COUNTRY REPORT NO. 1

THE SCIENCE, TECHNOLOGY AND INNOVATION SYSTEM IN

REPUBLIC OF ALBANIA

JANUARY-2006

Country Profile, 2003	
Area	28,748 sq km^2
Population	3,2 million
GDP (current US$)	7,4 billion
GNI per Capita, Atlas method (Current Euro)	2.04
GDP growth (annual %)	5,7
GDP implicit price deflator (annual % growth)	1,8
GERD as % of GDP (2003)	0,18
Value added in agriculture (% of GDP)	22
Value added in industry+Construction(% of GDP)	23.4
Value added in services (% of GDP)	54.6
Exports of goods and services (% of GDP)	21,9
Imports of goods and services (% of GDP)	44,0
High-technology exports (%of manufactured exports)	n.a
Foreign direct investment (2002), (current US$)	344 million

Source: INSTAT, Albania; Worldbank, World Development Indicators database (2004); CIA, World Factbook 2004

In the four years following 1992, Albanian GDP rebounded from its lowest level growing at rates near or even higher than 9% per year. Thus real income almost recovered the level of 1990. Statistical estimates of output may disregard the role of informal sector, and the improvement in the quality of goods and services, underestimating the actual size of GDP growth. Between the end of '93 and the end of '95, the largest imbalances in Albanian economy tended to ease; After a severe crisis in 1997, the economy recovered quite rapidly; GDP rebounded by about 9% in '98 and 13% in '99.

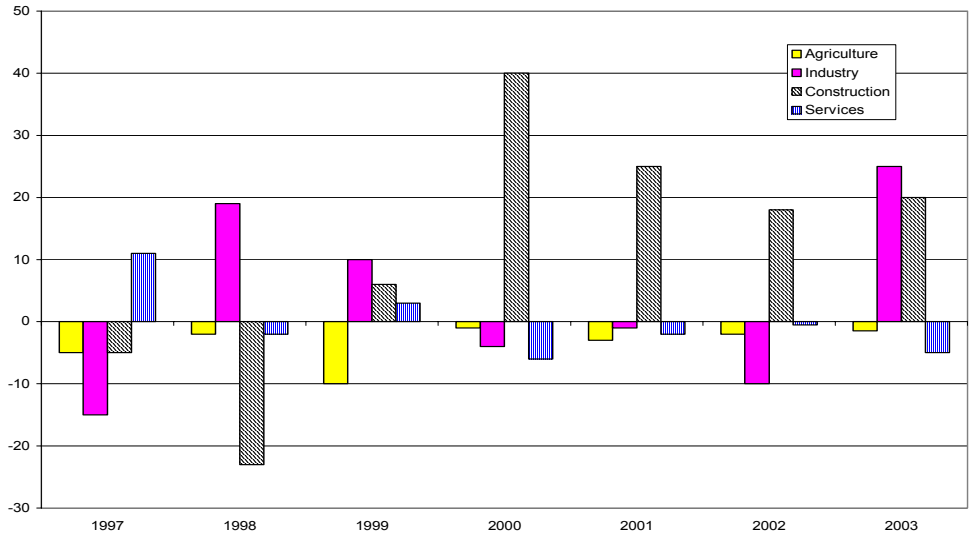
Table 1: Main growth indicators

	1996	1997	1998	1999	2000	2001	2002	2003
GDP at current prices (million leks)	351113	353642	417,009	480581	532977	590282	631338	714049
Annual real growth of GDP	9,1	-10,9	8,6	13,2	6,5	7,1	4,3	5,7
Average annual population (thousants in habitants)	3076	3,75	3055	3054	30671	3074	3094	3111
Per capita GDP								
thousant of Leks	114,2	115	136,5	157,4	174,1	192	204,1	229,5
Euro	846,8	683,5	813	1073,8	1315,6	1496	1546,1	1667,6
annual real growth at constant prices		-10,9	9,2	13,3	6,3	6,7	3,7	5,1

Source: Institute of Statistics, Albania (INSTAT)

In the most recent years, the sector contributions to economic growth were quite oscillating, apart from the boom of construction. Table 2 compares the Albanian's growth rates with growth rates of the South Eastern European Countries (SEEC). Although Albanian growth has been impressive, there is a concern about the sustainability of so fast pace in the future.

Figure 1: Sectoral growth compared to GDP Growth (difference between annual growth rates)



Source: Institute of Statistics, Albania (INSTAT)

Table 2: Real GDP growth in other countries and Albania

Countries	2000	2001	2002	2003
EU(15 countries)	3,7	1,8	1,1	0,9
SEEC-7	3,9	4,5	4,2	4,2
Albania	6,5	7,1	4,3	5,7
Bosnia-Herzegovina	4,5	2,3	2,3	2,5
Bulgaria	5,4	4,1	4,9	4,5
Croatia	2,9	4,4	5,2	4,3
FYROM	4,5	-4,6	0	2
Romania	2,1	5,7	5	4,9
Serbia-Montenegro	6,4	5,5	4	4,5

Source:Eurostat, IMF and INSTAT

1.1. R&D INVESTMENT AND HUMAN RESOURCES IN S&T

1.1.1 R&D Expenditures

The national statistical office (INSTAT) in Albania has not provided official statistics for R&D funding and performance according to the OECD Frascati manual and national data gathering was scattered. Government expenditures on R&D in Albania account for approximately 85% of the expenses by the research institutions.

According to the data of Table 3 R&D intensity varied around 0.17% to 0.19% of GDP. After the deep financial and social crises due to the collapse of the "pyramid schemes" in 1997, in 1998 R&D intensity increased to 0.19%. The Kosovo-Crisis in March 1999 affected also government R&D spending heavily and R&D intensity was at a mere 0.11%.

With the ongoing EU integration of Albania into the international community and donations provided by the World Bank and the European Commission for economic restructuring, a consolidation of R&D activities may be expected.

Table 3: Government expenditure on R&D (%)

	1996	1997	1998	1999	2000	2001	2002	2003
Government expenditure on R&D/GDP								
as % on GDP	0.17	0.14	0.19	0.11	0.17	0.18	0.18	0.18
as annual rate by years		84.03	169.45	67.70	177.52	112.58	106.30	107.87

Source: INSTAT Calculations

1.1.2 Human Resources for R&D

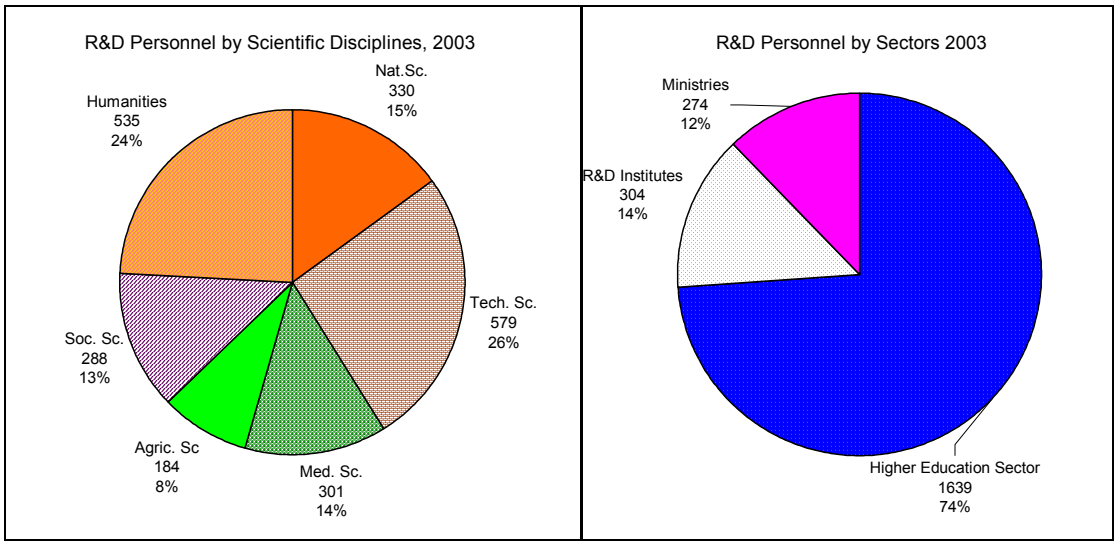
Researchers in Albania are allocated in:

- research institutes/centers of Academy of Sciences,
- research institutes/centers, and scientific stations/incubators of the ministries,
- universities,
- R&D units in the private sectors of the industry: multinational companies Computer sciences, food production, technology, civil engineering ect.), small and medium enterprises,
- NGO research institutes and research centers.

