

Georgian National Science Foundation

Annual Report

2006

Science for Development

Tbilisi, 2007



Coordination: Natia Jokhadze

Contributions: Revaz Asatiani, Zurab Khidesheli, Vazha Lomidze, Vakhtang Alania, David Chichua, Lela Khubutia, Theodore Dolidze, Nikoloz Bakradze, Tsiala Berishvili, Eka Lezhava, Eka Butliashvili, Nino Demetrashvili.

Compilation and graphic support: Lela Khubutia

Publishing management: Nino Demetrashvili

Translation: Valeri Sarjveladze

Language Editor: Jeffrey Silverman

Graphic Design: Maka Tsomaia

TABLE OF CONTENTS

I	OPENING ADDRESS BY THE MINISTER OF EDUCATION AND SCIENCE OF GEORGIA	4
II	ADDRESS DELIVERED BY THE DIRECTOR OF THE GEORGIAN NATIONAL SCIENCE FOUNDATION	5
III	EVENTS, FACTS, ACHIEVEMENTS	7
IV	ACTIVITY	13
	1. State Science Grants Competition	13
	1.1. Registered Project Proposals	15
	1.2. Competition Results	18
	1.3. Funded Projects	20
	2. Individual Short-term Travel Grants Competition for Participation in International Scientific Events	28
	3. International Cooperation	29
V	FINANCIAL ACTIVITY	32



Alexander Lomaia

Minister of Education
and Science of Georgia

Several years ago it was difficult to imagine that funding of scientific projects in Georgia would be possible by the Georgian National Science Foundation. Following independence, practically no structure or institution remained unchanged to some extent. The only sphere that continued its routine without any changes was the system of science management.

Thousands of renowned Georgian scientists continued to work and create arising out of the conditions of an outdated administrative-command management system. The Academy of Sciences, which in general represents a classical model of an association of leading scientists, had been granted administrative and financing responsibilities. Such management model in the Soviet Union generally served the interests of the military-industrial complex and the assigned ideological tasks for ruling regime. Moreover, higher education and scientific-research institutions were artificially separated from each other within the system. Communist authorities did not allow the concentration of a powerful intellectual potential at universities. Consequently the system was not designed to challenge the interests of a concrete scientist or a group of scientists. In order to obtain the required financing, scientists were forced to overcome many bureaucratic barriers, first at a scientific-research institution and then – within the Academy of Sciences.

The aim of the reforms being implemented by the Georgian Government within the system of education and science is the building of a knowledge-based society. To accomplish this, the system is mandated to assist in the economic development of the country and to contribute to a dynamic upgrading of the quality of education.

Advanced and successful systems of science management are characterized by competitive, international peer-review funding mechanisms,

a high level of integration between scientific-research and higher education, as well by gradual and consistent increasing of R&D funding, mostly targeted towards the strategic development goals of the State.

Science reform in Georgia is developing in this very direction. We should not, however, forget the importance of the preservation and continued development of existing and effective scientific potential for the eventual success of the reform.

Among the steps made towards the system reform, a well-deserved place was occupied by the National Science Foundation, established in 2005, the immediate function of which was to bring to life modern mechanisms of evaluation and financing of scientific projects.

In 2006, for the first time in our country's history, the Foundation carried out the State Science Grants Competition, in which 988 applications from 142 organizations took part. Over five hundred foreign peer-reviewers from the largest scientific and educational centers of developed countries were engaged in the objective, competent and individual per-reviewing of project proposals submitted under the terms of the competition.

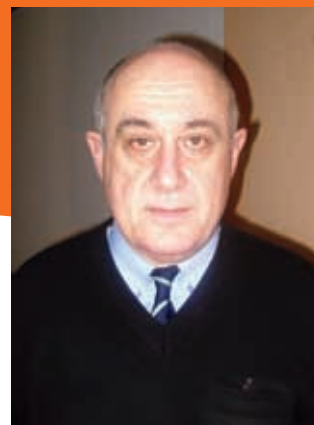
As a result of the transparent and consistent evaluation procedures, projects were funded not only in state institutions but also in private and non-governmental organizations – such an approach having no precedent in Georgia.

Moreover, aside from the main State Science Grants Competition, the Foundation managed to organize several other competitions as well: short-term individual travel grants, which allowed participation in international scientific events; grants to purchase scientific equipment and grants for acquisition scientific literature for libraries of universities.

I would like to wish the National Science Foundation more successful subsequent years. The activity of the Foundation is a serious prerequisite for further development of the educational and scientific potential in Georgia, which, in turn, reflects on the well being of our citizens and the future of our country.

Archil Motsonelidze

Director of the Georgian National Science Foundation



I would like to first thank all the organizations and individuals who actively supported the Foundation and helped carrying out important activities in 2006. Special mention should be made of the decisive role of the Ministry of Education and Science of Georgia in the successful fulfillment of our defined tasks and objectives. I would also like to note the active support of the Georgian science community and its collaboration with us in many important issues.

The Georgian National Science Foundation was established under a Presidential Decree issued numbered №653 of 17 July 2005 with the purpose of ensuring the development of science and its financial support through state scientific grants.

The main objective of the Foundation is to organize state competitive grants through state funding, and to provide for fair and open competition on the basis of individual evaluations by independent international and local peer reviewers, with established principles of transparent and free competition in order to best identify and strengthen the scientific potential of Georgia. GNSF aims to harmonize Georgian science with international standards, to further develop the Georgian cultural heritage research, to contribute to the world science achievements, and to further scientific research towards the creation of innovative technologies.

In 2006, the Georgian National Science Foundation, for the first time in Georgian history, organized and held a science grant competition, which stimulated a considerable amount of interest and led to an unprecedented level of activity among local scientists.

The Foundation accomplished the following priority tasks in holding the competition:

- Building of a competitive model by using the “hands-on” experience of competent international science foundations;
- Drafting Legal Support and publishing an Operational Manual on the State Science Competitive Grant System in the Georgian and English languages on the basis of the established model;

- Creating the necessary software to track a complete cycle of the Competition administration process;
- Generating of an electronic database on international and local experts;
- Establishing of an online registration system of international and local experts;
- Putting into place project evaluation software by means of an online evaluation system;
- Ensuring openness, fairness and transparency of the entire Competition cycle.

The Competition encompassed eight scientific directions. Among the Competition participants were groups of scientists working in Georgia; 988 project proposals were registered for the competition, in the drafting of which 6,070 scientists and 142 organizations participated. 514 foreign peer reviewers participated in the evaluation of project proposals along with 141 local experts. The foreign experts were invited from such leading scientific centers as the U.S. National Aeronautics and Space Administration (NASA), Harvard, Yale, Berkley, Oxford, Cambridge and many other famous world universities. Even a Nobel Prize Winner in Chemistry was among the rank of the foreign peer reviewers.

As a result of the Grant Competition, 113 project proposals were approved by the National Science Foundation’s Scientific Board for funding within the limits of the 2006 budget on the basis of expert recommendations. The overall value of awards totaled GEL 11,129,721.

It is noteworthy that among the funded projects 16 are collaborative joint projects from scientific-research institutions and universities – this factor indicates a tendency for integration of scientific research with higher education.

In addition to the Science Competitive Grants, the National Science Foundation administered in 2006 a large number of other State Grants that were aimed at activating the participation of Georgian scientists in the larger international scientific community and further developing scientific infrastructure. These competitions include: Short-term Individual Travel Grants; Scientific Equipment Acquisition Grants; Scientific Literature and Periodicals Acquisition Grants for Libraries.

Most rewarding was the Foundation's cooperation with international science foundations and various institutions, including **INTAS, CRDF, ISTC, STCU, TACIS, NATO Science Programme**, and others.

We would also like to share the general opinion of scientists who expressed that the Competitive Science Grants' system is the greatest achievement for Georgian society, and how the grant funding system has evolved as being one of the primary mechanisms for implementing science reform. It also should be mentioned that any reform taken action is a complex and rather painful process.

This statement is especially true if we take into account the fact that such a large-scale scientific competition has never been previously conducted in Georgia or countries in the region.

I would like to mention with special gratitude the substantial efforts of the Foundation's small team, and how their joint efforts have been directed towards the introduction and activation of an internationally tested science competitive grants administration system. The foundation did its very best to ensure that the Competition was held in a highly professional manner, and that it was a process that was trustworthy and conducted with full transparency. The data concerning the Competition progress and outcomes was later placed on its web-page and was most informative and fully accessible to the public.

And finally, once again we would like to express our sincere respect towards the scientific community of Georgia, whose members we too are counted; it is with great pleasure to invite all interested parties for close and continued cooperation for the shared effort and the common cause.

EVENTS, FACTS, ACHIEVEMENTS



January

Meeting of the Board for Presentation to Presidential Scholarships

A regular meeting of the Board for Presentation to Presidential Scholarships was held under the auspices of the Georgian National Science Foundation to evaluate the results of scientific activities performed by Presidential Scholars in 2005. Based on the Commission's decision, 88 young scientists were awarded scholarships totalling 154,400 GEL during the 2006 financial reporting year.

1 March

Financing of Young Scientists' Scholarships

Since March 1, 2006 the Georgian National Science Foundation has coordinated the financial support of the successful winners of the 2005 Young Scientists' Scholarships Competition that was held under the joint funding and sponsorship of the Georgia-INTAS program. Nine young scientists are sponsored with monthly stipends and scholarships in the Georgian national currency (GEL) until the end of 2008; seven of them have already been provided with the first installment of travel grants. A total of 50 000 EURO from Georgian side and 80 000 EURO from INTAS is allocated for these Scholarships.

