

FINAL REPORT

I	The Name of the Institution to be evaluated	<i>Forest Research and Management Institute (ICAS)</i>
II	Evaluation Period	23 – 26 April 2012
III	Members of the Team	
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CONCLUSIONS AND RECOMMENDATIONS

The team has evaluated ICAS on the basis of the self-evaluation documents, presentations by the scientific director and the team leaders, discussion with the scientific council and administrative personnel, and visits to laboratories, stations and facilities. Two days were spent in Bucharest and two days in Brasov.

The main strengths of ICAS result to be:

- Consolidated expertise in the forestry research-development sector and reference institution of Romanian forestry
- Internationally recognized as research partners in the field of environmental monitoring
- Robust and long-term databases, permanent experimental plots and germoplasm collection available
- Outstanding infrastructure

The main weakness is:

- Medium-low quality of scientific production, namely not available in peer-reviewed high-impact journals, compared with the elevated capacity of attracting funds and the number of scientists

In detail:

- Only 30 AIS papers were published over the evaluated period, i.e. 6 per year, with a low average citation (3-4 per paper). Ten of them had a personnel member as a first author. Generally speaking, the number is very low. However, the concept of the AIS metric is unclear to the evaluators. 337 other papers were published, out of which 202 are articles published in journals indexed in international databases, i.e. 40 papers per year, 2.4 papers per certified scientific researcher in 5 years. The number of citations is unfortunately not shown for the so-called other papers. However, these papers are accessible to the international community and are a major output of ICAS. 17 of these papers are included in the ISI database, so that the number of ISI papers published in 2007-2011 is 46, i.e. 0.54 papers per researcher, which is still a very low figure. In addition, 62 works are published in conference proceedings and 71 are books and book chapters. In 230 of the – so called – other papers, the first author was from ICAS.
- Although attending international meetings is an opportunity to get contacts and visibility, publishing in conference proceedings is not rewarding in terms of paper quality and impact.
- An analysis of the paper titles shows that ICAS is very competent in traditional forest classic genetics, environmental monitoring, forest ecology and protection, dendrochronology, biodiversity, and is developing internationally-competitive expertise in the carbon budget of European forests.
- ICAS has been building a consolidated reputation at the international level both by participating in international projects and bilateral agreements, and by its membership in several organizations. In particular, ICAS has developed an extended network of permanent experimental plots integrated at an European level. At a national level, ICAS collaborates with forest local authorities, private forest owners and universities.
- ICAS obtained 3 patents and submitted requests for additional 4 patents, all of them were registered only in Romania. The subject of the patents ranges from food to therapeutic use, and to non-wood and wood technology. Most of the subjects may be competitive also in an international context and reflect a traditional expertise of Romania in non-wood forest products.

- There is a very high capacity of attracting funds, with a total of 244 projects (out of which only 14 projects -14%- were from international sources and 34 projects -2.3%- from private sources). Most of the projects are thus technical projects with practical applications, which are mainly ordered by the national forestry authorities. A lot of the effort is dedicated to commercial activities which supply 50% of the annual budget, but do not translate into science.
- ICAS is very active in communication, in particular with the national forestry authorities, to which ICAS provides fundamental technical assistance.
- Several dissemination tools have been used. Worth mentioning are: i) the Forestry Publishing House, which publishes scientific and technical books in the field of forestry and environmental sciences (52 works in the period 2007-2011); ii) the scientific journal *Annals of Forest Research*, which publishes in English only, on topics dealing with forestry and environmental sciences. It is also indexed in many major international databases, e.g. ISI Thompson, Scopus, CAB Abstracts. Very important, the journal was able to get an Impact Factor from ISI, which will be very beneficial for the whole forest science of Romania.
- A major weakness in dissemination is the low quality of the institutional website.
- The average age of R&D staff ranged from 38 years in 2007 to 40 years in 2011 and is thus below the recommended threshold of 45 years. Out of R&D staff, 43 hold a PhD, 16 graduated during 2007-2011, 19 are PhD students, 24 are university professors, and only 2 are PhD supervisors. Six young people were recruited.
- The total number of employees in 2011 was 809, out of which 469 R&D personnel and 340 technical staff. The R&D personnel includes 85 certified scientific researchers, 94 technological development engineers and 252 auxiliary staff. Only 38 people are administrative staff, so that the ratio R&D:administrative staff is 11:1, which is very low given the high amount of projects ICAS deals with. Although there was no major complain from R&D staff about the support they get from the administration and the efficiency of the administrative staff, the Research personnel prepares the financial reports for every project. It would be beneficial to streamline this procedure and allow the researchers to dedicate all their time to science.
- A high investment in research capacities was carried out. In 2007-2011 3.2 M€ were invested, half from external projects, and half from institutional funds. Many laboratories were recently modernized. The quality of research infrastructure is generally high, including facilities for biodiversity investigation (e.g. arboretums, seed collection, herbarium), for long-term environmental monitoring (e.g. permanent plots, remote sensing, data-bases) as well as a number of sophisticated instruments for soil, plant and atmosphere analyses. Since the last year, access to all electronic journal databases is provided. The rate of infrastructure exploitation is probably very high.
- The criteria for motivating people are not well defined. Mechanisms for effective promotion (e.g. certification of researchers) and encouragement would increase motivation and merit.
- The development plan directions are coherent and in line with the present expertise of ICAS. In many teams, the development directions are in agreement with the most updated trends of European research.
- The recruitment policy is only driven by the accessibility of projects (funds) and there is no serious attempt to attract excellent graduates of academic institutions.
- A critical mass of scientists in the critical areas for the institutional development is available in ICAS in general as well as in every team and station. Team E2, E6 and E1 are the most well performing in terms of publications and international visibility. E5 has the poorest scientific performance as it did not publish any ISI paper over the evaluated period. All teams, however, have specific fields of interest and are very collaborative with each other so that the teams' strategies have many common aspects.

JUSTIFICATION OF MARKS

C1: Quality of R&D activities and their results

Mark: 3.7

- Excellent production quantity, although much effort is devoted to technical assistance requested by national forestry authorities and self-financing. This results into an average medium-low quality of papers.
- The level of science is however good and competitive into an international context.
- The potential for competitive science is good but is not properly exploited.
- Excellent capacity of attracting funds.
- Good dissemination skills.
- Leading skills as demonstrated by the high percentage of first authors in the papers.
- Poor ICAS website.
- Too much effort dedicated to commercial activities.

C2: Human resources quality

Mark: 4.3

- Great human potential for all major research directions in the forestry domain.
- Good ability to recruit and support personnel, but better selection mechanisms may be applied.
- A large number of the personnel is dedicated to commercial activities.
- An assessment of the individual performance is missing.
- A critical mass of scientists is available in ICAS in general as well as in every team and station.

C3: Quality of infrastructure and its rate of exploitation

Mark: 4.4

- Vast patrimony in terms of land, buildings and research infrastructures.
- No digital data available on-line.

C4: Management efficiency and quality of the research environment

Mark: 4.2

- Management efficiency and quality of the research environment complies with the best European and International practices.
- Good collaboration among different personnel subgroups (R&D, administration, auxiliary)
- Insufficient motivational mechanisms.
- Too much administrative load for researchers.

C5: Quality and credibility of the institutional developmental plan

Mark: 4.5

- Quality and credibility of the institutional development plan are good.
- The main strength is the continuation of the long ICAS tradition in forest basic and applied science.
- The main weakness is still the low quality of the journals selected for publication.

