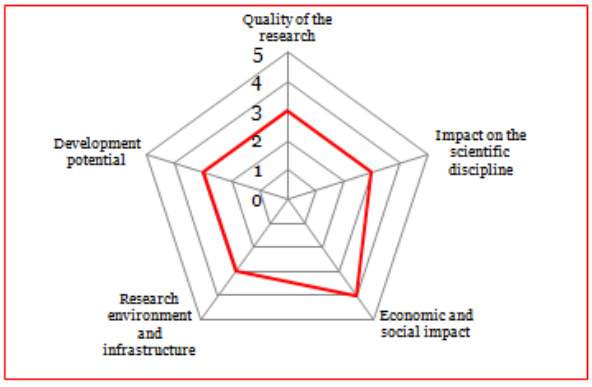
3. A_03_Latvian State Forest Research Institute "Silava"

Name of the institution	Latvian State Forest Research Institute "Silava"
Name of university	N/A
Type of institution	State Scientific Institute

"Silava" is a governmental research Institute founded in 1946, conducting research and national duties in forestry. It is a large research unit with over 50 academic researchers. The functions delegated by the state to Silava include: 1) centre of forest genetic resources; 2) forest statistical inventory; and 3) forest environmental monitoring. It also offers laboratory services for paying customers. In research and knowledge transfer "Silava" concentrates on four themes: forest cultivation, forest ecology and forest products, and game and fauna management. Thus, research in Silava concentrates on the beginning of the value chain in forestry (increase of forest capital value). Other research units in forestry: Forestry Faculty of Latvia University of Agriculture, Institute of Wood Chemistry, and Forest and Wood Products Research and Development Institute MEKA are specialised in teaching or end products of forest based sector. As research institute, Silava does not officially provide higher education. However, most PhD students in forestry are conducting doctoral work in Silava's projects and thus are supervised by Silava researchers. The age structure of Institute is young with many PhD students and recent doctors working in the Institute, and gender ratio is very balanced (41:59 female:male).

Figure 3 A_03 - Scores

Criteria	Scores
Quality of the research	3
Impact on the scientific discipline	3
Economic and social impact	4
Research environment and infrastructure	3
Development potential	3
OVERALL SCORE	**3**



Overall Score

"Silava" is conducting its research and national duties in an important field of the Latvian economy. It has a young age structure, has shown ability to publish in internationally recognised journals, and has good collaborative contacts in some fields. This makes the development potential of "Silava" high. If the exchange of ideas and researchers rises between "Silava" and international research institutes, "Silava" has the potential to become an important international player in the field of forest research.

Quality of Research

The research activities of "Silava" cover many disciplines such as: molecular genetics, afforestation, growth and yield studies, entomology, pathology, soil sciences, and natural regeneration of forests, tree breeding and forest genetics. The research strategy of institute stresses studies supporting forest growth (e.g., silviculture, tree breeding), forest health, and forest regeneration. The funding situation of the Institute is relatively good, and the budget has been increased considerably during the last ten years. From the total budget, about 11% is allocated to functions delegated to the Institute by the state, 13% being direct state funding for research, and about 75% being tenders' funding. The major customer is Latvian State Forests.

"Silava" has a rather good publication record, with an increasing number of SCOPUS-level articles per year. Some of the articles, especially in the field of forest pathology, are published in the best forestry journals, e.g. Canadian Journal of Forest Research, Tree Genetics and Genomes and Forestry. However, much is still published in national journals in the Latvian language which is regrettable when many of the research questions have international relevance. SCOPUS-level articles written by "Silava" researchers are also quite well cited, suggesting that their quality is good and that their themes are interesting.

Impact on the scientific discipline

The scientific impact of "Silava" is relatively good. The institution has a stable position in the scientific community, both nationally and internationally.

The staff of "Silava" produce internationally recognised articles. Furthermore, international collaboration in producing papers is common, and joint articles are published between "Silava" researchers and scientists from nearly 30 countries, including Baltic and Scandinavian countries, Germany, Netherlands, Spain, United Kingdom and France. The researchers are members of editorial boards of Latvian and Baltic journals in forestry.