21-22 March

Meeting of the Working Group of Science and Technology of the Black Sea Economic Cooperation Organization (BSEC)



The Deputy Director of the Georgian National Science Foundation took part in the Meeting of the Working Group of Science and Technology of the Black Sea Economic Cooperation Organization on 21-22 March 2006. The meeting dealt with the scientific projects submitted from various countries of the Black Sea region for funding and further outlined future plans of activities.

17 April**Announcing the State Science Grants Competition**

On 17 April 2006, the Georgian National Science Foundation announced an open State Science Grants Competition based on an independent local and international evaluation system on ensuring full transparency and openness on an individual level. This is the first time that such a competition was held in Georgia. A two languages (Georgian-English) Operational Manual was prepared and published with 1,500 copies for the competition; 988 scientific well-founded project proposals were registered to participate in the open competition.

19-21 April**INTAS International Conference in Tbilisi**

An international seminar “The South Caucasus – INTAS 2006” arranged by collaboration of INTAS and GNSF and held on 19-21 April, 2006 at Tbilisi State University. The organized seminar proved to be a significant event in recent Georgian history, both in terms of its scope and the academic reputation among those who participated. Upwards of 200 scientists and science policymakers contributed to the success of the seminar, including among them approximately 100 honored guests from

the European Union and countries of the Commonwealth of Independent States (CIS). The seminar has opened the door for closer links and shared partner ties between European and Georgian counterparts, and it has furthered the exchange of scientists and information sharing in various European scientific and technological program areas.

April-May**Open Consultation Seminars of the State Science Grants Competition**

The National Science Foundation organized and held open consultation seminars in Tbilisi and other Georgian regional centers to allow potential participants and other stakeholders the opportunity to familiarize themselves with the State Science Grants Competition conditions.

Schedule of open workshops: April 27, 28 and 10 May in Tbilisi, May 2 in Kutaisi; May 3 in Batumi, and on 10 May in Telavi. Over 2000 scientists attended the six workshops and they were provided with Operational Manuals explaining details and

procedures of the State Science Competitive Grants System. Additionally, the Foundation held pre-registration consultations: May 15-16, Kutaisi and May 17-18, Batumi.

28 April – 23 May

Visit of the Director of the Georgian National Science Foundation to the USA



Prof. Archil Motsonelidze, the Director of the Georgian National Science Foundation visited the United States within the framework of the program: “Visiting America”. Program was financed under the direction of the United States Department of State’s Bureau of Educational and Cultural Affairs

Under this program, visitors were given the opportunity to familiarize themselves with American management systems in the scientific and

technological sector; be exposed to various details of US science foundation’s activities, operations of honorary societies, academies of sciences, and various research institutions. Meetings were organized at different American universities, research institutions and science foundations with the overall objective continued cooperation and deepening of specialized activities.

26-28 June

Participation of the Deputy Director of GNSF in the work of the 40th Meeting of the Coordination Committee of the International Science and Technology Center (ISTC), Yerevan, Armenia

The Deputy Director of GNSF, Mrs. Natia Jokhadze took part in the 40th Meeting of the Coordination Committee of the International Science and Technology Center held in Yerevan, Armenia. The Meeting addressed activities of the Center, identified project proposals selected for funding and outlined future activities and plans of collaboration.

31 July – 30 November

Short-term Individual Travel Grants Competition for Participation in international Scientific Events



The Georgian National Science Foundation held a competition for the Short-term Individual Travel Grants. 28 Georgian scientists were able to take part in international scientific forums held in 18 countries as a direct result. The purpose of the competition was to provide much needed financial support to Georgian scientists to participate in international scientific events and for them to keep current in their respective fields of research and work.

28 July – 10 October**Grant Competition for Acquisition of Scientific Equipment**

The Georgian National Science Foundation announced a competition for the purchase of scientific equipment in order to raise the quality of scientific research throughout the country, to extend the degree of accessibility of up-to-date and modern scientific equipment for scientific groups, and to increase the level and intensity of scientific activities in Georgia. The competition provided for funding the acquisition of scientific equipment by Scientific-Research Organizations and Higher Educational Institutions. 31 application were received under the terms of the competition. The required amount of funding for the acquisition of scientific equipment totalled GEL 4,203,876.79. The Results of the competition will be announced in February 2007.

28 July – 15 October**Grant Competition for Acquisition of Scientific Literature for Libraries**

A competition for acquisition of scientific literature and periodicals for libraries under the auspice of The Georgian National Science Foundation was held with the purpose of facilitating the continued development of university libraries by providing them funds to buy the latest scientific literature, journals and periodicals. A total of 6 grant applications were received and registered with a total requesting budget of GEL 424,855.93. The Results of the competition will be announced in February 2007.

August**Launching the Project “Creating of an Effective Model of Science Administration” within the Framework of the EU TACIS Program**

Under the European Union's funding, the Estonian Science Foundation “Archimedes” launched the Project “Creating an effective model of science administration: review of EU best practices and elaboration of policy recommendations with the Ministry of Education and Science of Georgia” within the framework of the European Union's Technical Assistance for CIS (TACIS) Program. Local partners of the project are the Ministry of Education and Science of Georgia and the Georgian National Science Foundation.

6-9 September**Visit of the Director of Georgian National Science Foundation to Brussels, Belgium**

Prof. Archil Motsonelidze, the Director of the National Science Foundation, at the invitation of the Scientific Board of INTAS, travelled to Brussels as an observer in the final selection process and approval of winners in the INTAS-South Caucasus Scientific Projects Competition. Meetings were held with INTAS' President, employees and numerous experts from the various countries that had gathered for the occasion.

28 September**First Meeting of the Scientific Board of the GNSF and Approval of the Scientific Grants Competition Results**

The first meeting of the Scientific Board of the GNSF was held on 28 September to consider activities of the GNSF and the administration processes of the State Scientific Grants Competition Program. The Scientific Board voted to approve 113 project proposals for funding under the terms of the State Scientific Grants Competition, on the bases of local and foreign peer reviewers evaluation.

2-3 October**Presentation of the GNSF-conducted State Scientific Grants Competition Results in Batumi, Georgia**

Under the aegis of the Ministry of Education and Science of Georgia, the presentation of the results of the GNSF conducted State Scientific Grants competition was carried out at the venue of Shota Rustaveli State University in the Black Sea town of Batumi. 113 project proposals were funded following the competition in accordance to the 8 scientific directions. Actual project funding began in October 2006. Among other guests and project leaders from Batumi that were funded, media representatives also attended the event and awards ceremony.

31 October**Making an Agreement between the GNSF and the Science & Technology Center in Ukraine (STCU)**

On 31 October 2006 in Tbilisi, Prof. Archil Motsonelidze, the Director of the GNSF and Andrew Hood, the Executive Director of the Science & Technology Center in Ukraine (STCU) signed a memorandum of cooperation, which provides for giving collaboration between these organizations within the framework of the program for prospective cooperation on Target Research and Development (TRD).

1-7 November**Visit of the Director of GNSF to Tallinn and Helsinki**

Under the framework of the Project “Creating an Effective Model of Science Administration: review of EU best practices and elaboration of policy recommendations with the Ministry of Education and Science of Georgia”, a delegation of Georgian scientists and science policymakers traveled to Estonia and Finland, including Prof. Archil Motsonelidze, the Director of GNSF as a part of the official delegation. They became familiarize with on-site visits with the work of leading scientific

centers of excellence and top rated universities. They visited the well-known technoparks, technological incubators and various companies targeted to be benefited from science-intensive production and synergies of operation. The delegation also met with science policymakers of the above-mentioned countries who shared various reports and discussed ongoing reforms in the spheres of science, technology and higher education in Georgia. Moreover, various possibilities and opportunities for prospective bilateral and multilateral cooperation were further detailed as a part of the visit.

15-17 November**Participation of the Director of the GNSF in the Work of the 23rd Meeting of the Board of Governors of the Science and Technology Center in Ukraine (STCU), Kiev, Ukraine**

Prof. Archil Motsonelidze, the Director of the Georgian National Science Foundation took part in the work of the 23rd Meeting of the Governing Board of the Science and Technology Center in Ukraine. The Meeting considered the possibilities of funding various project proposals submitted to the STCU and the implementation of the “Target Research and Development Program” in collaboration with Georgia.

17 November**Announcing a Joint Scientific Competition Arranged by the GNSF and the STCU**

The GNSF and the STCU announced a joint grant competition within the Program “Target Research and Development Initiatives” (TRDI). Two areas entailed under the competition are: (1) Biotechnologies and Life Sciences; (2) Information and Communication Technologies. The program will be implemented jointly and co-financed by donor sides: European Union, United States and Canada and Georgia, as an equal partner of the program. The total budget of program is 300,000, USD.

7-8 December**Participation of the Deputy Director of GNSF in a Workshop: “Policy Issues in Science and Technology”, Athens, Greece**

Mrs. Natia Jokhadze, the Deputy Director of the GNSF participated in a meeting entitled “Policy Issues in Science and Technology” which was organized by the International Center for Black Sea Studies (ICBSS). Among the issues considered at the meeting was the current situation facing the sphere of science and technology in countries of the Black Sea region, including on-going reforms, current financial issues, the present status of project funding, etc. The proceedings of the meeting resulted in the completion of a summary report.

ACTIVITY

1. State Science Grants Competition

The Georgian National Science Foundation was established in 2005 with the stated objective of systematically implementating reform in the field of science. Its primary function is to replace the existing science funding system and structure with the internationally tested and proved system. For the first time in Georgian history the Foundation conducted a State Scientific Grants Competition in 2006, which was based on a fixed evaluation criteria for a single competitive environment for evaluating scientific project proposals by a team of individual, independent and unbiased international and local peer reviewers. 750 experts in total registered for collaboration with GNSF.