Most of the Albanian R&D performance is concentrated in the institutes and centres of the ministries, the Academy of Sciences, the universities and the government sectors, which account together for about 97% of R&D performance. The private sector R&D is marginal. With regards public R&D, the Academy of Sciences accounts for the highest share of scientific activity.

Official statistics for human resources in science and technology in Albania for R&D employees and researchers do not equate to Full Time Equivalents (FTE) as defined in the OECD's Frascati manual. Especially in the higher education sector, researchers are only partly engaged in R&D activities and from 1990 onwards human resources in science and technology decreased drastically.

Figure 2: R&D Personnel by Scientific Disciplines & Sectors of Employment (2003)



Source: Academy of Sciences (ASA), Ministry of Education & Sciences (MOES), Agency of Accreditation of the High Education

Almost 40 % of researchers are allocated in the natural and technical sciences as can be seen by the distribution of researchers by scientific disciplines; in the medical sciences 14% and in the agricultural sciences around 8%. Scientific personnel are numerous in the universities, but the universities have a low contribution to R&D, which urgently calls for changes in the research system.

Research personnel from the natural and technical sciences, medicine sciences, agricultural sciences, social and humanities sciences contributed to the shift of researchers from research institutes to the higher education sectors as an external staff of the public and private education sector (around 1830 persons) in the last decade. Around 120 scientists of the Academy of Sciences contribute to the higher education of the country's universities.

Generally, the quality of the science system is considered much higher than the level of the economy would suggest. One reason for this can be seen in the sufficient supply of human capital, despite sever brain drain problems (see following section). Although the level of higher education has decreased and facilities have not been modernised, the system of education is capable of supplying a sufficient large elite of scientist to keep up the status of the science sector. However, there are severe difficulties in providing high qualified graduates on a broad basis and the ongoing process of highly educated people leaving the country poses threats for the human capital basis.

1.1.2.1. Brain Drain

Various surveys show that during 1990-1999, approximately 40% of the professors and research scientists of the universities and science institutions in the country have emigrated. This exodus is growing and a 1998 survey shows that even more of the highly educated people want to emigrate. Sixty three per cent of the respondents from universities and science institutions, mainly young people, wished to emigrate for a long time or forever. Another survey in 1999, of 300 academics who received Ph.D-s in the West during the 1980s and the 1990s, revealed that 67% had emigrated. It is clear that if the economic and social situation in the country does not improve, the Albanian brain drain will continue as intensively as before.

The emigration of the highly educated elite started after the first wave of mass emigration. It began with the implementation of economic reforms, which meant hardship for all the population and above all, a reduction of real wage and declining employment in Albanian science institutions occured.

Until 1994, the bulk of the emigration was to Greece, Italy, France and Germany. Later on, more emigrants went to the USA and Canada. From 1996, the USA became the most popular choice for well educated people seeking to emigrate.

Emigrants include highly educated and qualified people from all industrial sectors and scientific disciplines, who were formed in Albania's high schools, universities, science and arts institutions. Some of them, in particular during the 1980s and 1990s, were educated and trained in the universities of Western Europe or the USA.

Higher educated emigrants are mostly young and male: 51% of them are under 40 years old and approximately 67% are males. The majority of highly educated emigrants (67%) have left with their families. This demonstrates that they plan their departure carefully, have clear goals and aim to create stable, well-integrated lives in the host country. An important factor influencing these moves, is that these highly educated people have been either studying in foreign universities or have attended long-term training courses in science institutions of Western Europe. This is particularly the case with emigration to France, Austria and Great Britain and to a lesser extent to Italy and the USA.

However, many highly educated people who have gone abroad do not work in their area of specialization. Data from a 1998 survey reveals that in Greece approximately 74% do not work in their previous

area of activity. In Italy, this figure drops to 67%, in Austria to 58% and in the USA to 70%. This indicator is lower in Germany, approximately 47% and in France only 19%. It is reasonable to conclude that most of emigrants will eventually forget their skills and knowledge's that they have developed.

After the collapse of communism, thousands of young people, with financial assistance from foreign foundations, the EU and scholarships from foreign governments and university studies in Western Europe or the USA. This contingent of the Albanian society, which is exposed to Western methodology and practice especially in the field of science, is in a position to revitalize all institutions in Albania and give new impulse to social, economic and political life.

However, the continuous brain drain poses a severe threat to this system. Driving forces for the brain drain are seen in the deteriorated economic living conditions, the lack of state-of-the-art infrastructure and funds that constitute serious obstacles for research, and restrictive visa regulations that hinder scientific exchange and temporary employment abroad.

Some of the highly educated people return after their studies and others may consider it. But given the Albanian reality - a prevailing culture of bureaucracy, indifference and mediocrity in public administration - there is little to encourage them to seek to live here, to participate in public life and to help solve the very real problems of the country. In this year the new government has planned to provide facilities to encourage higher educated people to return to Albania hopefully resulting in a "brain gain".

1.2. INSTITUTIONAL CAPACITY FOR S&T

The government institution responsible for managing, planning and financing of public R&D activities is the Ministry of Education & Science (MoES). The Academy of Sciences (ASA), as an independent institution, receives funds from the government approved by the Parliament.

Albania has no specific funds or agencies that are responsible for financing R&D activities, but a national competitive R&D programme is operating on behalf of the ministry including co-operative processes with ASA and other research institutions concerning priority setting of the national programme. Besides MoES there are other relevant intermediary institutions and research performers of the Albanian STI-system as shown in Figure 4.

