

## Evaluation report

Evaluated point	Grade	Comments
Scientific impact of research	Good	<p>Overall the scientific impact of research is good. There are some groups that are clearly of high quality and have an excellent international reputation (such as plant physiology). There are also research groups such as those in plant health, soil sciences, and Silviculture and forest ecology that are well on their way to increasing their scientific impact. This is evidenced by participation in European research projects and networks. All other research groups definitely perform good research and there is scope for increasing R&amp;D outputs.</p> <p>This unit of assessment has three major divisions of research activity: the Institute of agriculture and environmental sciences; the Institute of forestry and rural engineering; and the Institute of veterinary medicine and animal science. The site visits allowed for time to look at the first two but less time was allocated to veterinary medicine and animal science. The scientific impact of the whole field of interest was good with some notable areas of high impact in plant biology and physiology, plant health and environmental impact on plant ecosystems. In animal and veterinary science there was evidence from funding and publications of satisfactory research especially in areas of animal production, welfare and transgenic technology.</p>
Sustainability and potential of research	Very good	<p>The recent reorganization at the Estonian University of Life Sciences means that the administration together with the scientists have carefully considered how to design the structure of research in order to optimize research capacity. This together with the relatively new campus with many well equipped laboratories and upgrades to several research stations creates an infrastructure conducive to increasing the scientific impact of research. The University has also worked to increase the international profile of the university. Research collaboration within the EU is well established and seems to be growing. The university recently created 12 postdoc positions to help promote research opportunities among younger scientists. It would be good for the university to try to actively use international contacts to encourage recent graduates of the doctoral programs to apply for postdoc periods outside of Estonia or at other institutions in Estonia.</p> <p>The institutional restructuring both in terms of new senior appointment, equipment and laboratories has had a very positive impact on scientific output and opportunities. Excellent use has been made of EU structural funding which has positioned the Department to be sustainable and maintain its scientific impact. The network of experimental</p>

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		<p>field stations and centres outside Tartu provides a key part of the overall infrastructure in support of both potential and sustainability. The proposed restructuring of buildings for food and animal science will also support sustainability and open up new directions</p>
<p>Societal importance of research</p>	<p>Very good</p>	<p>The societal importance of research at the Estonian University of Life Sciences is very good. Research in agricultural and veterinary sciences contributes to the success of this sector in Estonia. Close partnerships with ministries, state agencies, and other stakeholders. There is a good network of experimental stations that allows contact with stakeholders in many regions of the country. Several laboratory facilities are designed to facilitate joint ventures with industry. This collaboration is important for increasing appreciation of the role of research for innovation within Estonian companies. The mission of the university emphasizes importance of providing higher education in agriculture, forestry, and veterinary medicine. High quality education with a clear link to research activities will continue produce students with the capacity to improve the agricultural sector in Estonia. They will also be able to continue to participate at a high level in international cooperation, both governmental and industrial. There is clear awareness of the importance of performing research aimed at understanding the consequences of climate change for agriculture, forestry, and veterinary sciences. In addition research is designed to try to find solutions to problems facing society and producers in the context of a warmer more humid climate expected in the future. Some outreach activities were presented and there seems to be a great deal of communication with society. It was, however, not clear if there is a sustainable system for evaluation of outreach and if there are funds available for activities to inform about results of scientific investigations. Another area where the Estonia University of Life Sciences surely is active is in informing policy makers. This could be explained in a clearer manner.</p> <p>There is evidence of a good societal impact which will help society to address pressing global environmental issues such as climate change, management of biodiversity, efficiency of plant and animal growth and production.</p>
<p>Scientific basis in the field is sufficient to conduct doctoral studies. (This question should be answered only if: a) institution being</p>		<p>Yes, the scientific basis in the field is sufficient to conduct doctoral studies.</p> <p>It is noted with pleasure that the yearly reviews of PhD students seem to be conducted in a fair and good manner. The students were very aware of resources available to them. It was, in particular, mentioned that they were able to</p>

