

3. Institutional Development Plan for the period 2012-2015

3.1. The scientific SWOT analysis for ICAS

Strengths

General

- Long tradition in the forestry research-development activity, planning and experimental development;
- The only R&D unit with expertise in the forestry domain able to meet the major challenges of the Romanian forestry;
The main owner/manager of data and scientific and technical information on forestry;
- It holds the most complex scientific and cartographic databases on the forests in Romania;
- Scientific expertise and technical capacity in the area of the continuous professional training of the technical staff in the forestry domain;
- Co-financing capacity through experimental districts;
- Possibility of self-financing of an applicative research program and experimentation, validation and implementation of research results in its own production units;
- Collaboration contracts with the economic environment from the forestry domain;
- Numerous and relatively strongly developed international relations, participations in international programs, bilateral agreements, member of different organizations;
- Extended network of long-term permanent experimental plots integrated at European level;

Human resources

- Human potential for all major research directions in the forestry domain and to approach new research-development directions;
- ICAS presence through its researchers in different academic media and commissions: ASAS, MEC, IUFRO etc.;
- Capacity to tackle multidisciplinary researches;
- Technological potential of approaching new research directions;

Infrastructure

- Existence of laboratories accredited at international level
- Modern and cutting edge research infrastructure;
- Integration of the research, planning, development and experimentation activities within research stations representatively distributed on the territory and human potential spatially distributed;
- Own experimental patrimony: structurally and functionally diverse experimental units;
- Main designer and manager of the scientific and technical information in the forestry area;

Visibility and dissemination

- Exploitation and implementation of the results of research projects within the production activity, the integration of results in technical standards and legislative acts;
- Capacity to organize national and international large-scale scientific events
- Capacity to disseminate results through the development of a specialized publishing house and also of a journal with notable performances
- Capacity to contribute to the elaboration of policies and strategies for a sustainable management of forest ecosystems in the context of climate changes.

Weaknesses

General

- Insufficient cooperation and collaboration among different R&D departments;
- Limited access to external information resources (databases, journals, etc.) and insufficient exploitation / use of available scientific information;
- Reduced exploitation of the possibilities of interdisciplinary collaboration with domains other than forestry;
- Reduced experience as to elaborating and accessing international projects;
- Small number of PhD or master's degree students and students involved in research activities;
- Relatively small number of traineeships carried out abroad by young researchers;
- Absence of agreements on bilateral exchange of young researchers with similar foreign institutions;

Human resources

- Absence/non-implementation of an annual or regular assessment of research staff based on clear criteria related to the scientific and technical performance and performance-correlated remuneration;
- Absence/non-implementation of an incentive and loyalty system dedicated to researchers based on criteria and remuneration policies established in relation with the scientific and technical performances obtained;
- Reduced human resource flexibility as would be a fixed-term employment of doctoral students in relation with the financing;
- Reduced number of researches eligible for participating in competitions;
- Researchers' insufficient awareness of the new performance requirements;
- Reduced number of researches on particular research directions with implication on the re-orientation of R&D staff;
- Absence of a human resources continuous training program to increase scientific performance;.

Infrastructure

- Insufficient use of research infrastructure;
- Insufficient development of an extended database on the research activity and the results obtained;
- a important part of scientific and technical information held by ICAS isn't available in electronic format;

Visibility and dissemination

- Insufficient development of the ICAS website;
- Reduced exploitation of results through publication in international journal with high impact and reduced technological transfer;
- Lack of involvement in organizing training for forestry practice to apply the scientific results;

Opportunities

- Possibility to attract funds through the importance of the forestry sector in the national economy;
- existence of a traditional and stable institutional relationship with the main stakeholders of forestry domain (central public authorities for forests, state forest administration, branch academy, forestry faculties, and other R&D institutions from life science domain)
- Existence of diverse financing sources: national programs, international programs, RNP, Sectorial and regional Operational Programs;
- Organizational development of the private forest property – fund source for issues related to forest expertise, applicative research, counseling;
- Membership in different international organizations: IUFRO, LTER, EFI, ICP-Forests, EARSeL, EUROFORGEN, ENFIN, LCIE, FTP, LTER etc.
- Possibility of attracting PhD students through partnership agreements concluded with national and international universities for research traineeships intermediated by doctoral mentors;
- Access to external information of young graduates
- Existence of a reduced competitive environment in the forestry research area
- Existence of an outstanding natural research capital at European level (virgin forests, carnivorous forests, etc.)

