Ministry of Education of the Republic of Moldova. Social effect. 4. Methodological guide: "Methods and rules for evaluation and management of soil quality". Centre of Applied Soil Science. Farms and farmers. 2007. Social effect. 5. Current Status - Waste Types and Amounts. // Technical Assistance for Review of Existing Legislation and Drafting of Regulations. April, 2008. World Bank, 97 p. World Bank. Social effect. 6. INSTRUCTION on the assessment of damage caused as a result of destruction of soil resources of soil fertile layer mixing it with the parent rock. Ministry of Environment, IES, 2009. Social effect. 		

VI. Major scientific and innovation achievements

Short description of main scientific results and its confirmation (by awards, citations, development of international projects etc.)	<ol style="list-style-type: none"> 1. Academician Tatiana Constantinov was awarded the Order of the Republic, for personal contribution to the preparation and editing Edition Encyclopedia "The Republic of Moldova", September 8, 2009. 2. Academician Andrei Ursu was awarded the "Order of Honor" (2009) and the Medal "D. Cantemir" for obtained the valuable results in research, management science and training of highly qualified. Decision of CSSDT, 28.08.2006. 3. Bronze Medal, Chisinau - Lupascu T., Arapu T., Sandu M., Spataru P., Mosanu E. Continuous process of water purification of nitrite. Patent no. 3727. Date Posted: BOPI no. 10/2008 of 2008.10.31. INVENT INFO International Exhibition, Chisinau, 24 to 27 November 2009. 4. Corresponding member Ion Dediu. Romanian Academy Award "Gr. Antipas" for "Treatise of Ecology" in 5 volumes. 5. Diploma and Gold medal: Bounegru T., Conunov T., Gutanu V., Bulimaga C., Botan V. for "Methods for neutralizing demetallization wines obtained from hexacyanoferrate (II) of potassium" and "Procedures for neutralizing
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	<p>wine containing Prussian blue". Inventors Society of Romania, second edition, Iasi, 26 - May 29, 2005, ECOINVENT 2005.</p> <p>6. Diploma and Silver Medal, Iasi, Romania. Lupascu T., Arapu T., Sandu M., Spataru P., Mosanu E. Process of nitrites Water purification. Patent No. 3567. Date Posted: BOPI no. 4/2008 of 2008.04.30. Exhibition of Creativity and Innovation EURO INVENT, Iasi, Romania, 09.05.2009.</p>				
Number of organization' invited speakers at international conferences	2005 3	2006 -	2007 2	2008 2	2009 -
Short description of technological transfer and innovation results and its certification by implementation	<p>1. It was done first version of the structure and divisions of Atlas officer, maps stairs and determined their location on the atlas pages, fixed content, the presentation of maps, thematic maps prepared for different scenarios under "natural conditions and resources." Version was developed by the author some parts of maps, which are to be included in sub compartments "Geomorphology" and "Climate", "Soil", "Population", "Environmental status", "Animals", "Supporting materials".</p> <p>2. It was collected and summarized materials for implementing new technologies to create thematic maps data to develop integrated tourist routes.</p>				
Number of defended dr. hab. and dr. theses per year	2005 -	2006 1 dr.	2007 1 dr.	2008 1 dr.	2009 1 dr. hab.

VII. Present/further involvement in the Seventh Framework Programme (FP7): specific programmers' (Cooperation, Ideas, People, Capacities) of interest and its sub-divisions.

1) Institute of Ecology and Geography now has a Multilateral international project within the FP7 BLACK-SEA-ERA-NET 11.820.08.01 BSEN / A " Radiation background of Black Sea coastal environment " (2011-2013). Project leader, Dr. V. Stegărescu

Will be evaluated the degree of soil pollution with radionuclide's ¹³⁷Cs and ⁹⁰Sr area north, center and south of the country which drain into the Black Sea compared to the previous natural radiological fund.

2) For the future the Institute of Ecology and Geography will:

- **Build on opportunities for the Republic of Moldova to participate in FP7 projects in domain of ecology, environment protection and geography.**

The participation in FP7 is not individual, but is conditioned to the achievement of a consortium of several countries, which is coordinated by an institution European Area (EU member states or associated countries to FP7). In this context, since the analysis of topics for participation will be conducted by an international panel, requires justification of the proposed themes both scientifically and regional policy in line with European Union research.

The Commission Communication to the Council and European Parliament "A strategic European framework for international science and technology cooperation" (released in Brussels, 24.9.2008, COM, 2008, 588 final) welcomes and encourages the intensification of international scientific and technological cooperation and promoting access universal information and communication technologies, particularly those of the European Neighbourhood Policy.

In the Republic of Moldova, Academy of Sciences is the host institution for FP7 National Contact Points and Information Society Development Institute hosts the National Contact Point for FP7 in information and communication technologies.

- Work with National Contact Points, which are designed to inform, consult and assist potential applicants in the submission of projects in FP7.

VIII. Accredited research field and its evaluation by the National Council for Accreditation and Attestation of the Republic of Moldova (very good/good/satisfactory).

Accredited research field: „*Evolution of geoecosystems and elaboration of environmental and natural resources geoinformational system*”

Evaluation by the National Council for Accreditation and Attestation: Good

IX. Category (A/B/C) attributed by the National Council for Accreditation and Attestation of the Republic of Moldova to the organization

Attributed Category: B

X. Institutional development actions planned for the next 5 years (maximum ½ page).

IEG is an institutional member of ASM and all the powers and activities are based on the Code for Science and Innovation (education, research, etc.).

a) MAIN research directions:

- Dynamics and evolution of natural and anthropogenic geo- and ecosystems in regional, local and trans-boundary levels;
- Elaboration of Geographical Information Systems of environment and natural resources;
- Integral monitoring of environment and ecological restoration.

b) Medium term priorities:

- Assessment of regional trends and climate change impact resource processes landslide and gulling on geo-systems; setting direction and degree of land resources change in the country and the areas pedo- geographical, reasoning regional systems of wise use and effective protection.
- Assess the impact of anthropogenic and risk factors on the quality of environmental components (water, air, soil and biodiversity), elaboration of passports and developing conservation measures to extend the State Protected Natural Areas.
- Developing of recommendations on harmonization with EU legislation of normative legal acts on environment; scientific rationale of sustainable development paths based on factor analysis - national study.

c) Teams of scientific research. The planned projects (2011-2014):

- 11.817.08.05A. Natural and anthropogenic factors impact on geo-and ecosystems in the Republic of Moldova in order to improve natural resource management and conservation of representative areas. Scientific leader – ASM corresp. Member Ion Dediu.
- 11.817.08.04F. Creation of scientific information bases to optimize the current territorial organization in terms of environmental change. Scientific leader - dr. hab. Maria Nedeaľcov.

d) Training of qualified specialists in specialities: ecology, environmental protection and natural resources' rational use; meteorology, climatology and agro meteorology; radiobiology; tourism; supporting a minimum one per year of PhD thesis.

e) Foster involvement of thematic scientific seminar in the institute activity by presenting master, doctoral and postdoctoral theses themes; of quarterly and annual doctoral student's reports, postdoctoral scientific results, etc.

f) Active involvement of the Scientific Council in determining of the institute development priorities, realization and completion of plans and programs of activities in research projects underway and those planned, elucidating the principles of solving problems of highly qualified scientists.