Figure 3: Official Structure of the Albanian STI-system

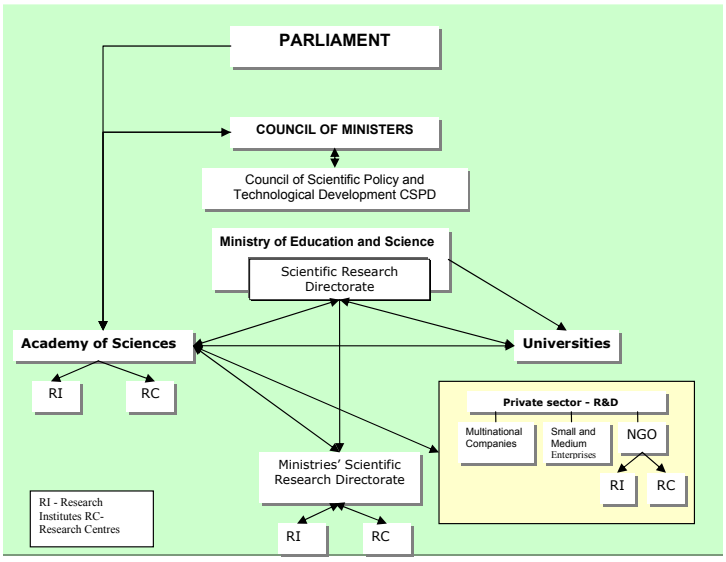
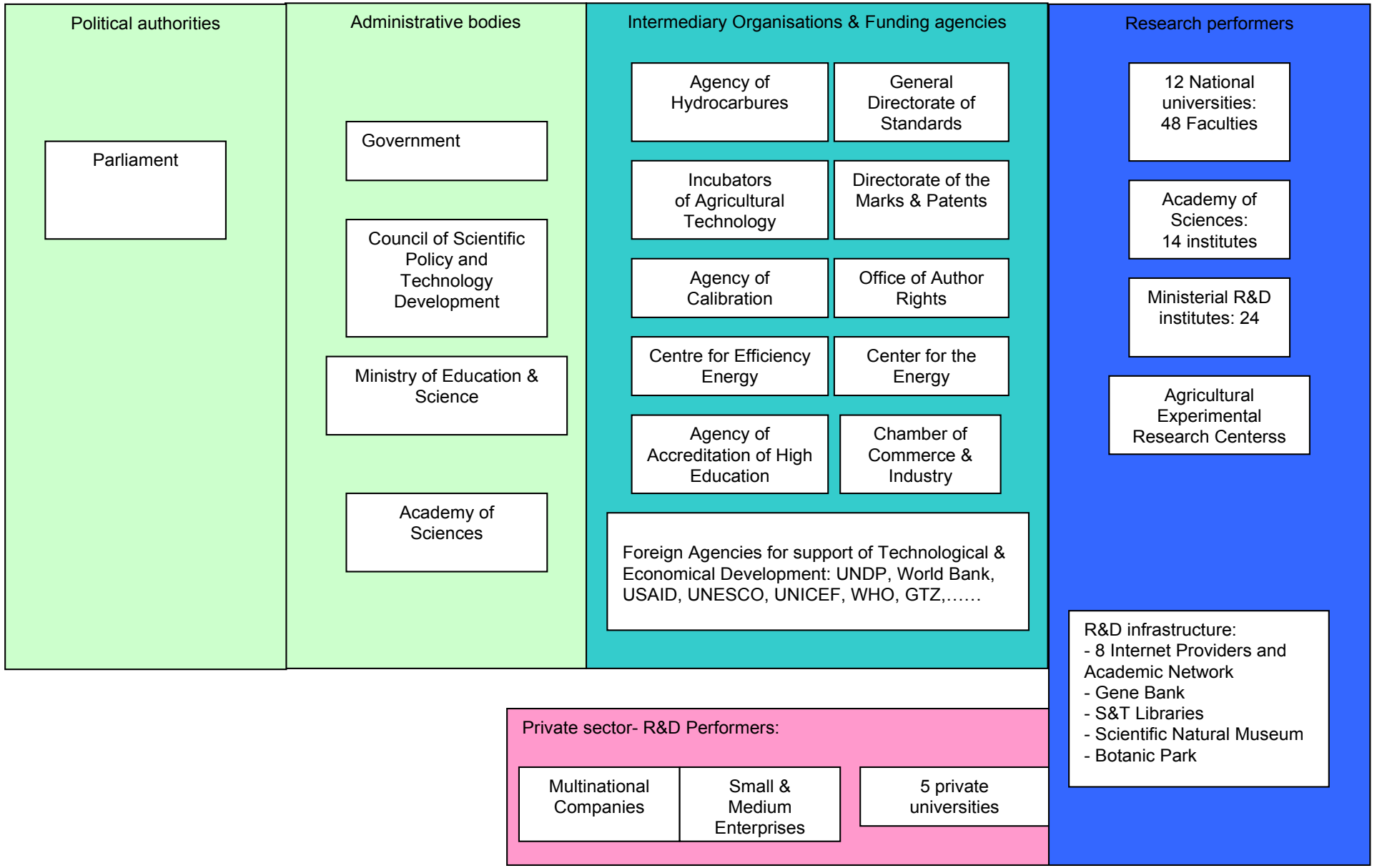


Figure 4: The Albanian STI-System



In the following we provide a description of roles and capacities of research performers, intermediary institutions and government bodies.

1.2.1 Research Performers

Besides the scientific institutions of the Academy of Sciences, the other non-university scientific institutions are scattered and not yet well orientated in the economic situation of a rather long, hard and difficult transition period. As a consequence, most of them could not offer any information. That is why, in this modest presentation, we are compelled to write about the network of the Academy of Sciences of Albania, whereas the other institutions are generally described.

1.2.1.1. The Academy of Sciences

There are 14 scientific institutions within the network of the Academy of Sciences of Albania. Out of them 7 belong to the natural and technical section and 7 to the section of human and social sciences.

The central library of the Academy of Sciences, along with its branches in almost all scientific and research institutions of the Academy, support the activities of all of them. Besides, the publishing house, "Shkenca" (Science), plays an important role as well, especially in all publications of the Academy.

The institutions within the network of the Academy are characterized by the following specific traits:

- a qualified staff of about 274 researchers, most of them with a high academic record;
- intensive cooperation with Universities in teaching, because most of the academic staff are lecturers at the Universities of Albania;
- clear research programs, closely linked to the problems of actual developments of the country, in all fields;
- clear procedures of planning, controlling and evaluating of the scientific activity;
- independent financial management in the institutions;
- the communication network, connected with that of the Academy
- gradual improvement of modern technologies;
- relatively firm infrastructure of equipment.

1.2.1.2. Research institutes of the Ministries

The new political system inherited a great number of R&D institutions, which ought to present a balanced combination of R&D activities, and important tasks of provision of services and monitoring activities in specific fields. Different from ASA research institutes, the research institutes acting directly under the authority of ministries are in a persistent hard situation.

The main challenge that the system of research institutions of Ministries faced after the '90s was the transformation from an institutional system designed to function in a centralized economy to a system that should function in conditions of a market economy – a very difficult process.

Concerning financial aspects, the majority of these institutes relies mainly on the state budget, with little secondary income. The main part of budget funds is destined for wages, little remains for infrastructure provision. Only a few institutes are up to the standards required and the financial situation does not allow for renewing the equipment. The institutes lack qualified personnel as well as clear and well orientated programs operating under market economy circumstances. Furthermore, there is an

unjustified fragmentation of some institutions of the same kind. Currently, the Albanian government initiated a new attempt to reform these institutions.

1.2.1.3. Universities

In higher schools and universities, the main R&D activities are carried out in humanitarian, economical, social-juridical and medical sciences, and partly in natural and technical sciences. They are mainly concentrated in Univ.Tirana, Polytechnic Univ.Tirana, AgricultureUniv.Tirana, Univ.Shkodra, and partly in Univ.Elbasani. Anyway, there are present significant inequalities between universities of the country.

The great human potential is not used at the level required and the part of the academic personnel that is active in R&D is motivated mainly by passion, reputation and the will to obtain scientific degrees and titles. The main reason for the small share of R&D in the University sector is due to lack of direct financing. The funding required for performing scientific research, defined as a separate item in the budget of higher schools (Article 23 of the Law on Higher Education), was never effectively allocated to the Universities. Hence, universities in Albania are mainly orientated towards teaching process due to lack of financing. For reasons outlined above, scientific research is very limited and only possible if particularly linked with foreign cooperation.

1.2.1.4. Private Sector R&D

There are very few private institutions, which work mostly in the field of human, social and political sciences. Their personnel structures, as well as their financial and co-operation procedures are not stable. However, in the field of Information Technology the private sector became dominant providing market activities with research and development character. The private sector now constitutes the greatest body offering services, solutions and developments. There are examples also from other fields, such as in the environmental sciences.

1.2.2 Appraisal of R&D institutions

Having respect and acknowledging the R&D activity in the above-mentioned institutions, shortcomings in the institutions themselves and the organization of R&D can be identified:

- there is no institutional organization with programs and projects of wide interests;
- in many of sub-structures of institutions there is no scientific life as conferences, journal production etc. in continuity;
- despite of positive efforts for a successful cooperation at an international level (a witness of existing potential and competence), the national programs for R&D are not used to the same extent as they could be used.
- a considerable part of the qualified staff cooperates outside of institutional structures with other entities for other studies, from which these entities make profits.