Threats

- Absence of a branch financing mechanism at forest authorities level: ministry and RNP;
- Absence of financing per strictly defined areas and entering competition with other domains – classification of forest research within the domain LS9 – biotechnologies
- Limitation of financing research activities at national level;
- Losing young top researchers due to the unattractiveness of research careers in the forestry domain having regard to the current remuneration system;
- Reduced receptivity for technological transfer at the level of the economic agents from the forest economy;
- Reduced interest of private forest owners in the implementation of the results of the research-development activity;
- Reduction of the professional training quality of young graduates in the forest field;
- Continuous increase of competitiveness in the forest research domain and an increase of the competitiveness in attracting young people with performing results;
- Increase of exigency in the evaluation of research projects in competition system;
- Rapid moral deterioration of R&D equipment and calculation technique;
- low correlation between funding period of programs/projects and long experimentation time specific to forestry research.

3.2 Priority and strategic objectives and directions

3.2.1. Priority and strategic objectives

The Forest Research and Management Institute (ICAS), as an institution of national interest has the role to develop science and technology in the forestry domain in order to contribute to the increase of the Romanian economy competitiveness, to improve life quality

and enhance knowledge presenting a potential of exploitation and expansion of the action horizon aiming at a sustainable management of forests.

The fundamental objective of the institute's activities is the *"Increase of the capacity, quality and complexity of scientific research and technological development in the forestry domain for a sustainable management of forests in the context of the socio-economic and environmental changes at national, European and international level"*.

Starting from the fundamental objective of the institute's activities, the increase of research-development and experimentation capacity, quality and competitiveness constitutes a necessary base for the multiple benefits that sustainable forestry brings to the society. Thus, the forest sector benefits from a high potential of further developing high quality products and services in order to meet the diverse demand and develop a society based on a renewable raw material source. Technological research and development are necessary for developing a strong and dynamic sector able to meet the challenges raised by global changes.

In order to accomplish its role and attain its fundamental objectives, the Forest Research and Management Institute establishes, through the activities carried out, the following *priority strategic objectives*:

A. Creating knowledge respectively, obtaining top scientific and technological results, competitive at European level, aiming at increasing the contribution of the Romanian research-development system in the forestry domain to the European knowledge stock, the international visibility and the transfer of results to the socio-economic system in general, and to forest practice, in particular.

The achievement of this objective supposes the integration and the persistence of ICAS within the international networks and the promotion of excellence in research-development.

B. Increasing the competitiveness of the Romanian forestry through research-development with impact at the level of forest administration and economic agents from the forestry sector and the transfer of knowledge to the forest practice. This objective aims at obtaining valuable scientific and technological results of the type "complex problem solving", of local, regional and national interest or specified by economic agents, products and services with direct applicability.

C. Increasing social quality shall be carried out through the orientation of the research-development activities of ICAS towards the domains designated as priorities through the EU framework-program for scientific research and technological development. The participation and direct involvement shall be substantiated through the development of solutions that generate direct social benefits at local, regional, national and European levels. These solutions are specific to issues related to rural development and environment protection (terrestrial planning, exploitation of local and regional forest resources, agro-tourism, production of agro forest cultures, shelterbelts), as well as to issues related to social cohesion and dynamics.