The State Scientific Grants Competition was announced on 17 April 2006 with an application deadline of May 31, 2006. The competition aimed to create a completely new model of science funding in Georgia, which would be based on the principles of transparency, objectivity and rational expenditures of state funds.

Competition administration tasks completed:

- Fashioning of a competitive model based on the experience of competent international foundations;
- Drafting and publication of an Operational Manual for a State Competitive Science Grant System in Georgian and English;
- Establishing a legislative base of an Operational Manual and the Competition administration system;
- Providing for necessary software to track a complete project cycle of the competition administration and procedures;
- Generating an electronic database of international and local experts;
- Creating an **on-line** registration system of international and local experts;
- Organizing open consultation seminars and individual consultation days regarding terms and conditions of the competition conditions;
- Putting in place evaluation software for projects by means of an **on-line** evaluation system;
- Providing for openness and transparency of the competition; the placement of the competition results on the Foundation's web page, with a listing of earned points and supplemental expert comments for each of the submitted projects.

Information support to the announcement of competition carried out through:



- Printed mass - media;
- Formal letters;
- Placement of announcement on the Foundation's web-site;
- Consultation seminars: in Tbilisi, Kutaisi, Batumi and Telavi;
- Individual weekly consultations - every Thursday after the competition initial announcement through the posted deadline for receipt of project proposals.

Following the announcement of the competition, upwards of 1000 scientists were consulted, over 300 requests phone calls received and numerous e-mail were answered. The most frequently asked questions were placed on the Foundation's web-site for all to consider.

The competitive project proposals were categorized and registered in eight scientific directions as previously determined by the Foundation:

1. Georgian Studies
2. Humanities, Economic and Social Sciences
3. Mathematics, Mechanics, Telecommunications, Information Technologies
4. Natural Sciences
5. Earth Sciences and Environment
6. Life and Medical Sciences
7. Engineering Sciences, High-technology Materials
8. Agricultural Sciences

The Foundation drafted and published the *Operational Manual* on the State Competitive Grant System in Georgian and English detailing procedures and conditions for those interested in taking part in competition.

Received project proposals under the terms of the competition were shared with foreign and local experts for evaluation. A total of 514 foreign and 141 local experts/peer reviewers participated in the review and final evaluation process.

On the basis of the expert evaluations, 113 project proposals that earned the most points were selected for funding within the frame of the 2006 budget allocated for this competition. A list of the project proposals selected for funding was approved during the first meeting of the Scientific Board of the GNSF on 28 September 2006.

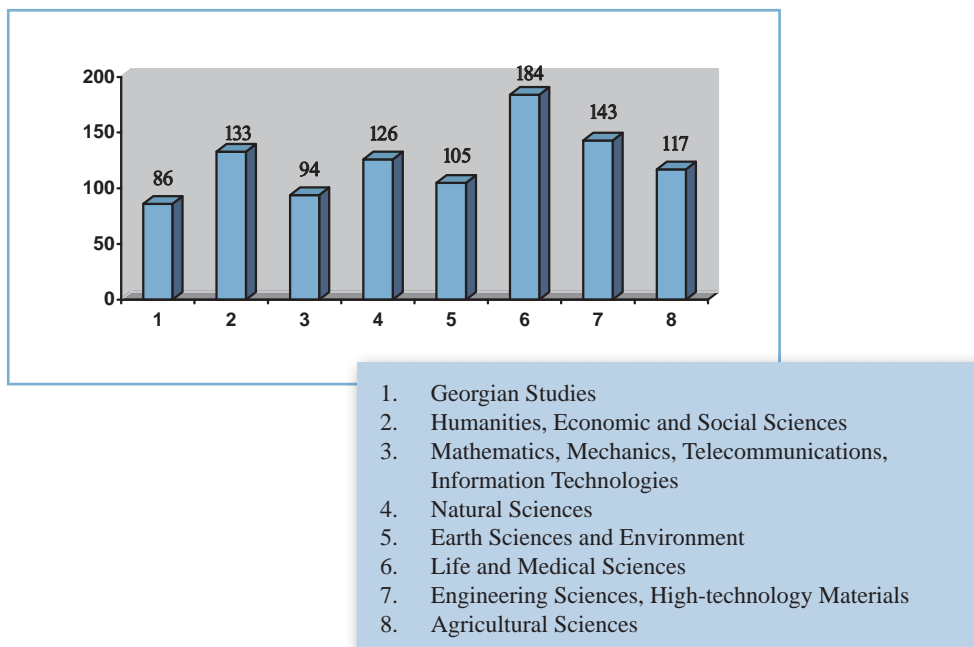
The budget 2006 allocated for the State Science Grants Competition totaled GEL 1,500,000.

1.1. Registered Project Proposals

988 project proposals were registered from 142 organizations under the terms of the competition according to eight predetermined scientific directions.

Chart 1.

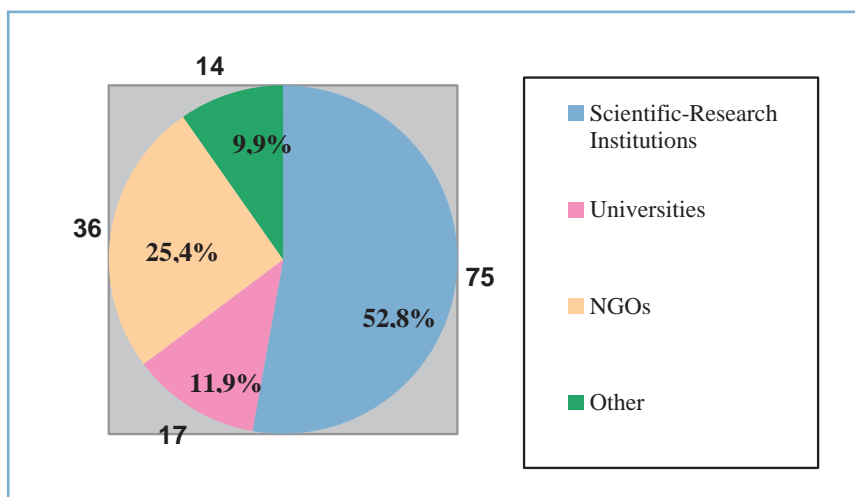
Breakdown of registered project proposals by scientific directions



Scientific-research institutions, universities, NGOs and various other organizations participated in the competition.

Chart 2.

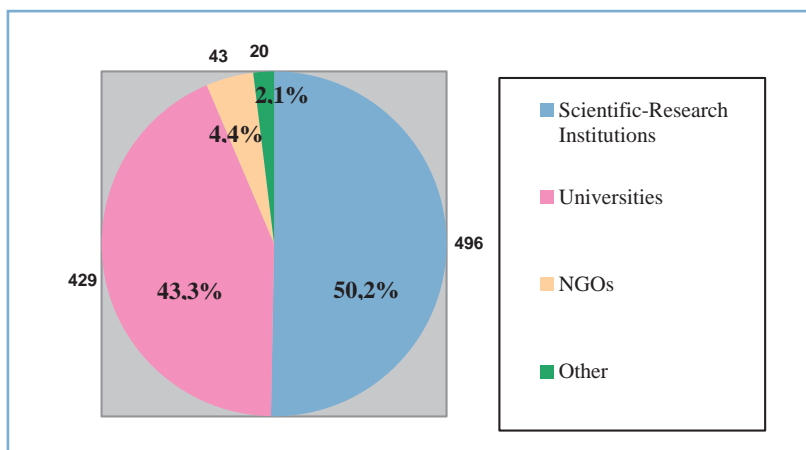
The quantitative and percentage breakdown of Competition participants by their institutional type (142 organizations in total)



Project Proposals were submitted by groups of scientists. Although grant recipients could be Scientific-Research Institutions, High Educational Institutions, Non-Governmental and other Organizations.

Chart 3.

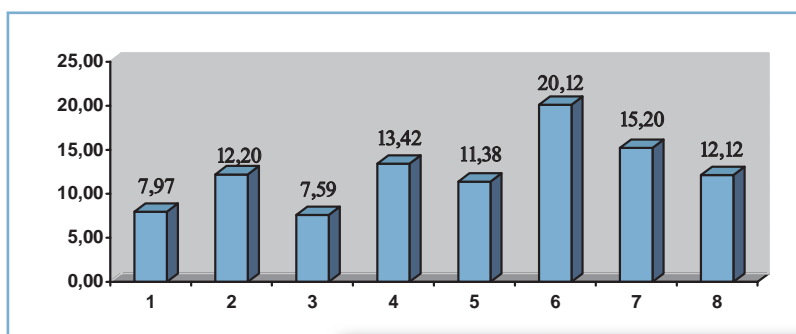
The quantitative and percentage breakdown of registered project proposals based on the Legal status of the participating organizations (988 project proposals in total)



The budget amount requested in registered project proposals totaled GEL 88,329,581 over a three-year period. The requested funding based on Scientific Directions was as follows:

Chart 4.

Percentage breakdown of requested funding by Scientific Directions.