1.2.3 Institutions in the sphere of S&T policy making

According the existing laws, the Parliament approves the laws concerning the functioning of the S&T system, the budget for R&D activities, the Higher Education sector and the Academy of Sciences. The Government according to LSPTD “creates the legal and organizational condition for the S&T activity and supports the activity of relevant state institutions and their personnel”. It approves the priority areas

(PRA), the budget for the National R&D Programs (NRDP) and the establishment or closure of public R&D institutes.

The Council of Scientific Policy and Technology Development (CSPTD) is created via the Council of the Ministers and consists of heads of ministries, central bodies and distinguished scientists. The council should not exceed 15 members. CSPTD approves the thematic fields and the priorities of the S&T policy and National R&D Programs. It makes recommendations and proposals concerning draft laws and decisions on the S&T activity and the PRA. The main player in the sphere of S&T policy at the government level is the Ministry of Education and Sciences. It's tasks and responsibilities are described below. The

1.2.3.1. The Ministry of Education and Sciences

The Ministry of Education and Science (MoES) has the following national responsibilities:

- To present to the Council of the Ministers all the draft laws for the S&T prepared by the ministry itself, or other players in the field of S&T;
- Creation and implementation of S&T policy and a strategy for the development;
- A national coordination role between the different actors in S&T;
- Development and promotion of R&D activities for technological and economical development;
- Responsibility for administrating national S&T programs funded through the Public Investments Program (PIP);
- Support for S&T programs in other ministries and financing of specific programmes for the technological development;
- Drafting of national S&T policy documents;
- Drafting of the total budget for NRDP and providing the draft budget for the R&D for the universities;
- International S&T cooperation through different programmes;
- Preparing and Financing bilateral cooperation;
- Training and development of researchers and other activities, at the local, national and international level.

The Academy of Sciences, the Ministries' scientific directorates, and the universities are obliged to provide all the scientific activity reports and statistics needed to the Directorate of Scientific Research of MoES as the governmental body responsible for S&T of the country.

1.2.3.2. Communications and Relations with Actors of the R&D System

As shown in Figure 3, MoES, ASA and Ministries are responsible for their own R&D institutes. The Law on Science Policy and Technological development (SPTD) states that the objectives of the S&T policy are attained through National R&D Programs (NRDP). There is a good cooperation and communication through MoES, ASA and Ministries' Scientific Research Directorate.

The State Budget finances R&D activities in two complementary ways: institutional funding and funding via the national R&D programs. The central organisations of research institutions receive the institutional funding to support the R&D activities of their dependent institutions.

Funding via the National R&D Programs has the role to finance "bottom-up" initiatives for research and development from the state budget. For the development of the priorities of the National S&T Policy Programmes MoES includes ASA, Ministries' scientific directorates and universities. MoES receives the funds to finance different projects on a competitive way following established standards procedures. The funds designated for the NRDP are then directly given to the organisations that manage these programs;

The NRDP and the governance system are described in more detail in chapter 1.3 Strategies, Programmes and Governance for R&D.

1.2.3.3. Responsibility for International R&D Co-operations

Although the Ministry of the Foreign Affairs (MFA) of Albania also has the responsibility in the field of the international co-operations, MoES has full autonomy and responsibility for the international R&D co-operation as:

- negotiation with partners in international and national S&T institutions;
- contracting the framework for the international bilateral and multilateral S&T cooperation, as an obligatory basis for the domestic, state-owned R&D organization;
- financing of international bilateral and multilateral S&T activities, which are selected and approved by the Ministry.

On the other hand ASA has full autonomy and responsibility:

- for the international R&D co-operation as: negotiation with partners in international and national S&T institutions according the priority fields of expertise;
- with the permission of the MFA ASA has the right to do negotiate with international organization (like: WMO, IAEA, CTBTO, BSEC, UNESCO-ROSTE, Venice, CNR-Italy, CNR-France, ect.);
- the cooperation with academies in the world;
- to be national contact point for the foreign institutions on the same fields of the expertise;

1.2.4 Intermediary and Technology Transfer Institutions

There are some multinational companies and international organisations (for the mineral exploration, Petrol and Gas, constructing, Information technologies, Small & Medium Enterprises (in the different fields, like agriculture, food production, etc.) acting as intermediary institutions between the research system and the economy. At the national level the Chamber of Commerce, the Directorate of Trademarks & Patents, the General Directorate of Standards, the National Agency of Hydrocarbons, the Centre for Efficiency Energy, the Center for Energy, and the Agency of Accreditation of High Education have the role of intermediaries and technology transfer.

The main actors are:

- Foreign International Organisms for Support of Technological & Economical Development;
- Agency for the Development of Small & Medium Enterprises;
- Innovation Centers and Technological Incubators;
- National Directorate of Trademarks & Patents
- Chamber of the Commerce and Multinational companies;
- Information Technology and Internet Development Agencies, ect.

There are numerous important international agencies for support of the Technological & Economical Development active in Albania: UNDP, World Bank, USAID, FAO, WHO, UNESCO, UNICEF, GTZ, SOROS Foundation….., which are present in Albania; According their tasks andresponsibilities they support many economic priority fields in Albania, but the focus in this paper is on the role of national actors in the field.

1.2.4.1. Agency for the Development of Small & Medium Enterprises

The agency was established in 1991. It has the basic aim to support the setting–up of the SMEs according to markets needs, to foster the capabilities of human resources for the specific businesses, in order to promote the development of the SMEs in the country (Dushniku M.1991). Among a variety of tasks and missions the agency should

- provide support for SMEs in the process of acquiring new technologies,
- should establish an information system with data of importance for SMEs,
- and should contribute to the transfer of knowledge and technologies.

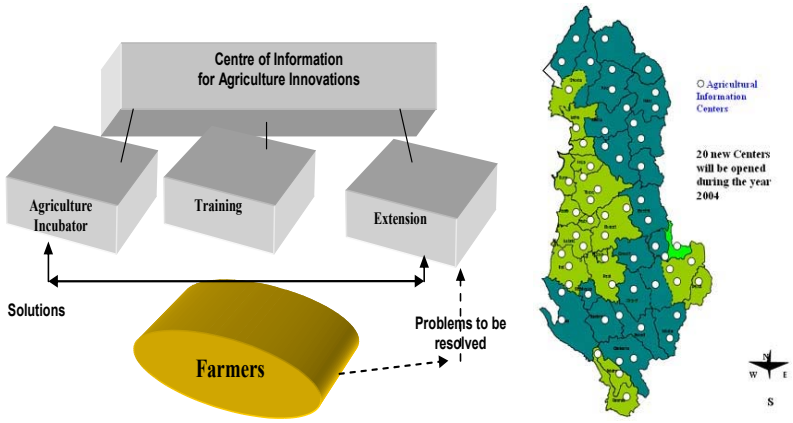
So far, the agencies failed to support the commercialization of new technologies and products developed in R&D sector. Nevertheless, the work of this Agency seems very effective and is continuing with a positive trend.

1.2.4.2. Innovation Centres and Technological Incubators

Actually, there are no Innovation Centres in Albania. Some small innovation initiatives take place at the level of small and medium enterprises (electronic technologies, computer productions etc.). The Academy of Sciences has set up technology incubators at the Institute of Seismology, the Institute of Biological Research and the Institute of Nuclear Physics.

Furthermore, the Ministry of Agriculture Food and Consumer Protection (MAFCP) has established incubators for agriculture technology according to the needs of the agricultural market and development perspectives. Incubators have been established at the Institute of Veterinary Research, the Institute of Livestock Research, the Institute of Public Health and the Institute of Arable Crop Research.