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<p>evaluated is conducting doctoral studies and; b) The field being evaluated is proposed to grant positive evaluation. If these conditions are met then: a) If the level of scientific basis is sufficient for conducting doctoral studies in every structural unit being evaluated, then the answer should be „yes“; b) If the scientific basis is not sufficient in some structural units, then those units should be listed.)</p>		<p>get funding for travel for research visits and conferences; this was from central university funds.</p> <p>The need for improving understanding of the value of a PhD degree outside the university was discussed. It seems that in industry and governmental organizations it is sometimes felt that a doctoral degree was seen as "over education" and not as added value when hiring.</p> <p>Overall there is a good environment for doctoral studies. Both the processes of selection, monitoring and encouragement to do good research are in place. Seminars, journal clubs and opportunities to have periods of study placement in foreign laboratories are available and are part of the culture of Doctoral studies in the Department. Selection of potential supervisors is also important for success of a PhD . The department has a good system in place to monitor this and to match the best students to the appropriate supervisor.</p>

## Summary assessment

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<p>Areas of special note as appropriate (Where necessary indicate sub-fields, assessment criteria, and/or structural units which, in the committee's opinion, were of a notably high level.)</p>		<p>Research in plant physiology is of very high quality. The research on ecophysiology in relation to modelling climate change is excellent. This area has been developed as a consequence of making a top level appointment to a Chair in the area. The establishment of Centres of Excellence provides a further level of enhancement of this field.</p>
<p>Areas in need of improvement as appropriate (Where necessary indicate sub-fields of the field being evaluated, assessment criteria, and/or structural units which, in the committee's opinion, revealed significant shortcomings.)</p>		<p>It was mentioned that plant physiology and crop production would be merged in the future to create responsibility area for crop science and plant biology. This is a good strategy for 1) increasing the scientific level of crop production research and 2) increasing the impact of plant physiological research on crop production.</p> <p>The university has many excellent research stations spread throughout Estonia. What strategy do the institutes have to encourage use of these facilities?</p> <p>The issues that veterinary medicine has to deal with are in the areas of zoonotic diseases, animal genetics, animal reproduction, animal welfare and translational medicine. The area of interaction between human and animal medicine is known as One Health. As a field its gaining increasing recognition in research and teaching in veterinary schools. The IVAS in Tartu is well placed in being co- located with high levels of expertise in medicine and molecular sciences. A veterinary school, whilst no doubt expensive in terms of facilities and staff is a tremendous asset to Tartu that provides a critical area of expertise in One Health and infectious diseases of man and animals. The current epidemic of African Swine fever is a good example of the need for vigilance in infectious diseases research. Although the basic facilities are present there is a need for a far greater level of investment in research staff and equipment. At present it compares poorly with other Departments in the Estonian University of Life Sciences and needs built up if the Estonian University of Life Sciences hopes to have research excellence in this field.</p>

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Assessment proposal to the Minister of Education and Research	To grant positive evaluation	The scientific impact of research in agricultural and veterinary sciences at the Estonian University of Life Sciences is good. In addition the university and research groups are actively working to improve their scientific impact. This together with the high societal importance of research at the Estonian University of Life sciences means that they should be granted a positive evaluation.

## Feedback

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<p>Feedback for institution (This question should be answered only if the institution asked for feedback from the evaluation committee in the self-report (about up to three specific areas of R&amp;D which it finds to be currently important, e.g., related to its development plan).)</p>	<p>The institution did not ask for feedback from the evaluation committee.</p>
<p>Suggestions for unit, institution, state etc. (As appropriate, committee can give additional feedback for the structural unit, the institution, or the State (please specify whom feedback is directed to) according to the directive assessment criteria for regular evaluation (article 7).</p>	<p>Although the Estonian University of Life Sciences has widespread participation in EU projects and are considered attractive partners, efforts should be made to increase leadership of projects. This may entail bringing in coordinators from projects to explain and inspire Estonian scientists to look for opportunities to coordinate international projects. This also needs financial and administrative support as coordination of EU projects is not trivial and demands resources.</p> <p>Although there is quite a lot of international cooperation this could be further encouraged by offering the possibility for international scientists to spend time in Estonia. This could be done by creating a program for inviting guest professors and scientists. It is difficult to recruit non-Estonians for permanent academic positions, but facilitating regular visits over a period of time can help build up new relationships and encourage new joint projects.</p> <p>All scientists have mentioned the need for more stable funding of salaries. This may be coming in the changes being worked on to bring about a tenure track career path. It is important that scientists participate in designing this process. It is also important to be aware of the need to offer a clear career path for young scientists. The criteria used to judge competence for promotion to each new level need to be clearly defined.</p>