For the achievement of the three strategic objectives, the following *specific objectives for research-development in the forestry domain* shall be considered:

1. Increasing performance by:

- obtaining excellence scientific results, reflected in the higher number of articles published in publications pertaining to the international information flow with a high relative influence score;
- the integration and collaboration within some regional centers coordinating certain international organizations in the forestry, ecology and environment protection domains (FAO, UNEP, EFI, FPT, ICP – FORESTS, ILTER, LTER – EUROPE, ENFIN, IPGRI, ISTA, EARSEL etc.)

- enhancing the participation in consortia for the elaboration of multinational projects benefiting from international financing.

2. Resource development by:

- increasing the share of experts in certain fields / competence domains, according to the problematics approached within the research teams of the institute and to the directions of research and forest practice at national and international level;
- optimizing of the number of experts in relation with the financing scheme and the research trends maintaining at the same time the average age under 45 years;
- increasing the share of PhD and PhD students to over 50% of the total number of researchers;
- increasing the attractiveness of the research-development activity by fostering professional performances;
- sustaining the creation of performing laboratories with multiple inter-institutional uses and the access of experts to performing national and international research infrastructures.

3. Increasing the institutional capacity by:

- intensifying research-development activities through the stimulation of collaboration and participation to national and international networks that guarantee the attainment of valuable results;
- professionalizing the management of research-development activities in the forestry area through the elaboration of research-development strategies in priority domains for the reconsideration of certain insufficient approached domains (forest management planning, torrent correction, forest stations, etc.).
- planning the activity of research-development through the integration of needs and future possibilities into present-time realities through an in-depth diagnosis analysis of previous achievements;
- developing and updating the existent R&D infrastructure through national and international programs as well as through project co-financing.

4. Efficient use of the experimental patrimony by:

- experimenting, validating and capitalizing (implementing) on the results of forest scientific research in terms of spatial representativeness and specific domains considered priorities for the Romanian forestry, long-term experimental surfaces constituting the scientific-applicative basis underpinning the adoption and application of forest technique.
- Updating and extending long-term experimental surfaces at national level and their integration into information databases;
- enhancing the cooperation between research personnel and the one within the structures of the forest administration for the execution of technical works specific to the problematics approached within the long-term experimental surfaces;
- creating a special network made of long-term experimental surfaces dedicated to the organization of good practice exchanges, with a technical-applicative thematics concerning issues related to treatments, maintenance works, forest protection, forestation of degraded lands, etc., with experts in production, research and education.

5. Broadening international cooperation by:

- participating to European and international research programs and projects;
- increasing ICAS's level of representativeness through promoting/sending its experts in representative research-development institutions and organisms at European and international level;
- increasing international visibility through publicity and promotion activities related to infrastructure, competitiveness, scientific potential and human resources.

3.2.2. Priority and strategic scientific directions

No matter how serious the economic difficulties faced by Romania are, Romanian forestry science in general and the Forest Research and Management Institute (ICAS) in particular, the research-development activities in the forestry domain carried out by ICAS are considered national priorities, fundamental components of the „National Strategy in the research-development and innovation domain for the period 2007 – 2013”, of the „Short and medium-term Strategy for Silviculture Development (2009 – 2013), of the „Strategy for the Development of National Forest Administration – ROMSILVA on the short and medium-term (2009 - 2013)” as well as of the EU Forest Action Plan (2007 – 2013)”. Thus, the collaboration with the European research-development structures and the international cooperation in the forest domain supposes the elaboration of a much more efficient and performant program of ICAS activities through the enhancement of the participation to international and regional organisms in the field (FAO, UNEP, EFI, FPT, ICP – FORESTS, ILTER, LTER – EUROPE, ENFIN, IPGRI, ISTA, EARSEL etc.) and the promotion of partnerships and the participation in the research-development programs launched at national, European and international level.

In this context, scientific researches shall be oriented towards the assessment and analysis of effects of climate changes and of the quality of the environmental and socio-economic factors on forest ecosystems.