Figure 5: Centre of Information for Agriculture Innovations



Source: Ministry of Agriculture Food and Consummator Protection (MAFCP)

Technology transfer in the field of agriculture, aiming at technological upgrading and especially information provision and active help for farmers, is provided via a so-called "Extension Service" (Figure 5). The National Extension Service offers technical, financial and business advice to farmers through a network of about 180 Extension Officers. These officers receive training and information through five Extension Coordinators who respond to the Head of the Extension Section of DSES. The activities of all Extension Officers are regularly monitored by DSES, and their participation in on-farm research projects is organised by DSES. However, DSES does not have a management responsibility for an extension to the District level. Extension officers are employees of district directorates of MAFPC. Each district has one or more Information Centres, operated by Extension Officers, where farmers can come for advice and obtain booklets and leaflets on a range of agricultural topics. Interaction with the Research Service is an important duty, and this is ensured by having both services represented at top

level in DSES. The problem of transferring information to 400,000 small farms is a huge one, but the Extension Service is growing in effectiveness despite a decrease in its income through termination of international aid.

1.2.4.3. National Directorate of Trademarks & Patents

The National Directorate of Trademarks & Patents has no sufficient number of personnel trained for the substantially changed role in the new market economy and the directorate is directly dependent from the Council of Ministers. There is another small office of Author Rights but working only for the fields of arts and non profit organisations. Table 4 shows the development of patent activities in Albania from 1996 to 2003.

Table 4: Patenting in Albania: 1996 – 2003

Number of patents	***1996***	***1997***	***1998***	***1999***	***2000***	***2001***	***2002***	***2003***
National applications	6	7	11	17	26	40	65	96
others	47	49	68	97	154	260	473	834

Source: INSTAT

1.2.4.4. Chamber of the Commerce and Industry (CCI)

CCI plays an important role in Albania for collecting data and disseminating economic, trade, industrial, technological and social information among the business community in the whole country. Through collecting appropriate country data, building adequate information systems and publishing the research results achieved in cooperation with other institutions, CCI plays an important role concerning the achievement of the following objectives:

- collection of general information on sustainable development and related trends in general;
- dissemination of information on sustainable development to the business community, public and leaders of economic development by regular public reports, published also on the Internet, and by other means of information dissemination ;
- helping to create the vision of sustainable development in the region of Tirana and in the country.

1.2.4.5. Information Technology and Internet Development Agencies

Research is useless if the results cannot be communicated to potential beneficiaries. In Albania the infrastructure for disseminating information of innovation, technology and R&D matters is weak, but the institutions developing the S&T activity have adopted infrastructures for the information dissemination themselves (see chapter on technology incubators).

Private Advisory Services, such as the Regional Agricultural Advisory Centres Foundation are also active in Albania. Their interaction with appropriate institutes and experimental stations is generally good. There are a lot of private or non profit organization which are developing internet services (Adanet, Albanianonline, ICC, StarSat, Abissnet, SUN, ect.).

Leading by the MoES and ASA started the procedure for the creation of the Albanian Academic Network (AAN). AAN practically in a setting-up phase and still does not cover all the research institutions and centres, universities and other important actors for S&T in Albania; Gradually LAN networks for

each institute's/centers' inside of the ASA system have been created, and the internet services now work regularly.

1.2.5 Appraisal of institutional capacity

The main elements of the actual R&D system can be summarized as follows:

- a network of research institutions is identified in the country;
- the scientific community depends administratively heavily from ministries;
- universities are considered as education and research structures with a considerable autonomy but limited research capacities;
- the Academy of Sciences constitutes an independent entity and functions practically as a National Research Centre;
- Ministries are in charge of a great number of research institutes, all of them inherited from the former system. There are tendencies and actions for decreasing their number.

The actual scheme of administration of scientific research contains fundamental elements such as:

- the legislative base;
- the division of competence according to the levels, thus the vertical administration and horizontal autonomy are sanctioned;
- the identified network of research institutions;
- the way of financing, thus the institutional one (budget addressed directly to institutions) and the programming one (financing according to projects or programs);
- the platform of international relations, the involvement of institutes in the network of services, especially the monitoring ones.

The most serious problems are:

- the legislative base and different links of vertical administration leave much to be desired;
- the actual supporting infrastructure is insufficient and with limited competence;
- the system of research institutions is dispersed, with many small and unnecessary units;
- the development policy of research institutions continues to demonstrate in many cases lack of adaptation to the new economic situation;
- the level of research in universities is not at the proper level;
- there are no standards of quality and quantity in evaluating the institutions and scientific work;
- the cooperation between different units inside the country continues to be low;
- the basic infrastructure is of low level;
- the information for respective scientific communities outside the country is missing;
- the international integration is still low;
- conducted studies made in the past, have a low practical impact.

1.3. STRATEGIES, PROGRAMMES, AND GOVERNANCE FOR R&D

1.3.1 R&D Strategy and Governance

The system of scientific research in Albania is relatively young, starting with some centres and institutes, which began making necessary studies in some fields, such as economic, social and cultural ones in the fifties of the last century. A special importance was attached to the transfer of techniques and

technologies. By the end of the '60s, a part of laboratories created at the University of Tirana were converted into institutes. In 1972, a series of existing centres and institutions were built under the jurisdiction of the Academy of Sciences. Since the very beginning, two groups of institutions were crystallized inside the Academy of Sciences: the social and the natural-technical ones.

From the aspect of social sciences, we may say that the Academy collected almost all the institutes involved in social, historical and linguistic studies. By the creation of the Academy of Sciences, a system of scientific research was established in the country, which continues to exist also today, regardless of some new elements, especially in the legislative aspect.

In order to identify and manage in a more direct way and with the idea of an ever greater role of research-development activities in the general activity, in the year 1976 the Committee of Sciences and Technology was created, practically in the role of a Ministry.

The success of scientific work was mainly related to the fact that the scientific staff was thoroughly selected, objectives of institutions were well-defined, and there was a coordination of R&D activities with development requirements. The introduction of a scientific system, in which scientific degrees and titles were awarded by individual competition, gave a great impulse to the scientific work.

Thus, up the middle of the '80s, the scientific research was in a rise and could be characterised by three basic components: The institutes of the Academy of Sciences, the institutes of Ministries and the Universities.

After 1990, efforts at a political level began to realize some interventions, which aimed to introduce scientific research in normal courses: groups of international experts (UNESCO, 1990) made feasibility studies and proposals for thorough reorganizations. The research was financed by UNESCO and UNDP and presented to the Ministry of Education and Science in the report "The development of Albanian S&T Policy". The impact of the proposals herein were practically unnoticeable.

Work for placing R&D activities on a special legislative base also began. From the legislative viewpoint, there was no specific law on science up to the year 1994 and all scientific institutes were created or closed by a Government Decision, in which the object of work of the institute was also defined. The national system of scientific research was created with structures, rules, and objectives managed in a vertical way.

The Albanian Law on Science Policy and Technological Development states: "Scientific and technological activities constitute a national priority", the institutions responsible for the elaboration and for the implementation of the Albanian S&T politics are pointed out in the Law and, in conformity with their functions, constitute a structure with three levels: political, strategic and operational.

The political level consists of the Parliament and the Government; on the strategic level is the Council of the Scientific Policy and Technological Development; the operational level is formed by the Ministry of the education and Science (MoES), other Ministries and the Academy of Sciences.

The functioning and the relations between these institutions is set up mainly three regulations:

1. the Law on Higher Education in the Republic of Albania (2/25/1999)-LHE;
2. the Law on Science policy and technological development (12/22/1994)-LSPTD;
3. the Status of the Academy of Sciences approved by the President of the Republic and Law of the Albanian Academy of Sciences (2/03/2004)-LAAS.

A managerial scheme was further completed, creating the Council of Scientific Policy and Technological Development (CSPTD), as the highest organ, for formulating the development policy of the sector, led by the Prime Minister.