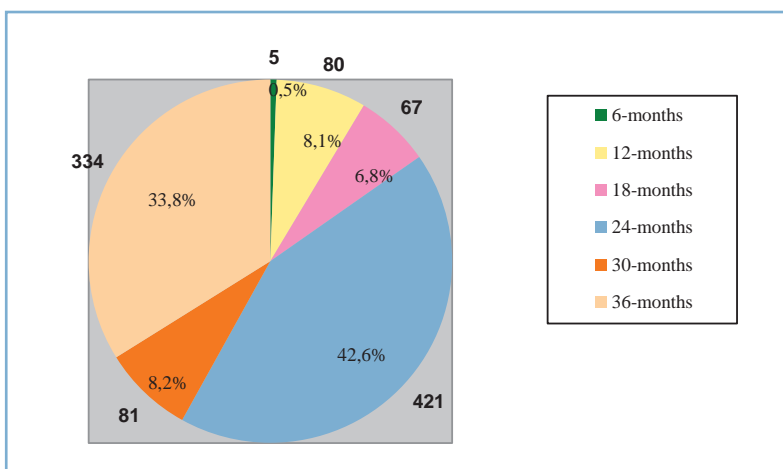


1. Georgian Studies
2. Humanities, Economic and Social Sciences
3. Mathematics, Mechanics, Telecommunications, Information Technologies
4. Natural Sciences
5. Earth Sciences and Environment
6. Life and Medical Sciences
7. Engineering Sciences, High-technology Materials
8. Agricultural Sciences

Based upon the *Operational Manual*, the project duration was defined from 6 to 36 months. The majority of the registered project proposals were proposed for a 24-month completion period. A total of 5 projects were based on a duration of 6-months to complete.

Chart 5.

The quantitative and percentage breakdown of registered project proposals by project duration



According to the *Operational Manual*, the requested amount per project was not to exceed GEL 50,000 for one year. For two and three-year projects – GEL 100,000 and 150,000, respectively.

Chart 6.

Funding requested by registered project proposals according to their duration (GEL)

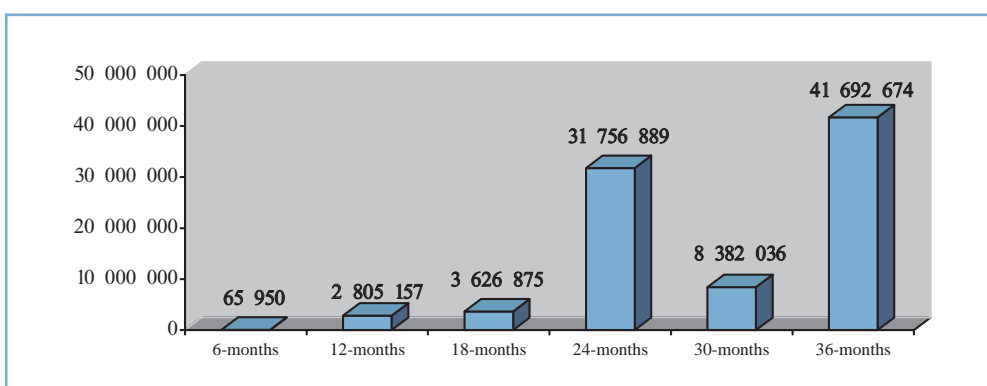
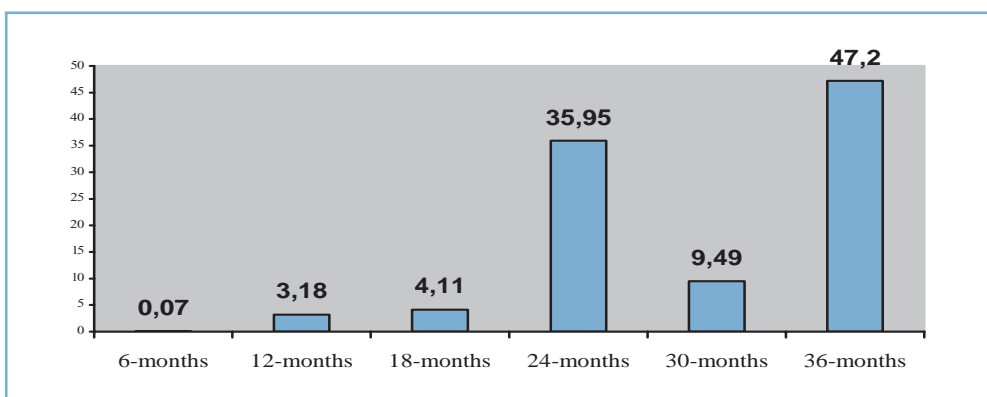


Chart 7.

Percentage breakdown of funds requested by registered projects according to their duration (GEL)



1.2. Competition Results

A special software/program was created to administer the competition. The program encompassed a Database of Experts; a Database of Registered Project Proposals; an Experts Registration Procedure; Procedures for Assigning and Forwarding Project Proposals to Experts; and an automatic receipt and storage component on the Foundation's server of expert evaluations.

ეროვნული სამეცნიერო ფონდი - საინფორმაციო სისტემა									
პროექტის სახელი									
პროექტი									
1 - Mathematics, Mathematics, Telecommunication, IT									
2-DI - Differential Equations									
# Project Title	Code	EN	GE	RU	ES	UA	GR	AR	
1 Characteristic problems for some classes of nonlinear hyperbolic equations	09_001_2_011	5	100	03	02	76	0	0	07.50
2 Boundary Value Problems in an Infinite Interval for Three-dimensional Ordinary Differential Equations	09_024_2_011	4	99	96	88	126	0	0	02.50
3 Asymptotic behaviour of solutions of functional differential of difference equations	09_008_2_011	4	72	77	69	0	0	0	02.00
4 Application of Continual Integrals to Investigation of Algebraic geometry to properties of differential equations	09_009_2_011	1	59	62	0	0	0	0	04.50
5 Numerical and Characteristic Methods for Nonlinear Hyperbolic Problems	09_007_2_011	4	66	88	0	0	0	0	74.50
6 The adequate mathematical theory of real optimal processes	09_711_2_011	3	66	72	83	0	0	0	73.67
7 Investigation and numerical solution of some classes of nonlinear partial differential and integral-differential equations	09_007_2_011	1	99	73	96	0	0	0	07.00

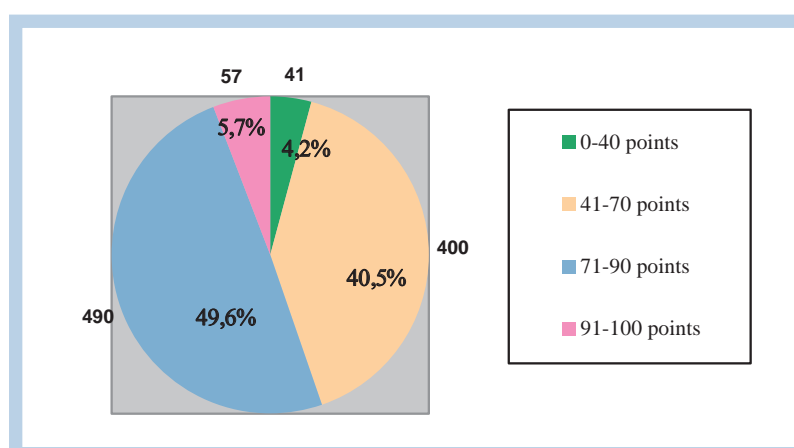
A total of 514 foreign experts participated in evaluation of project proposals.

Most of the foreign experts were registered in the following directions: **Life and Medical Sciences, Natural and Engineering Sciences**. The evaluation of the projects in the direction of **Georgian Studies** involved the least number of foreign experts.

The breakdown of the project proposals by the category of average points on the basis of expert evaluations was as follows:.

Chart 8.

The quantitative and percentage breakdown of evaluated projects by points gained¹ (988 projects in total)



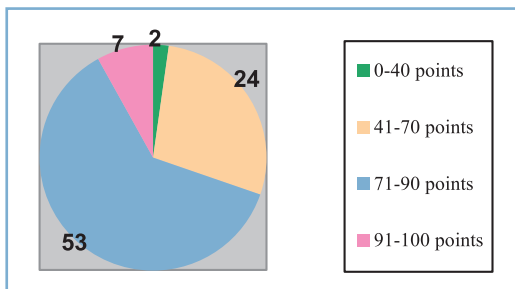
1 0-40 points – weak; 41-70 points – medium; 71-90 points – good; 91-100 points – very good.

The breakdown of the averaged points gained by scientific directions was as follows:

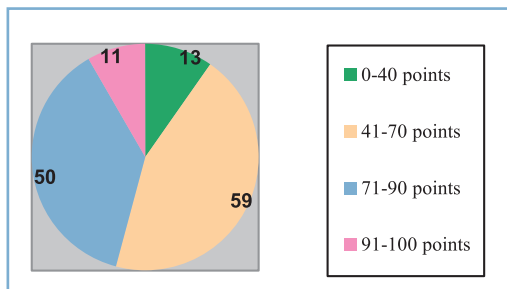
Chart 8.1 – 8.8.