In the conditions of a sustainable management of forest ecosystems there is a need for ensuring the stability and increase of forest functional effectiveness for the generation of resources and services. Knowledge of forest resources, production and productivity of stands and of the forest as a whole constitutes one of the fundamental priorities of a sustainable silviculture with direct impact on the socio-economic systems and the natural capital. Thus, complex inter- and multidisciplinary researches related to the knowledge of biodiversity and on the rules governing forest structure and functionality must be developed in order to develop the scientific base for the preservation and improvement of biodiversity, for the knowledge of forest stability and poly-functionality respectively for their sustainable and performant management in the context of the socio-economic and environmental changes.

The future development of forest management planning activities must further ensure the appropriate framework for the promotion of the sustainable management of forests while approaching the concerns related to the preservation and improvement of biodiversity and to the rational and continuous exploitation of the multiple ecological and socio-economic functions of forest ecosystems.

The management control through forest management planning towards the optimal state shall be correlated to that of the continuous monitoring of the state and the functional effectiveness of forests under the influence of different disturbing factors, including climate changes. At the same time, the information system related to the forest fund must be implemented and maintained and the simulation methods must be used when elaborating medium and long-term forest prognoses.

In order to prevent global calamities, a special attention shall be paid to special researches related to the planning bases and concerning the stability of certain compositions resistant to pollution, drought, knocking down and ruptures caused by winds and snow, the correlation of technical operability with the efficient fructification period of stands and forest in order to ensure biodiversity and stability. A special attention shall be paid to research development aiming at the preservation of the natural genetic diversity of forests and at adequately increasing the integrity, health and flexibility of forest ecosystems at regional, national and European levels. Maintaining the production capacity, the flexibility and biologic diversity represents a key factor in ensuring a healthy forest ecosystem, essential for a healthy society and economy. The risk of forest biodiversity reduction and the need for its preservation does not constitute a conceptual normality for the objectives of the Romanian scientific research. That's why the national forest patrimony provides a broad investigation field, especially the natural and semi-natural structures which, unconditionally, must be included into the national and international scientific circuit for the knowledge of its structuring and functioning rules, in view of the management of the cultivated forest.

Restoration, preservation and development of wildlife and salmonids resources to obtain ecosystems ecologically and economical functional in terms of sustainable use of renewable resources of the area, are priorities in removing hazards that led to the disappearance of fauna species in Romania and promoting ecosystem restoration an appropriate genetic variability. Establishing optimal game population, to achieve a natural growth as more and a long-term quality of game hunting, is also a priority.

Wood use as energy source may contribute to the mitigation of climate change, by the replacement of fossil fuel improving the national production of energy, creating supply security and ensuring employment opportunities in rural areas. Research and technological development related to the promotion of agroforestry systems, special cultures for biomass/energy, shall considerably contribute to the inclusion of some future actions concerning the use of non-wood products in the economy and of the small-sized wood in energy production.

The main **priority and strategic scientific directions as well as the scientific objectives** set for their achievement are:

i) Ensuring the stability, management and increase of the functional effectiveness of forest ecosystems in the conditions of environmental changes.

Scientific objectives:

- continuation and development of long-term inter and transdisciplinary research on the state of forest ecosystems under the action of climate changes and risk factors;
- development of knowledge of biotic and abiotic disturbance factors and their action on forest ecosystems and the establishment of integrated measures for fighting against them;
- realize direct measurements on under sampled zones with large contribution to country's emissions, and improve knowledge about greenhouse gas balance under LULUCF;
- foundation, on the basis of the new biometric and yield models, of a new information system for forest management planning;
- elaboration of new regulation methods of the production process in the planning activity, improvement of models and methods of national forest inventory;