The scheme of financing was enriched: besides traditional institutional financing, financing via R&D programs was introduced (see chapter on the National R&D Programs). Theoretically equally open to all of the actors, the essence of these new measures was to introduce competition into research funding. Along came the introduction of a concept of priority fields and the national programs of research-development were introduced.

The co-operation with international communities was extended considerably. The Law on Science and Policy Technological development gives opportunity to organizations such as Ministries, research institutes, the Academy of Sciences and Universities to sign bilateral agreements with similar institutions of other countries. In the process of integration of Albanian science with the European one, the way of bilateral agreements is being followed, especially with member countries of the European Union. On the level of MoES Albania has signed two bilateral agreements implementing by projects: with Italy (Ministry of Foreign Affairs) and with Greece (Ministry of Development, General Secretariat for the Science and Technology).

The Academy of Sciences has a bilateral agreement with Greece, Italy, Kosovo, Austria, Bulgaria, FYROM, Monte Negro, France, England etc. But despite of these important interventions, the system remained relatively closed and did not yet succeed to become an important part of the market of knowledge production and solution provision.

With regards private sector R&D, it is important to notice that in the definitions of the network of research that these structures are not even mentioned, and not included in the government strategies although there is an existing "network" of private units, especially in the field of Information Technology and respective service provision. Partnership and co-existence of these structures are in the favour of both public and private parties and, at last, are in the favour of country's development.

Concerning the political dimension of scientific research, there are still discontinuities and new governments sometimes re-start from the beginning. The government set up an Ad-Hoc group for the reorganization of the R&D system in Albania in 2003. Afterwards a group to implement these recommendations was created. Recently, the Prime Minister of Albania set up an "Expert Group", which is heading for a "Compilation of the Reform in the Scientific Research System" in Albania. (2005).

For the management of scientific research, an important moment constitutes the suppression of the Committee of Science and Technology and the transfer of a part of its competencies to the Ministry of Education and Science. This intervention restricted considerably the importance (not only apparent) of the research-development activity in the agenda of Government affairs. The scope was restricted for MoES, by being focused to national programs and international relations. In fact, MoES covered also the tasks of the Foundation of Science, which, though foreseen by the Law, was not created.

1.3.1.1. Appraisal of R&D strategy

Nevertheless, in these last years a series of positive elements could also been noticed, which in any case cannot compensate the need for a comprehensive intervention, studied, accepted and realized on the basis of some new principles. In a summarized way, the main positive developments are:

- By means of the well-studied intervention of MoES and the approval of the Council of Policy a systemic change in science funding was adopted through the introduction of national programs with three-year cycles and a considerable reduction in the number of priority fields. As an illustration it should be said that up to the year 1995 priority fields changed each year and their number was round (12 at '95-'98; 6 at '99-'02 and 6 at '03-'05). Thus, the meaning of being of priority

was lost, because each field was financed in a modest way (the annual fund is at the level of 410 000 Euro).

- The efforts for an internal integration were increased not only in the aspect of themes but also in the organizational and administrative one. In the applications for national programs and for international projects, MoES adopted the concept of mixed scientific groups, eliminating in some measure the risk of parallel development and duplication of efforts while stimulating at the same time cooperation between different institutions and groups.
- A more active participation in international programs and projects of the scientific community in the country took place.
- A beginning of standardized practices in R&D policy delivery could be observed: in the national programs, the whole procedure was developed according to the European standards.
- Since 1999, balanced bilateral agreements were reached, even financial ones, based on international criteria of evaluation. In realization of the Protocols of Cooperation, under the responsibility of MoES, the same procedure is applied, with the same basic documents and in synchronous way in both countries, according to a bottom-up principle.
- In the last years a slight increase of financial support, especially of the institutional one, was reached. The Academy of Sciences was the main profiteer. In addition, some contributions of donors are orientated in the favour of important studies and developments.
- Successful interventions geared for the improvement of the infrastructure. The ministry of Education and Sciences supported the establishment of modern computer networks in five universities completely, and has completed the training of pedagogical staff for their use.
- A manifestation of elements of cooperation and applications of scientific-technological products (of ASA, Universities and institutions of the ministries) in the private sector took place.
- MoES is showing itself active also in a series of regional initiatives and soon, international scientific relations should be extended to countries like FYROM, Slovenia and Austria.

1.3.2 R&D Programmes

Today, the State Budget finances R&D activities in two complementary ways: institutional funding and funding via the national R&D programs. The institutional financing is given directly to the central organizations to support the R&D activities of their dependent institutions. As financing according programs, it is done:

- through the State Budget funds designated for the NRDP and given directly to the organizations that manage the projecets performed therein;
- through funds given to the Ministry of Education and Science to finance different projects on a competitive way following known and standard procedures especially for international cooperation.

The National R&D Programs (NRDP) are a cornerstone of the Albanian R&D policy delivery. They shall:

- identify R&D objectives under the relevant field;
- identify the institutions and relevant teams for cooperation, including eventual foreign partners;
- identify necessary improvements in infrastructure to facilitate attainment of objectives;
- identify budgetary and eventual extra-budgetary funds;
- identify expected results and time limits.

The role of the NRDP is to finance from the State Budget “bottom-up” initiatives for the R&D. The compilation of each Program of the NRDP describes the main development objectives of the priority

fields. The NRDP is prepared by a group of experts and approved by the standard rules by the Council of Science Policy and Technological development.

MoES is responsible for the implementation and financing of the NRDP with the 100% of the project cost. The programs are implemented through projects, the duration is 3 years. Respectively, the developing of the NRDP was as the follow:

1. In the first round of the National R&D Programs approved for the period 1995-1998 the priority areas were: Agriculture and Food, Energy, Geology Mineral Extraction and Elaboration, Biotechnology, Life Sciences, Informatics and Information Technology, Transportation, Environment Studies, Urbanism, Albanological Studies, Social Studies, and Materials. The financial support of the 38 projects implemented in these programmes was 1,302,013 US Dollars.
2. In the second National R&D Programs for the period 1999-2002 the priorities fields were: Albanology, Information System and Technology, Biotechnology and Bio-Diversity, Natural Resources, Geology, Mineral Extraction and Elaboration, Agriculture and Food. The financial support of the 43 projects implemented in these programmes was 1,041,811 USD$.
3. During 2003–2005 period the National R&D Programs selected were: Albanological and Humanity Studies, IST, Agriculture and Food, Health, Natural Resources, Biotechnology and Biotechnological Diversity. The financial support of the 45 projects implemented in these programmes was 1,071,429 USD$.

1.3.3 International R&D Co-operations

1.3.3.1. Bilateral R&D co-operation

Bilateral R&D cooperation is based on competitive funding for joint research projects. MoES supports these programs, which main goals are the R&D development and innovations based on the priorities of the National R&D Programs. MoES developed bilateral programs through projects with Greece and Italy. Ongoing are the agreement for the Bilateral Cooperation with FYROM, Slovenia, Austria and Turkey. MoES is responsible for the financial support for all the bilateral agreement of the program for the Albanian side.

S&T Cooperation with GREECE

The first program approved at 2000 year. For the period 2001-2002, 11 priority fields implemented by 19 projects with a per project budget of 14000 USD$ (7000 USD$ per year): Agriculture, Information Communication Technology, Environment, Health Sciences, Biology, Materials, Energy, Geology-geophysics, Earth Sciences, History and Archaeology.

The second program approved for the period 2003-2004. 22 projects have been developed with a budget of 24000 USD$ (12000 USD$ per year). The priority fields were: Cultural heritage, Environment, Health Sciences, Geophysics-Seismological Risks and Transport, Networks and Telecommunication.

The third program have been approved for the period 2005-2006. 33 projects with a budget of 24000 USD$ (12000 USD$ per year) have been supported.