Quantitative breakdown of evaluated projects by points gained according to scientific directions

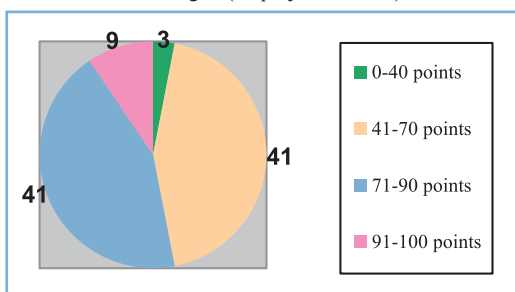
8.1. Georgian Studies (86 projects in total)



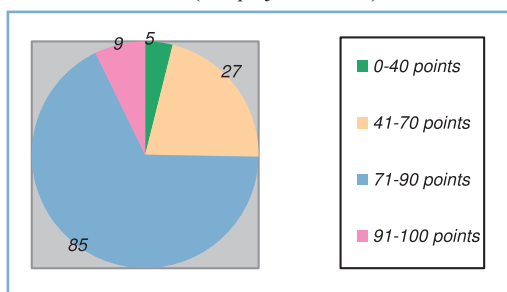
8.2. Humanities, Economic and Social Sciences (133 projects in total)



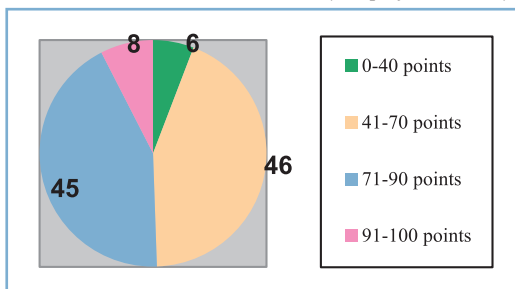
8.3. Mathematics, Mechanics, Telecommunications, Information Technologies (94 projects in total)



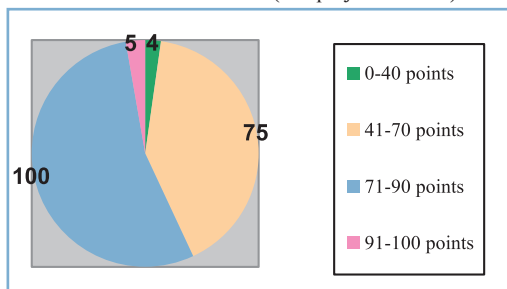
8.4. Natural Sciences (126 projects in total)



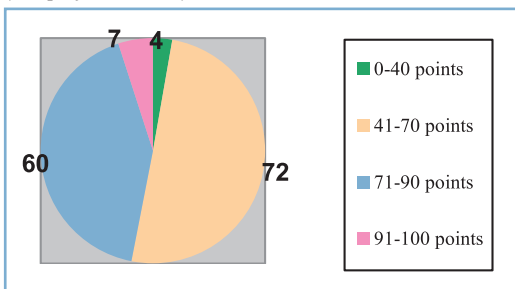
8.5. Earth Sciences and Environment (105 projects in total)



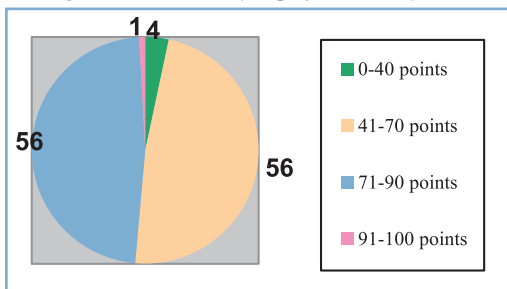
8.6. Life and Medical Sciences (184 projects in total)



8.7. Engineering Sciences, High-Technology Materials (143 projects in total)



8.8. Agricultural Sciences (117 projects in total)



As a result of the evaluation, the highest points in terms of percentage (good and very good) were gained by the project proposals registered in Natural Sciences (16.66%) and Georgian Studies (15.59%).

1.3. Funded Projects

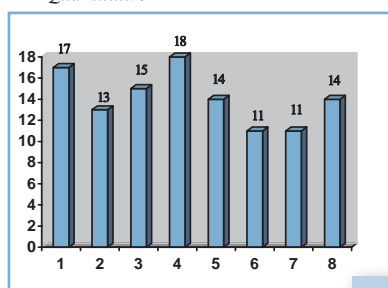


As a result of the competition, 113 project proposals scoring the highest points were selected and approved for funding – which amounted to 11.4% of the total number of project proposals registered. The averaged points gained by the funded projects varied between 83 to 99 points.

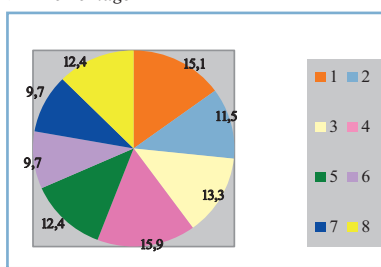
Chart 9.1-9.2

The quantitative and percentage breakdown of funded projects by scientific directions (113 projects in total)

9.1. Quantitative



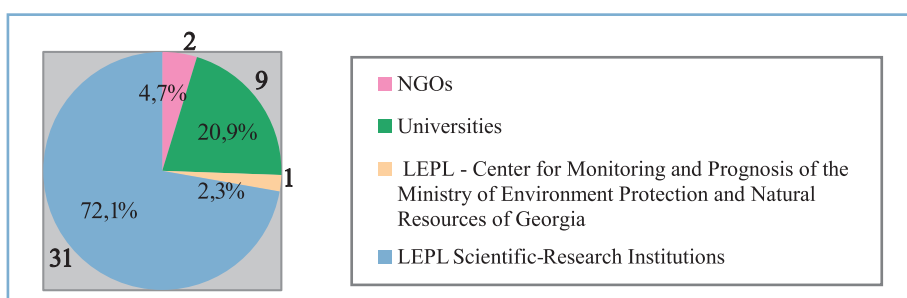
9.2. Percentage



1. Georgian Studies
2. Humanities, Economic and Social Sciences
3. Mathematics, Mechanics, Telecommunications, Information Technologies
4. Natural Sciences
5. Earth Sciences and Environment
6. Life and Medical Sciences
7. Engineering Sciences, High-technology Materials
8. Agricultural Sciences

Chart 10.

The quantitative and percentage breakdown of funded projects by the legal status of organizations² (43 organizations in total)



² According to submitted documentation on the competition, 46 organizations were funded. However, as a result of institutional changes, several organizations joined/incorporated and/or changed their name and legal status either during, or as a result of the process. On December 1, 2006, 43 organizations had successfully registered as grantees.

Total budget of the funded projects makes GEL 11,129,721 in the years 2006, 2007, 2008 and 2009, of it the 2006 budget - GEL 1,487,991 for October, November and December (the last 2006 quarter).

Table 1.

Breakdown of funded projects by approved budget in given scientific direction

#	Scientific Direction	Number of funded projects	Budget (GEL)
1	Georgian Studies	17	1 669 166
2	Humanities, Economic & Social Sciences	13	1 037 202
3	Mathematics, Mechanics, Telecommunications, Information Technologies	15	1 227 948
4	Natural Sciences	18	1 962 854
5	Earth Sciences and Environment	14	1 478 828
6	Life & Medical Sciences	11	1 280 051
7	Engineering Sciences, High-Technology Materials	11	1 118 594
8	Agricultural Sciences	14	1 355 070
	Total	113	11 129 721



Table 2.

Funded projects by name of organization and approved total budget

#	Name of Organization	Number of Funded Projects	Total Budget (GEL)
1	I. Javakhshvili Tbilisi State University/ TSU's Sukhumi Branch - 1 project proposal	21	2 129 816
2	Georgian Technical University	5	552 132
3	Tbilisi State Medical University	1	61 347
4	I. Chavchavadze State University	3	372 381
5	Georgian State Agrarian University	5	476 591
6	Tbilisi State University of Economic Relations	2	165 042
7	Rustaveli Theater and Cinema State University	1	33 230
8	A. Tsereteli State University	3	314 295
9	Sh. Rustaveli State University	2	167 438
10	Georgian National Museum	2	239 953
11	K. Kekelidze Institute of Manuscripts	2	195 881
12	Arn. Chikobava Institute of Linguistics	2	294 982
13	I. Javakhishvili History and Ethnology Institute	5	347 865
14	G. Tsereteli Institute of Oriental Studies	1	100 000
15	S. Tsereteli Institute of Philosophy	1	17 358
16	T. Tsereteli Institute of State and Law	2	140 105
17	A. Razmadze Institute of Mathematics	9	662 468
18	N. Muskhelishvili Institute of Computer Mathematics	1	97 292
19	E. Andronikashvili Institute of Physics	3	391 581
20	Institute of Cybernetics	5	429 821
21	R. Agladze Institute of Inorganic Chemistry & Electrical Chemistry	1	130 326
22	M. Nodia Institute of Geophysics	3	361 003
23	Vakhushti Bagrationi Institute of Geography	2	285 000
24	S. Durmishidze Institute of Biochemistry & Biotechnology	3	388 009
25	Al. Janelidze Institute of Geology	1	141 000
26	I. Kutateladze Institute of Pharmacochimistry	2	200 000
27	I. Beritashvili Institute of Physiology	3	380 495
28	G. Eliava Institute of Bacteriophagia, Microbiology & Virusology	1	150 000
29	Institute of Zoology	1	128 421
30	N. Ketskaveli Institute of Botany	1	93 330
31	Georgian Water Management Institute	1	69 053
32	K. Zavriv Institute of Structural Mechanics & Seismicity	2	144 500
33	V. Gulisashvili Forestry Institute	1	118 575
34	Georgian Research Institute of Agricultural Mechanization & Electrification	1	100 000
35	Research Institute of Land Management	1	90 000
36	Institute of Agrarian Radiology & Ecology	1	65 895
37	Sukhumi I. Vekua Institute of Physics & Technology	2	152 035
38	E. Kharadze Abastumani Astrophysical Observatory	3	400 000
39	Seismic Monitoring Center	2	106 900
40	Institute of Tea, Subtropical Crops and Tea Industry	2	216 579
41	Center for Monitoring and Prognosis (Ministry of Environment Protection and Natural Resources of Georgia)	1	100 000
42	Georgian Research Center of Globalization and Regional Integration	1	50 717
43	Language Modeling Association	1	68 305
Total		113	11 129 721

 Universities	 LEPL under MoEPNR
 Scientific-Research institutions	 NGOs

As a result of the Competition, 13 projects from 8 organizations were funded in regions.³

Table 3.

Number of funded project proposals in regional organizations

#	Name of Organization	Number of Funded Projects
1	A. Tsereteli State University	3
2	TSU's Sokhumi Branch ⁴	1
3	Sokhumi I. Vekua Institute of Physics and Technology	2
4	Sh. Rustaveli State University (was represented by Batumi State Agricultural and Batumi Agricultural Biotechnologies & Business Institutes)	2
5	E. Kharadze Abastumani Astrophysical Observatory	3
6	Institute of Tea, Subtropical Crops & Tea Industry (was represented by the Research Amalgamation of Tea, Subtropical Crops & Tea Industry and Chakvi Scientific Center)	2
Total		13

Chart 11.