- development of new methodologies and the implementation of geomatic technologies in the forest research and practice;
- ii) Preservation and improvement of the genetic diversity of forests in order to increase the productive, protective and adaptative potential.**
- Scientific objectives:*
- elaboration of strategies on the “in situ” conservation and on the sustainable management of forest genetic resources;
 - evaluation of the genetic diversity of the forest species and the selection of the valuable genotypes in order to increase the productive potential of forests;
 - identification and description of new genetic resources in order to increase the adaptative capacity to climate changes of forest ecosystems;
 - development of new advanced methods and technologies for the „ex situ” preservation of valuable genetic resources.
- iii) Scientific foundation of the silvotechnical, ecological reconstruction works and torrential watershed planning**
- Scientific objectives:*
- optimization of the management stands works and silvicultural treatments;
 - improving the installation, attendance and management technologies intended for cultures and shelterbelts;
 - methods for the ecological reconstruction of stands affected by harmful factors;
 - elaboration of new solutions for the management planning of torrential river basins and the forestation of degraded lands.
- iv) Research and evaluation of the biologic diversity of forests and their related ecosystems**
- Scientific objectives:*
- foundation of conservation measures of natural habitats and flora species from forest ecosystems;
 - identification and mapping of the types of forest ecosystems valuable from the viewpoint of biodiversity;
 - foundation of the management plans for protected natural areas;
 - research development in the domain of soil systematic and forest stations;
- v) Preservation of biodiversity and the increase of productivity within cynegetic and salmonicol funds**
- Scientific objectives:*
- management of the conflicts between human activities and wild fauna;
 - development of an ecological network for the reduction of genetic isolation and the preservation of populations of cynegetic interest;
 - increasing the cynegetic and salmonicol potential within forest ecosystems.

3.3. The Human Resources Strategy

The strategic policy in the field of human resources is “adapting the functional and organizational ICAS structure in relation to the research and development offer at national and international levels and to the regional issues of Romanian forestry.”

Raising the level of professional performance in human resources supposes obtaining some competitive scientific results on both national and international plans, reflected by the increasing number of articles published in prestigious national and international publications. ICAS must be competitive in terms of the current position it occupies in the *National System of Research and Development*. The competitive research can be obtained only with a modern

logistic base, which will be improved through specific national and international projects funds, according to the problematics approached and the level of performance of the specialists involved in the execution of the projects concerned.

Through the participation to multinational consortia, at national and international levels, the professional expertise of human resources from the research-development sector shall broaden and a well-trained and performing human potential will be created.

Thus, an optimal structure is necessary in terms of organizing and functioning of the institute, both at central and territorial level, achievable by grouping the traditional research fields according to the inter and multidisciplinary principle, by grouping the territorial subunits according to regional research-development issues but also around the bases and experimental forest divisions in order to exploit efficiently the experimental forest patrimony. At the same time, one should take into account the achievement of an optimal balance between the research-development staff and the auxiliary one both at central level and at the level of the territorial subunits, inasmuch as, at present, the logistics and the means for a good, efficient and performing management are available. At the same time, the compatibility between the specializations and competence areas of the researchers and personnel from OSE and BE and the research-development and experimentation thematic approached shall be observed.

The main *strategic objectives* in the field of human resources for the period 2012-2015 shall be:

- to permanently ensure the optimal organizational and functional structure at central level and at the level of the territorial subunits, in relation to the strategic research-development objectives and directions, correlated with the financial resources attracted through contracts;
- the continuous development and professional training of research-development human resources (trainings, summer schools, visiting researchers, researchers exchanges etc.);
- to stimulate scientific performance according to competence criteria in order to increase the attractiveness of research and development activities;
- to attract young researchers, graduates or postgraduates of excellent national or foreign doctoral schools for carrying out advanced research;
- to establish partnerships with national or foreign universities and research centers of excellence in order to promote bilateral traineeships.

3.4 Mechanisms to stimulate the development of new research topics and themes

The development of new research topics and themes will be stimulated through:

- debates on the current issues in the forestry sector in order to identify the problematic aspects requiring new approaches;
- the allocation of funds for the initiation of pilot projects on new research topics;
- the organization of national or international annual scientific conferences and sessions;
- the organization of scientific debates on the outcomes of researches aiming at their correlation and integration and the identification of new research topics and themes ensuring the filling of some data gaps (exploratory workshops);
- exchanges of national and international interdisciplinary experience;
- membership in national and international research networks, both inter and trans disciplinary (technological platforms), in the field of environmental sciences.