According the Bilateral Protocol with the Ministry of Foreign Affaires, Italy, for the period 2002-2004 there have been developed 119 bilateral projects in the priority fields: Cultural Heritage, Environment, Energy, Earth Sciences, Geophysics, Transport and Telecommunication, Public Health, Economy, technological and Exchange Innovation, Agriculture, Veterinary Medicine and Biotechnology.

1.3.4 INTERNATIONAL R&D CO-OPERATIONS

Albanian R&D institutions also participate in multilateral programs; the focus is thereby on EU-programs, UN-programs and on collaboration with all the neighbour countries. Until 2002 year ASA carried out 32 national Projects and for the period 2003 - 2004 realized 5 projects respectively with collaboration with the Balkans and East Mediterranean countries. For the duration 2005 – 2006 Albania is part in 3 National projects and in 23 Regional projects, 5 from these are in collaboration with countries in the Balkan and Easter Mediterranean region.

Albanian institutions have many R&D relations with the foreign homologue institutions. Hence, viewed from this perspective, the brain drain of scientists from Albania can also have some positive impacts on the science system: know-how, state of art, collaboration in our programs and projects etc.

A list of International R&D co-operation projects is attached in the Annex of this report.

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1.5. ANNEX 1: LIST OF BILATERAL R&D PROJECTS

1.5.1 R&D projects with Greece

Table 5: Albanian-Greek Joint Projects (2000-2001)

Title	Albanian Institution	Greek Institution
Capacity Determination Of The Introduction of Kiwiplants In The Central Region of Albania.	Institute of Biological Reseach - Academy of Sciences	Vitro Hellas S.A.
Modeling Biochemical Activities In Free-Living Azotobacteria.	Agricultural University of Tirana	Agricultural University of Athens
Contribution To The Examination Of Quality of Virgin Olive Oil From Corfu And S. Albania.	Experimental Station of Saranda - Olive Institute	Nagref - The Olive Institute of Corfu
Modelling Sheep And Goat Flock Management And Genetic Improvement In Greece And Albania	Small Ruminants Station, Korce	Nagref, Veterinary Research Institute of Thessaloniki
Feasibility Study for an Integrated Rural Development Plan of Certain Area of Albania –Pilot Project	Agriculture University of Tirana	University of Thessaloniki, School of Agriculture
Molecular Identification of Cultivars of Vitis Vinifera And of Individuals of Vitis Sylvestris of Albania By Microsatellite Profiling.	Agricultural University of Albania	University of Crete - Dept of Biology
Influence of Municipal Wastes Application on Soil Quality	Soils Science Institute of Albania	Nagref- Institute of Soil Classification And Mapping
Environmental And Human Resources And Sustainable Development In The Border Zone Between Albania And Greece.	Academy of Sciences- Geographic Studies Center	University Of Aegean - Economic Geography Research Group - Dept of Geography.
On Line And Off-Line Measurements of Radioactivity And Other Environmental Parameters In Seas And Rivers, Using Laboratory Facilities, Floating Buoys And Satelite Communication For The Transmitting The Data On Line.	Institution of Nuclear Physics	National Center For Marine Research
Monitoring of Nuclear And Radiological Emergencies	Institute of Nuclear Physics	Greek Atomic Energy Commission
Study And Evaluation of Lignite And Peat For Various Uses. Characterisation of Lignites of Albania And Greece.	Albanian Geological Survey	Institute of Geology And Mineral Exploration
Archaeological Prospection Through Joint Interpretation of Geophysical Data	Albanian Academy of Sciences	Geomentor
Ballon Angioplasty And Intravascular Stenting As Treatment For Renal Artery Stenosis.	University of Tirana - Dept of Radiology	University of Athens - Evgenidion Hospital - 2nd Dept of Radiology
North - West Greece - Albania Collaborative Study on Epidemiology, Diagnosis, Prevention And Treatment of Viral Hepatitis And Hepatocellular Carcinoma.	University Hospital Centre "M. Theresa"	University Hospital, Medical School Ioannina
Formation of An Albano-Hellenic Network Aiming For The Early Detection of Chronic Liver Disease And Hepatocellular Carcinoma, Using The Experience of The Hellenic Ultrasound Network (U/Snet).	Tirana University Hospital	Athens University School Of Medicine, 1st Dept of Propaedeutic Medicine, Laiko General Hospital
Ancient Bouthrotos. Continuation of The Historical And Archaeological Research With Emphasis on The Preroman Period of The City And Its Rural Area ("Chora").	Albanian Academy of Sciences - Institute of Archaeology	Athens Technological Organization. Athens Centre of Ekistics (Ancient Greek Cities Programme)
Technological Study of Illyrian Terracottas of Aphrodite And Related Ceramics of Hellenistic Period From Belesh, Albania.	University " Alexander Xhuvani" Elbasan	Ncsr "Demokritos" - Inst. of Materials Science - Lab. of Archaeometry
Scale Formation In Heat Exchangers. Formation of Mixed Salts	University of Tirana, Dept of Industrial Chemistry	Forth Hellas - Inst. of Chemical Engineering And High Temperature Chemical Processes
South West Balkan Educational Network Prototype	Ministry of Education And Science	Technological Educational Institute - Dept of Informatics - Tei Epirus

Table 6: Bilateral projects of ASA institutes - GREECE (2001-2002)

Project title		Partners	Duration
1	Archaeological prospecting through joint interpretation geophysical data.	University of Thessalonica-GR Inst. of Archaeology, Tirana, (AAS) Department of Geophysics-Al	2001 2002
2	Environmental and human resources for sustainable development in the border zone between Albania and Greece.	University of Athens-GR Center of Geographical Studies, Tirana, (AAS), Department of Geophysics (Al).	2001 2002
3	Monitoring of nuclear and radiological emergencies	Demokritos (GR), Inst. of Nuclear Physics, Tirana, (AAS)	2001 2002
4	Capacity determination of the introduction of Kiwi plants in the Central Region of Albania	University of Ioanina-GR Inst. of Biological Researches, Tirana, (AAS)	2001 2002
5	On-line and Off-line measurements radioactivity and other environmental parameters in seas and rivers, using laboratory facilities, floating buoys and satellite communication for the transmitting the data on line	Demokritos-GR Inst. of Nuclear Physics, Tirana, (AAS)	2001 2002
6	Completion of the researches and preparation of the publication of the 1991-1996 Albanian Buthrotos	General Secretariat of Sc & Technology (GR) Inst. Of Archaeology, Tirana, (AAS)	2001 2002

1.5.2 R&D projects with Italy

Table 7: Bilateral Albanian – Italian Projects (2001-2003)

1	Environment quality contamination (water, vegetation, waste water) caused by the emigration on the Italian coastal zone.	CNR Progetto LARA C/o CNR – Ist. Inquinamento atmosferico	Ministry of Environment
2	Cleaning technological on the framework of "Kyoto Protocol"	Ministero dell'Ambiente SIAR Tel: +39 06 57225317 Fax: +39 06 57225370 Siar@pelagus.it	Ministry of Environment
3	Technological transferring for the development of the fruit trees for the local development	Ist. Sperim. per la Frutticoltura Trento	Fruit Trees Research Institute
4	Evaluation of the agricultural and environmental resources.	Dip.to Coltivazioni Arboree Facoltà Agraria Università Bologna.	Ministry of Agriculture, Food and Consummator Protection University of Agriculture
5	Genetic revitalization of the vegetable species.	Ist. Sperim. per l'Orticoltura Pontecagnano Salerno	Vegetable & Potato Research Institute
6	Biodiversity and protection of the genetic vegetables in Albania	CNR/Bari	Ministry of Agriculture, Food and Consummator Protection University of Agriculture
7	Analyses studies and formation for the relationship under the italian and SMEs.	Dip. Disc. Economico-Aziendali Univ. Studi Bologna P.zza della Vittoria 15 BO	Ministry of Economy, Energy and Comerce