The quantitative and percentage breakdown of funded projects by their duration

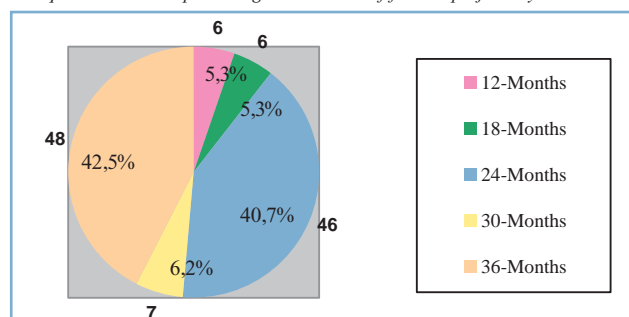
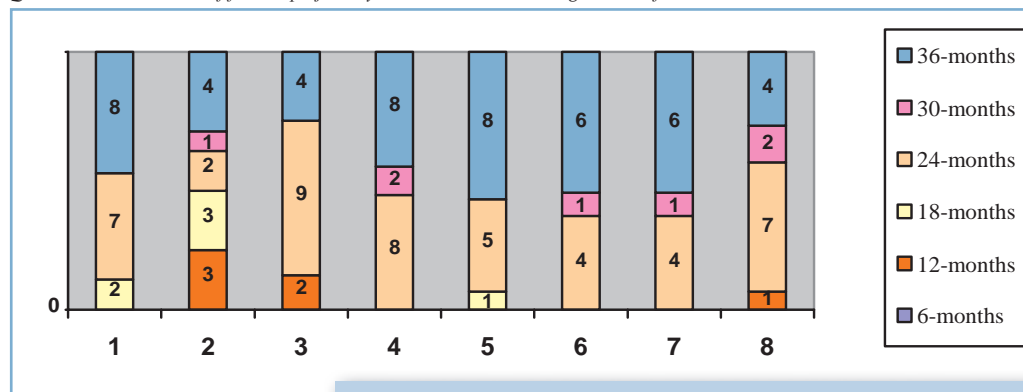


Chart 12.

Quantitative breakdown of funded projects by their duration according to scientific direction



1. Georgian Studies
2. Humanities, Economic and Social Sciences
3. Mathematics, Mechanics, Telecommunications, Information Technologies
4. Natural Sciences
5. Earth Sciences and Environment
6. Life and Medical Sciences
7. Engineering Sciences, High-technology Materials
8. Agricultural Sciences

³ Under the 2006 data, some regional organizations merged and/or joined already existing organization; thereafter, 5 regional organizations are registered as grantees.

⁴ Institutionally belongs to Ivane Javakhishvili Tbilisi State University.

Table 4.

Number of main staff participating in funded projects by age groups according to scientific directions

#	Scientific Direction	Number of Main Staff	Age Group					
			under 30	30-39	40-49	50-59	60-69	70+
1	Georgian Studies	124	15	23	18	25	19	24
2	Humanities, Economic & Social Sciences	74	5	20	16	19	7	7
3	Mathematics, Mechanics, Telecommunications, Information Technologies	102	12	14	16	29	18	13
4	Natural Sciences	143	24	30	25	27	23	14
5	Earth Sciences & Environment	90	6	13	12	20	18	21
6	Life & Medical Sciences	83	11	16	20	22	12	2
7	Engineering Sciences, High-Technology Materials	57	1	2	15	24	10	5
8	Agricultural Sciences	91	8	11	20	24	20	8
Total		764	82	129	142	190	127	94

Chart 13.

Total quantitative and percentage breakdown of main staff participating in funded projects by age groups

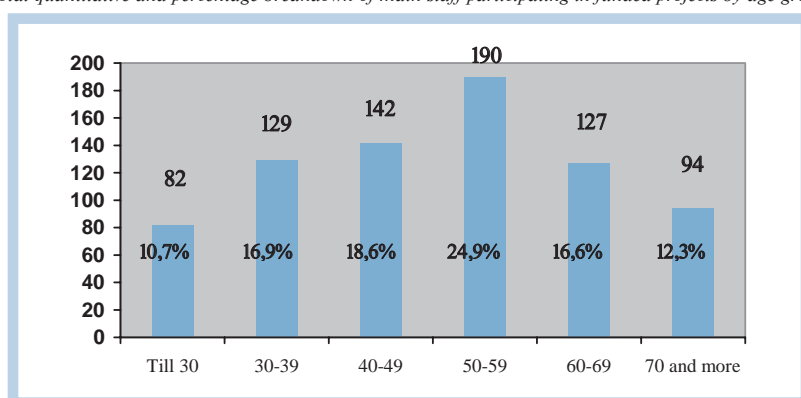


Chart 14.

The quantitative and percentage breakdown of main staff participating in funded projects by sex

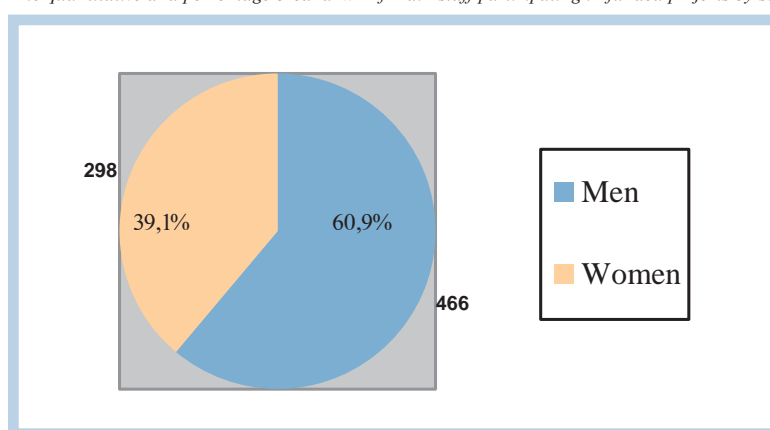
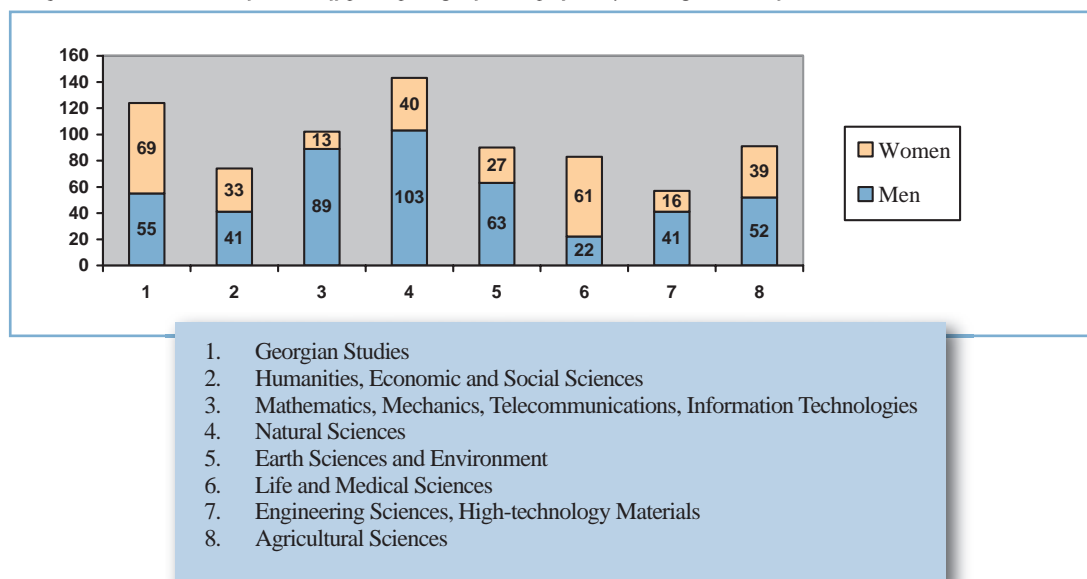


Chart 15.

The quantitative breakdown of main staff participating in funded projects by sex in given scientific directions



6 Young scientists, 35 years of age inclusive, counted as Project Leaders in funded projects.

Among the funded projects, 21 are joint in design, drafted with the participation of 2 or 3 collaborative organizations. Among these, 16 represent project proposals that were jointly prepared by universities and scientific-research institutions.

In terms of the Grant Competition, the Foundation worked out a detailed classifier serving components of the eight main scientific directions. According to the detailed classifier, project proposals were registered and experts were selected accordingly.



The total funded projects were incorporated in 63 detailed classifier as follows:

Tables 5.1-5.8.

Number of funded projects under the detailed classifier (with indication of more than two projects)

5.1.

#	Code	Name of Sub-direction	Number of Funded Projects
I. Georgian Studies			
1	1-100	History of Georgia, Source Study and Historiography of the History of Georgia	9
2	1-120	Kartvelian Languages	6
3	1-140	Ethnography	2

5.2.

#	Code	Name of Sub-direction	Number of Funded Projects
II. Humanities, Economic and Social Sciences			
4	2-101	History of Philosophy	1
5	2-105	Philosophy of Science and Technology	1
6	2-300	World History, Source Study and Historiography of World History	1
7	2-400	Theatre Science	1
8	2-600	Macroeconomics	1
9	2-604	International Economics	1
10	2-605	Regional Economics	2
11	2-790	Management Sociology	1
12	2-800	Political Sciences	2
13	2-930	Sectoral Law Studies (Public, Private, Criminal, Financial, Fiscal, etc.)	2

5.3.