3.5 SWOT Financial Analysis

Strengths:

- the existence of an integrated activity, capable of ensuring a continuous financial flow;
- ICAS coordinated financially well balanced projects;
- the ability to access funds from different sources at national and international levels;
- it benefits from competence which allows the attraction of extra-research funds (expertise, impact studies, consultancy, technical assistances etc.);
- the capacity to co-finance and self-finance can ensure financial resources from the exploitation of its own products and services.

Weaknesses:

- inefficiency of expenses;
- lack of a capitalization fund (working capital);
- financial management insufficient focused on research projects;
- increased financial-accounting bureaucracy;
- lack of an appropriate marketing strategy in the field of research and development;
- lack of financial mechanisms to stimulate performance, especially for young researchers.

Opportunities:

- possibility of attracting important funds through national and international programs;
- accessing structural funds in the field of research;
- diversity of financial sources for forest research (contracts with private sector etc.);
- access to core or complementary institutional financing;
- possibilities of obtaining financial resources from the exploitation of the results through patents and technological transfer.

Threats:

- tendencies of under-financing the research and development sector;
- the reduction of the financing laid down in the initially concluded contracts;
- reduced opportunities to correlate the remuneration policy and the funding sources;
- lack of a continuous funding strategy through national research programs;
- extending the financial crisis at a national, European and global level;
- instability of national tax policies.

3.6 Infrastructure: The Investment Plan

The development of the research infrastructure is directly related to the current stage of research equipment and the existing financing sources. At present, ICAS has a modern and state-of-the-art research infrastructure for most of the research directions covered (forest genetics, forest protection, dendrometrics, forest management planning and monitoring,

ecology, silvotechnics, torrential watershed planning and geomatics). The main objective of the program for the development of research infrastructure for the next 4 years is to increase the degree of actual R&D infrastructure use and to ensure the material support and equipments to open new research directions. Thus, the following investments in research equipment are considered:

- extending the network of surfaces for long-term ecological monitoring through the acquisition of continuous monitoring systems of the radial growth, forest hydrology, forest climatology, air quality, atmospheric depositions, soil solutions, etc. (300.000 euro);
- developing the research infrastructure in the domain of forest genetics (100.000 euro);
- creating and developing a chromatography laboratory specialized in the analysis of greenhouse gases (60.000 euro);
- evaluation of climate changes impact on forest biodiversity (70.000 euro);
- monitoring of large carnivores (200.000 euro);
- equipments for the development of research in the field of animal genetics (60.000 euro);
- development of geomatics application in forestry (70.000 euro);
- improvement of forest resources evaluation system and elaboration of forest management plans (400.000 euro).

Also, at institute level, there is a constant concern for ensuring the updating of the information systems used for the management and processing of the scientific information, and for intercalibration and accreditation of laboratories.

Financing the investment plan in research equipment is partly or totally provided from the ongoing research projects and projects under different evaluation stages, with national and international funding.

From its own funds, ICAS covers the investment plan in terms of co-financing research projects, the development of the administrative and functional infrastructure: administrative offices, transport vehicles, experimental stations.

3.7 Supporting the technological transfer and attracting extra-budgetary funds

3.7.1 Supporting the technological transfer

Over the years, ICAS as the main institution called to solve the main problems faced by the forestry sector in Romania, was involved in almost all areas specific to this sector, through the development of technical rules/instructions/guidance, experimental models, studies and technical documentation, complex investment and forest management planning projects which still nowadays underpin the sustainable forest management or the rehabilitation of degraded ecosystems.