Silava seems to be an internationally wanted partner and collaborator, especially in the field of forest pathology. Thus, it has lively international collaboration in several fields of research, e.g. forest pathology and molecular genetics. Visits abroad, and especially visits to the unit, are frequent, suggesting that the Institute has unique scientific know-how that is internationally valuable. The Institute has participated in several international projects, e.g. the Forest Soil C Sink Nordic network, the PelBalNet pellet net Baltic Sea, and has been a partner in several EU projects (e.g. one FP4 project, four FP6 projects/networks, and one FP7 project,) and it participates in the SNS network (PATHCAR) and Life+ programmes (FUTMON).

Economic and social impact

"Silava" has several important functions delegated to it by the Latvian State, including forest inventory, elaboration of report of carbon dioxide removals and emissions from the land use, land use change and forestry sector (LULUCF) with respect to climate change, monitoring and conserving genetic resources of forest trees, and forest environment monitoring. Furthermore, large part of research activities is on contract research, both in producing information and solutions to Latvian State Forests or market-oriented research in the fields important for forestry and forest industry. These studies consist of 73 customised research and development projects ordered by Latvian and foreign businesses with total funding over 6 million LVL in the period 2006-2012. International collaboration includes several projects on bioenergy, and increasing efficiency in sorting timber.

In addition to its national importance, "Silava" also collaborates with foreign companies, for example, the Finnish Forest Research Centre Tapio and the Swedish Energy Agency. Members of the staff have memberships of various boards (e.g., Board of Latvian State Forests, science advisory board of Latvian State Forests, forest advisory board of Ministry of Agriculture). Thus, "Silava" actively takes part in discussions on the forest policy of Latvia.

"Silava" has efficient means for distribution of information to end users, whether electronically, via printed articles for general audience and forest professionals, or presentations and meetings for interested audience.

Research environment and infrastructure

"Silava" is a large scientific unit with a healthy age structure and an even gender ratio. The number of PhD students is very high, with over 25 PhD students working presently at the Institute. "Silava" is the major institute supervising doctoral studies in forestry in its research projects although the degrees are officially supervised by the universities. In some fields, for example forest pathology, doctoral studies often include long research visits and studies abroad. However, most students stay in the Institute and receive their degrees from Latvian universities. Thus, important exchanges of expertise via foreign studies (degrees) and recruitment of researchers that have worked in foreign institutes for longer periods (doctoral degree, post doc) are still rare in "Silava".

Development potential

In addition to PhD students, a large proportion of researchers are young, having obtained their doctoral degree very recently. Therefore, the age group 25-35 is the largest (49 researchers) and the number of researchers in the oldest age group (over 55) is modest (17 researchers). The Institute has a very small administrative staff, most emphasis being put to research.

In addition to researchers, "Silava" has a reasonably sized technical staff (45) to help in laboratories and with field work.

"Silava" has six well equipped laboratories in molecular genetics, forest phytopathology, forest products processing, forest environment, silviculture and forest resources. The laboratories seem to be efficiently used (utilisation over 90% of capacity in many laboratories), and the efficiency is being improved by client orders. Silava has recently invested considerably in laboratory equipment.

Thus, "Silava" has a young age structure, good facilities and good international contacts, making its developmental potential considerable.

Conclusions and recommendations

The Panel was impressed by the scope and dynamism of this Institute's activities, especially its engagement with the forestry sector and its agencies, with its utilisation of recent EU funding for modernising its facilities, and its efforts to keep in international contact. It is addressing current and future issues, and has a substantial academic component to its activities in the form of doctoral students and post-doctoral researchers.

In the Panel's opinion, it could develop further its international reputation by fostering foreign contacts, and aiming for more influential roles in international collaborations (e.g., as a coordinator in EU projects). Publication strategy should be changed from national journals to international ones (and instead of Baltic forestry, should aim for internationally more visible journals). National journals (e.g., Mezzinatne) can be excellent means to inform end users on scientific findings in native languages and style suitable for general audience. Silava should also focus on issues of regional (i.e./e.g. Baltic/Scandinavian/Central European) interest, particularly where it has comparative advantages in terms of data, expertise or interest. In present day world where climate is changing together with forestry and forestry markets (e.g., free seedling markets within EU), sharing expertise (and e.g., long term field experiments) between countries becomes increasingly important.