#	Code	Name of Sub-direction	Number of Funded Projects
III. Mathematics, Mechanics, Telecommunications, Information Technologies			
14	3-100	Mathematical Analysis	1
15	3-101	Differential Equations	2
16	3-103	Geometry and Topology	2
17	3-104	Theory of Probability and Mathematical Statistics	3
18	3-105	Mathematical Logics, Algebra and Theory of Numbers	2
19	3-107	Mathematical Cybernetics	1
20	3-109	Mechanics of Continua	4

5.4.

#	Code	Name of Sub-direction	Number of Funded Projects
IV. Natural Sciences			
21	4-100	Theoretical Physics	2
22	4-110	Radiophysics, Physical Electronics, Acoustics	2
23	4-120	Optics, Quantum Electronics	1
24	4-130	Physics of Solids and Quantum Fluids	1
25	4-140	Plasma Physics and Chemistry	1
26	4-160	Physics of Semiconductors and Dielectrics	2
27	4-170	Physics of Magnetic Phenomena	1
28	4-200	Nuclear and Particles Physics	1
29	4-250	Laser Physics	1
30	4-270	High-Energy Physics	1
31	4-310	Heliophysics and Physics of the Solar System	1
32	4-320	Plasma Astrophysics	1
33	4-430	Physical Chemistry	1
34	4-440	Electrochemistry	1
35	4-450	Chemistry of High Molecular Compounds	1

5.5.

#	Code	Name of Sub-direction	Number of Funded Projects
V. Earth Sciences and Environment			
36	5-100	Geography	2
37	5-110	Meteorology	1
38	5-130	Paleontology	1
39	5-140	Seismology	1
40	5-150	Geology	1
41	5-160	Geophysics	5
42	5-190	Physics of Atmosphere	2
43	5-210	Pollution and Abbatement	1

5.6.

#	Code	Name of Sub-direction	Number of Funded Projects
VI. Life and Medical Sciences			
44	6-100	General Biology	1
45	6-110	Zoology	1
46	6-120	Botany	1
47	6-250	Biotechnology	2
48	6-270	Human and Animal Physiology	2
49	6-280	Physiology and Biochemistry of Bacterium	1
50	6-302	Endocrinology	1
51	6-403	Drug Technology and Pharmaceutical Project Development	2

5.7.

#	Code	Name of Sub-direction	Number of Funded Projects
VII. Engineering Sciences, High-technology Materials			
52	7-100	Civil Engineering	4
53	7-150	Radio Engineering and Communication	1
54	7-170	Power Engineering	1
55	7-220	Technology of Textile and Light Industry Products	3
56	7-230	Electronics	1
57	7-260	Nanoscale Phenomenon	1

5.8.

#	Code	Name of Sub-direction	Number of Funded Projects
VIII. Agrarian Sciences			
58	8-100	Agronomy	5
59	8-110	Zootechny	1
60	8-120	Forest Management	1
61	8-130	Veterinary Sciences	1
62	8-140	Mechanization and Electrification of Agriculture System	2
63	8-160	Agrobiotechnology	4

2. Individual Short-term Travel Grants Competition for Participation in International Scientific Events

The Individual Short-term Travel Grants Competition for Participation in International Scientific Events represents an unprecedented approach to allow Georgian scientists to participate in international scientific events by the financial support from the State. This opportunity is provided through open competition and based upon the motivation for greater integration of Georgian scientists into the life of international scientific activities.

The Georgian National Science Foundation first announced the Short-term Individual Travel Grants Competition for Participation in International Scientific Events that was conducted from July 31 to November 30 of 2006. The Competition envisaged grant funding for participation in international forums to be held from September 1 to March 1 of 2007.

Among the Competition participants were Georgian citizens with various academic degrees, young scientists, master's degree candidate students and other scientists working and studying in various institutions.

Within the scope of the competition, the Georgian National Science Foundation funded 28 scientists, which amounted to 63.7%, just over 6 out of 10 of the submitted applications.

Georgian scientists were given the opportunity to take part in international scientific forums that were held in 18 countries.



3. International Cooperation



TACIS Programme



Since August of 2006, The Estonian Science Foundation “Archimedes” launched the implementation of the EU TACIS Programme **“Creating an effective model of science administration: review of EU best practices and elaboration of policy recommendations with the Ministry of Education and Science of Georgia”**. The project recipient’s parties include the Ministry of Education and Science of Georgia and the Georgian National Science Foundation. The project’s duration was established to run for 10 months.

Target groups and stakeholders of the project include institution of public higher education (primarily Georgia’s leading universities), scientific-research institutions, the industrial sector, science policymakers and those who will reap the benefit from improvements in science and technology.

The main goal of the project is to assist the Ministry and the Foundation in the identification of the necessary strategy and a transparent policy for improving science sector activities within Georgia along with working out recommendations for harmonizing the legislative system of Georgia to European standards.

European experts will become familiarized with the current state of affairs in the science sector of Georgia and the existing legislative base. Workshops were held in order to share with stakeholders the benefits of European and international experiences and to provide a forum for discussions with Georgian colleagues.

The respective documents and resulting recommendations will be prepared and worked out as the project outcome.

Within the project, by support of the GNSF four workshops were held in different cities of Georgia:

- 28 September, 2006 Tbilisi, TSU
Estonian Organisation of Research and Development Act. Structural Reform of an R&D Policy System: linking Research to Higher Education
- 26 October, 2006, Kutaisi, A. Tsereteli State University
Creating an effective model of science administration: review of EU best practices and elaboration of policy recommendations with the Ministry of Education and Science of Georgia
- 27 October, 2006, Batumi, Shota Rustaveli State University
Creating an effective model of science administration: review of EU best practices and elaboration of policy recommendations with the Ministry of Education and Science of Georgia
- 14 December, 2006 Tbilisi, TSU
Higher Education Reforms and the Bologna Process in Estonia



INTAS

Information National Information Point of the European Union's Sixth Framework Program on Science and Technology Development (FP6) operates at the Georgian National Science Foundation. It regularly receives a range of information from contractor organization.

The only practical means to take part in the so-called mechanism of EU framework programs of research and technological development is with the involvement of a group of Georgian scientists in a consortium organized by at least 3 EU countries. *Out of a total of 140 project proposals submitted for the 2006 INTAS-South Caucasus Scientific Cooperation and Collaborative Call for research projects, 17 project proposals were actually funded, where 12 involved the participation of Georgian scientists.*

The Ministry of Education and Science of Georgia and the Georgian National Science Foundation allocated Euro 100,000 and 50,000 respectively for the mentioned competition. INTAS contribution in the total funding package totaled over Euro 300,000 (that allowed for the participation of Georgian scientists). In coordination with INTAS, on the proposition of the three South-Caucasian States (Armenia, Azerbaijan, Georgia), the collaborative call for research projects encompassed the following 6 scientific directions:

- 1) Environment protection
- 2) Public health
- 3) Improved use of natural resources
- 4) Modern problems of mathematics and astrophysics
- 5) Economic development
- 6) Science, technology and innovation development



NATO

Staff members of the Georgian National Science Foundation were actively involved in the implementation of the NATO's Individual Partnership Action Plan (IPAP), and they served as members of the IPAP's 5th Working Group. The scientific topics of the Working Group encompassed the science and technology sector, and environmental issues. NATO experts involved in the IPAP monitoring have highly acknowledged the Group's committed activities and contributions.

A National Information Point (NIP) of the NATO Program "Security through Science" functions at the Georgian National Science Foundation, and it is fully engaged with the dissemination of relevant information and provision of consulting assistance to Georgian scientists.



Science and Technology Center in Ukraine (STCU)

On 31 October 2006, in Tbilisi, **Prof. Archil Motsonelidze**, the Director of the Georgian National Science Foundation and **Mr. Andrew Hood**, the Executive Director of the Science and Technology Center in Ukraine (STCU) signed a Memorandum of Cooperation that gave rise to further collaboration between these organizations within the “Target Research and Development Program.”

The Program is an attempt to assign equal partnership status to the donor countries of STCU (EU, USA, Canada) and the grantees (including Georgia). In particular, the Target Research and Development Program will be implemented based on equal co-funding by donors and the Georgian National Science Foundation (totally 300,000 USD).

Georgian researchers submitted projects proposals in two areas under the first round of the competition organized within the framework of the program:

- 1) Biotechnologies and Life Sciences
- 2) Information Technologies

The projects' implementation period ranged between 12 and 24 months; the maximum budget for one project was fixed at 50,000 USD. The STCU ensured that the evaluation/selection and monitoring of the project proposals were in strict accordance with its guidelines and fixed regulations. The STCU cooperates only with Ukraine under the terms of the Target Research & Development Program, and cooperation with Georgia in the Program implementation is regarded as being significant factor in encouraging the continued development of science in Georgia.



U.S. Civilian Research and Development Foundation (CRDF)

On the initiative of the Georgian National Science Foundation, a meeting of **Mr. John H. Moore**, the Vice Chair of the Board of Directors of the U.S. Civilian Research & Development Foundation (CRDF) with the First Deputy Minister of Education and Science of Georgia, **Mr. Alexander Didebulidze** took place in September 2006. The Georgian side expressed its desire to participate in the special program: “Basic Research and Higher Education” (BRHE). The president of CRDF, **Ms. Cathleen A. Campbell** was formally notified of this information.

The program will encourage integration of basic research and higher education in one of the universities of Georgia through the establishment of a Special Research and Education Center.