In general, all the research projects implemented by ICAS had as final objective the elaboration of instructions and recommendations on their application into the forest practice, besides the dissemination of the results. Until recently, the main beneficiaries were the Central Public Authority for Forests and National Forest Administration as the main manager of the national forest domain. The share of consultancy and of specialized assistance given to private forest owners is increasing, with new opportunities for the development of technological transfer to newly created entities.

The support of the technological transfer shall be concretized in the future by involving co-financing partners into the research-development projects of applicative interest at local or national level through:

- the elaboration of technical rules, instructions, guidance, and best practice guides upon completion of the applicative research;
- the development of experimental-demonstrative plots and the technological transfer of research results;
- modern projects focused on forest management planning within the GIS system;
- carrying out complex studies and technical documentation;
- providing technical assistance and expert advice.

3.7.2 Attracting extra-budgetary funds

The main way of attracting extra-budgetary funds is constituted by the public-private partnership in the Romanian forestry research field; ICAS, as public institution, is called to find complex and viable solutions to the problems faced by the forestry sector.

In the field of forest services, based on the research-development activities carried out by ICAS, significant extra-budgetary funds may be attracted through the elaboration of:

- projects focused on forest management planning and ecologic rehabilitation;
- environmental reports (environmental impact and appropriate assessment studies, environmental balance etc.);
- specialized documentation: temporary and permanent removals from the forest domain, pedo-station studies, chemical analyses of soil, water, seeds, genetic analyses, forecast of harmful insects.

3.8 Strategic partnerships and visibility: events, communications, collaboration

Among the current financing conditions associated to research-development programs and projects at national and international levels, based on complex multi and interdisciplinary research, a fundamental condition related to the eligibility within the competitive evaluation process of projects is represented by the development of inter-institutional partnerships with expertise in the problematics proposed to be approached. Thus, the cooperation of ICAS with institutes and universities in the field in national and multinational consortia will have to be enhanced in the following period, in order to create certain centers and networks of human potential, involved in research-development, performing and sustainable, including both experienced specialists and young researchers with great possibilities of affirmation and on the way of a high-level scientific career. At the same time, an essential condition for accessing research-development funds is represented by the existence of economic agents included in partnership networks that benefit from the application of the scientific results, both at experimental and implementation levels. Benefiting from its own experimental patrimony (OSE and BE) and from an excellent cooperation with the National Forest Administration – ROMSILVA (RNP –ROMSILVA) ICAS has both at present and in the future, a very important role as far as partnership cooperation is concerned.

Through the creation and continuous development of this cooperation both with research-development institutions and universities and with the beneficiaries of research results (ICAS, RNP-ROMSILVA, MMP economic agents, private forest owners, etc.) but also at the level of the research-development human potential within the structure of these partners, there are real possibilities of enhancing the process of attracting internal and external sources for research-development activities, through the achievement of the following **strategic objectives**:

- developing partnerships with universities and research institutes, both in the research-development domain and in the field of the continuous training of human resources;

- integrating ICAS in national competence centers and increasing its role in the **Forest Technology Platform** (FTP) at European level, by participating in multinational consortia co-financed by the European organisms, and international organizations/programs;
- participation of ICAS in complex and integrated research infrastructures (LifeWatch);
- establishing strategic partnerships with the administrators and custodians of the system of protected areas in Romania in order to capitalize on ICAS expertise on the study and management of forest ecosystems.

In order to increase the degree of national and international visibility of ICAS and to promote its expertise on forest research, the following actions shall be carried out:

- the annual organization of the scientific session of ICAS and its transformation into a reference scientific event for the Romanian forestry research;
- the continuation of the editorial activity in the Forestry Publishing House and the accomplishment of the eligibility conditions for the indexing in the Web of Science database of the Annals of Forest Science magazine;
- involvement of ICAS in the organization of the work meetings in the framework of the programs COST, LIFE + and FP7, where ICAS is a partner;
- the development of the promotion media of ICAS research results through public information systems;
- WEB portal development to promote and disseminate the ICAS research results.