		Tel: +39 0543 402828 Fax: +39 0543 450260 Mbianchi@sun1.spfo.unibo.it	
8	Stelematic virtual forum for the relation of researche and industry on the framework of the Central European iniciatives.	ICS-UNIDO Area Science Park Padriciano TR Tel: +39 040 9220065 Fax: +39 040 9220068	Ministry of Education and Sciences
9	Riconstruction of the Mother teresa Hospital Center.	CNR – Ist. Fisiologia Clinica Pisa	Centre of University Hospital
10	Collaborative network of University studies, Milano – University of Tirana on the field of medicine and cardiology.	Dip. Neurochir. Policlinico Univ. Studi Milano Via Sforza 35 Milano Tel: +39 02 55035502 Fax: +39 02 59902239 Egidim@polic.cilea.it	Centre of University Hospital
1	CATCH II: Health of the citizens, telematic information infrastructure on the framework of the European standards.	Area Science Park COR – Lab. di Telematica per la salute	Ministry of Health
12	Tumoral prediction in "cervice uterina".	Ist. Regina Elena Viale del Policlinico Roma	Ministry of Health Institute of Public Health
13	Fizibility studies using sanity information system and administration of sanity needs in Albania.	Ist. Superiore della Sanità Via Regina Elena 299 Roma Tel. +39 06 49903430 Fax: +39 06 49387073	Ministry of Education and Sciences
14	Prepadness of risks of skin and oral respiratory tumor	Ist. per la ricerca sul Cancro di Genova Tel: +39 010 5600064 Fax: +39 010 5600095	Centre of University Hospital
15	Breast tumor	Ospedale Oncologico di Bari Tel: +39 080 5555270 Fax: +39 080 5555386	Centre of University Hospital
16	Butrinti and Gjirakostra: Demonstrative program: restauration of "Porta e Luaneve".	DAPT Fac. Ingegneria Univ. Bologna Via Risorgimento 2 Bologna Tel: +39 051 6569116 Fax: +39 051 6569052	Institute of Cultural Monuments
17	Archaeological excavation in ancient city of Phinike, South Albania	Dip. Archeologia Univ. Bologna Piazza S. Giovanni in Monte 2 BO; Tel: + 39 051 2097707 Fax: + 39 051 2097701 Sdemaria@kaiser.alma.unibo.it	Institute of Archaeology Institute of Culture Monuments
18	Archaeolkogical laboratory set upand Archaeological School in Shkodra city.	Univ. di Firenze Tel: +39 055 2757413 Fax: +39 05502757236	University of Shkodra Historical Museum of Shkodra; Historical Museum of Lezha; Archaeological
19	Signal- protection system in the "Rozafa" Castel-Shkodra city.	Univ. di Firenze Tel: +39 055 2757413 Fax: +39 05502757236 Comune di Firenze	University of Shkodra
20	Geomagnetic repet station in Albanai	Ist. Naz. Geofisica Via di Vigna Murata 605 Roma Tel: +39 06 51860313 Fax: +39 06 5041181 Chiappini@ingrm.it	Albanian Geological Survey, University Polytechnic of Tirana

21	Stratigrafical techtonical, Petrological and Paleomagnetical Studies	CNR–CS,Geologia dell'Appennino	Albanian Geological Survey, University Polytechnic of Tirana
22	Gentic and geostatic modeling of the georesorces of the Albanides ophiolites.	Univ. La Sapienza (Roma) Dip.to di Scienze della Terra Tel: +39 06 44585627	Albanian Geological Survey, University Polytechnic of Tirana
23	Construction new technology on the framework of the euro standards.	CNR-ICITE. Dip.to Architettura dell'Università di Bologna Adolfo dell'Acqua	Institute of Construction Technological Studies
24	Establish of research center for the applicative researches on the Albanian enterprises.	Tecnopolis CSATA Novus Ortus Laboratorio Territorio Ambiente Tel: +39 080 4670333 Fax: +39 080 4670372/253	Polytechnic University of Tirana
25	Modern Technological Center for the Rural development integrated and supported in	Univ. di Perugia Facoltà di Agraria Ist. di Estimologia e Contabilità	Chamber of the Commerce, Tirana

1.5.3 International R&D Projects

Table 8: International project of ASA institutes - UN organization

Project title		Financing organization	Other partners	Duration
1	Conservation of wetlands and coastal ecosystems in the Mediterranean region.	UNDP (GEF)	Greece	2000-2001
2	Greenhouse gases inventory for Albania	UNDP (GEF)		1999-2001
3	Study of Prespa Lake using nuclear and related techniques	IAEA	FYROM Greece	2001-2002
4	Prevention and improved treatment of skin cancer.	IAEA		2001-2003
5	Public exposure control including impact of naturally occurring radio-nuclides	IAEA		2001-2003
6	Sustainable energy options for eastern Europe.	IAEA	Regional	2001-2003
7	Enhancement of Nuclear Safety regulatory Authority Effectiveness	IAEA	Regional	2001-2002
8	Harmonization and strengthening of regional preparedness and response for nuclear and radiological emergencies and their medical aspects	IAEA	Regional	2001-2002
9	Human resources development and nuclear technology support	IAEA	Regional	2001-2002
10	Strengthening effectiveness of regulatory framework for radiation protection.	IAEA	Regional	2001-2002
11	Field-testing and demonstration of a system using a pulsed neutron generator for humanitarian de-mining.	IAEA	Regional	2001-2002
12	Education and training in nuclear sciences and technology	IAEA	Regional	2001-2002
13	QA/QC in radiation oncology	IAEA	Regional	2001-2002
14	Thematic program and health care for European region in nuclear medicine.	IAEA	Regional	2001-2002
15	Expert assessment and land subsidence related to	NATO SfP	Regional	1996-2001

	hydro-geological and engineering geological condition in the region of Sofia-Scopie and Tirana			
16	Quantification of Present-Days Tectonics of Albania	NATO SfP	Regional	2002-2007

Table 9: Projects within the Tempus Program

Project title		Field of Science
1	Earth Science applied to natural resources management in Albania	Geology
2	Engineering curricula development in computer integrated manufacturing technologies and robotics	Computer Aided Engineering
3	Tele-communication and computer science application at PUT	IT, Computer Science and Software Engineering
4	Environmental engineering	Environmental Science
5	Restructuring Albanian Education	Architecture Town Planning Department
6	Establishment of the transport Department at PUT	Civil Engineering
7	Engineering Curricula Development and Improvement in the Energy Field.	Mechanical and Civil Engineering
8	Development of University Management.	University Administration
9	Development of Curricula in Civil Engineering	Civil Engineering
10	Strengthening of Academic-Industrial Links in Engineering Materials and Manufacturing	Material Science
11	Follow-up Project to Upgrade the Facilities and Retraining the Staff	Mechanical Engineering
12	Accreditation of Laboratories according to EU standards	Mechanical Engineering
13	Quality in post-graduation courses in Albania.	Mechanical Engineering
14	Library Management	Mechanical Engineering

Table 10: Recent Regional Projects of ASA with ANEA

Project	Title	Approval
ALB6011	Improvement of Radiotherapy Service at the Oncology Hospital, 'Mother Teresa' University Hospital Centre, Tirana	2005
ALB9006	Upgrading Radiation Protection of Patients in Diagnostic Radiological Examinations	2005
ALB2011	Upgrading Laboratory Capabilities for Environmental Monitoring	2005

Table 11: Recent Regional Projects of ASA with ANEA

Project	**Title**	Approval
RER1006	Nuclear Techniques for the Protection of Cultural Heritage Artefacts in the Mediterranean Region	2005
RER5012	Regional Control of Brucellosis in Sheep and Goats	2003
RER7003	Marine Environmental Assessment of the Mediterranean Sea	2005
RER8009	Air Pollution Monitoring in the Mediterranean Region	2005
RER9080	Strengthening National Capabilities in Radiation, Waste and Transport Safety in the Mediterranean Region	2005