An agreement on the conduct of a cooperative grant competition was concluded between the Ministry of Education and Science of Georgia and the CRDF on the basis of co-funding mechanism, (the Ministry allocated USD 50,000 and the CDRF – USD 250,000). Out of 9 project proposals submitted under terms of the the competition, one from the Ilia Chavchavadze State University was successfully funded, and the actually implementation of the project will commence starting in January 2007.

Financial Activity

For current expenses of the Foundation's office, funding allocated under the Law on Budget of Georgia in the 2006 State Budget was 500,000 GEL.

In addition to the 2006 State Budget-allocated funds, the Foundation-managed funds were replenished by a balance of the 2005 State Budget-allocated funds remaining on the bank account as of 1 January 2006 in the amount of GEL 28,369.

The 2006 cash expenditures totaled 432,276 GEL, including:

- Salaries - GEL 275,135
- Social deductions - GEL 55,027
- Travels - GEL 3,081
- Other commodities and services - GEL 47,833
- Capital costs - GEL 51,200

The 2006 actual costs totaled 418,728 GEL including:

- Salaries - GEL 275,135
- Social deductions - GEL 55,027
- Travels - GEL 2,474
- Other commodities and services - GEL 34,892
- Capital costs - GEL 51,200

Chart 16.

The GNSF' budget execution

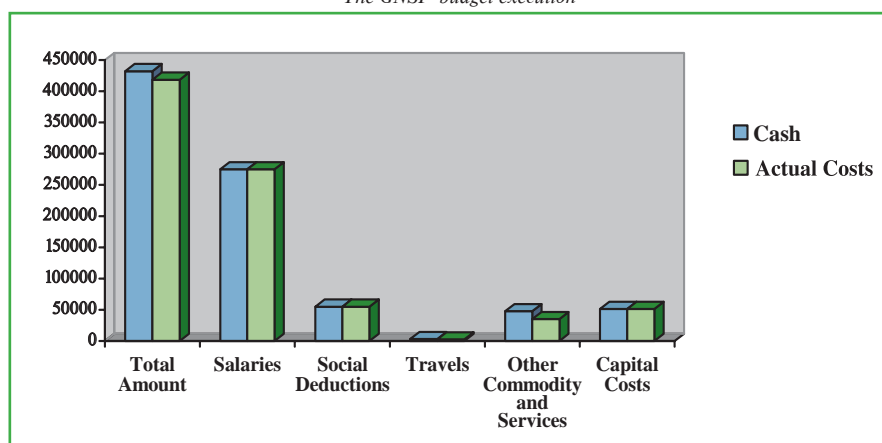
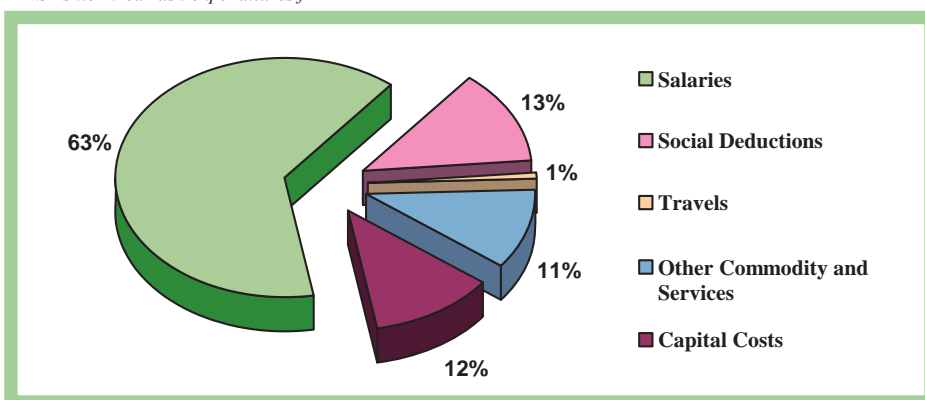


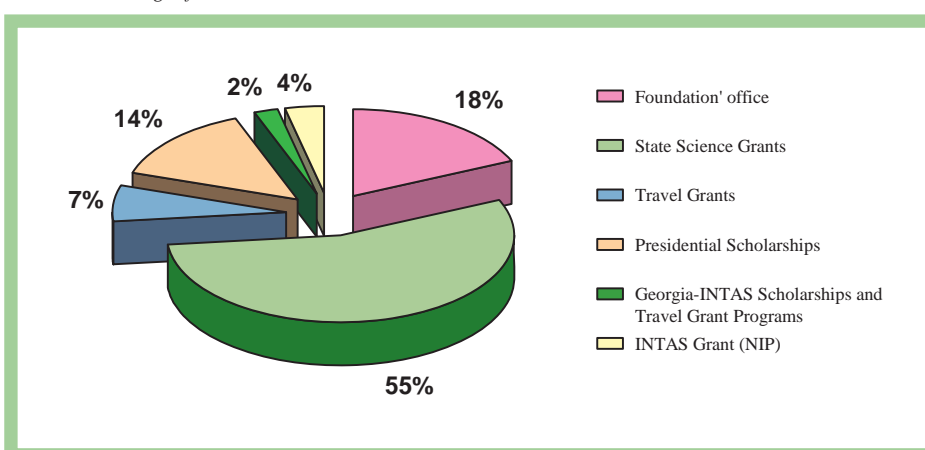
Chart 17.
GNSF's itemized cash expenditures for 2006



In 2006 GNSF administrated several programs, including local and international grants and scholarships.

The breackdown of Foundation managed funds was as follows:

Chart 18.
Foundation-managed funds

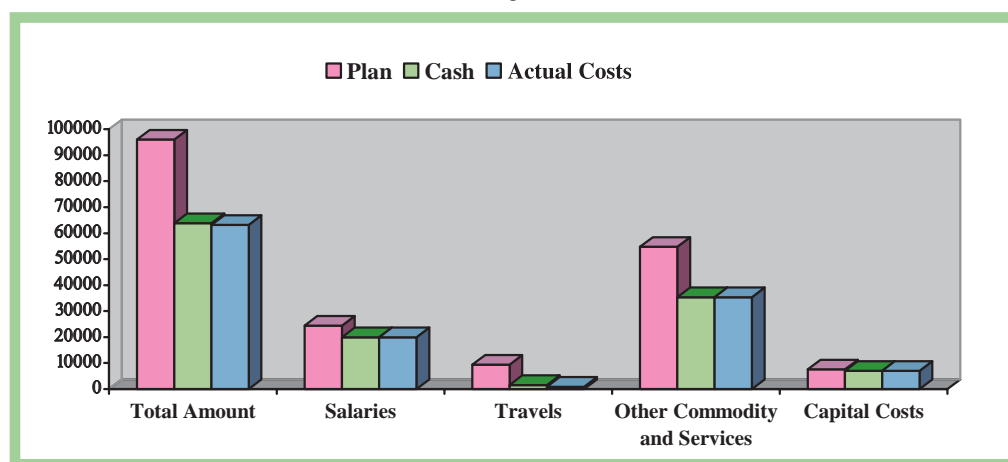


Besides the allocated budgetary funds, the Foundation had access to special-purpose revenue under terms of as a monetary grant from an international organization. The grant aimed at establishing a National Information Point (NIP) within the EU 6th Framework Programme (FP6) of Research and Technological Development on the basis of INTAS (the International Association for the Promotion of Cooperation with Scientists from the Newly Independent States of the Former Soviet Union).

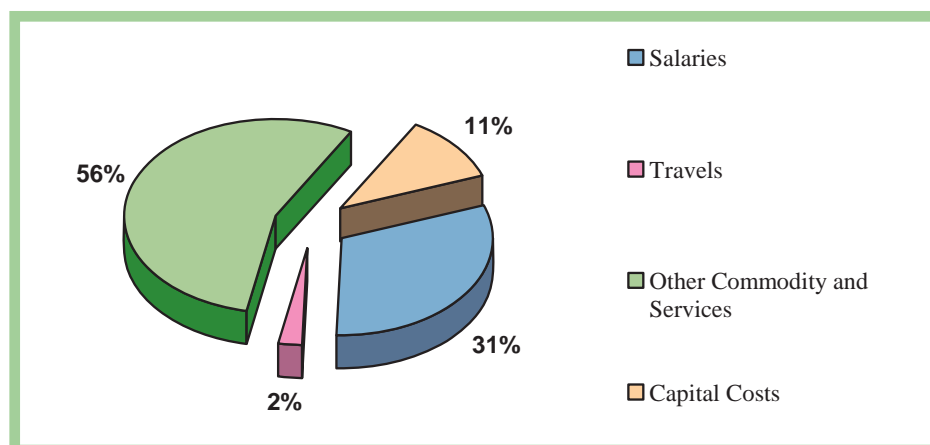
12 individuals were employed to run the NIP. The budget under the grant agreement totaled 44,061 Euro, or 96, 031 GEL, including:

- Salaries – GEL 24,411
- Travel expenses – GEL 9,372
- Other materials and services – GEL 54,738
- Capital costs – GEL 7,510.

*Chart 19.
The NIP budget breakdown*



*Chart 20.
The itemized cash expenditures of the NIP*



GNSF Team



· Abbreviations:

MES	Ministry of Education and Science of Georgia
GNSF	Georgian National Science Foundation
NATO	North Atlantic Treaty Organisation
EU	European Union
INTAS	International Association for the Promotion of Cooperation with Scientists from the Newly Independent States of the Former Soviet Union.
TACIS	EU's relations with Eastern Europe & Central Asia (Technical Assistance for Commonwealth of Independent States)
ISTC	International Science and Technology Center
STCU	Science and Technology Center in Ukraine
CRDF	U.S. Civilian Research and Development Foundation
BSEC	Organization of Black Sea Economic Cooperation
ICBSS	International Center for Black Sea Studies
LEPL	Legal Entity of Public Law
GEL	Georgian Currency