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LECA - Laboratoire d'Écologie Alpine

Rapport Hcéres

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HCERES

High Council for the Evaluation of Research
and Higher Education

Research units

HCERES report on research unit:

Laboratoire d'Écologie Alpine

LECA

Under the supervision of
the following institutions
and research bodies:

Université Joseph Fourier - Grenoble - UJF

Centre National de la Recherche Scientifique - CNRS

Université Savoie Mont Blanc

HCERES

High Council for the Evaluation of Research
and Higher Education

Research units

In the name of HCERES,¹

Didier HOUSSIN, president

In the name of the experts committee,²

Denis BOURGUET, chairman of the committee

Under the decree N°2014-1365 dated 14 november 2014.

¹ The president of HCERES "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5)

² The evaluation reports "are signed by the chairman of the expert committee". (Article 11, paragraph 2)

Evaluation report

This report is the result of the evaluation by the experts committee, the composition of which is specified below.

The assessments contained herein are the expression of an independent and collegial deliberation of the committee.

| | |
|--|-------------------------------|
| Unit name: | Laboratoire d'Écologie Alpine |
| Unit acronym: | LECA |
| Label requested: | UMR |
| Present no.: | 5553 |
| Name of Director (2014-2015): | Ms Irène TILL-BOTTRAUD |
| Name of Project Leader (2016-2020): | Mr François POMPANON |

Expert committee members

| | |
|----------|--|
| Chair: | Mr Denis BOURGUET, INRA, Montpellier |
| Experts: | Mr Sébastien BAROT, IRD, Paris |
| | Mr Thierry BOULINIER, CNRS, Montpellier |
| | Ms Katell GUIZIEN, CNRS, Banyuls-sur-Mer (representative of the CoNRS) |
| | Ms Nathalie MACHON, MNHN, Paris (representative of the CNU) |
| | Mr Robby STOKS, University of Leuven, Belgium |

Scientific delegate representing the HCERES:

Mr Gabriele SORCI

Representatives of the unit's supervising institutions and bodies:

Ms Christelle BRETON (representative of the Doctoral School - Chimie et Sciences du Vivant - CSV - ED n° 218)

Mr Eric DEFRANCO, Université Joseph Fourier

Ms Anne GUERIN-DUGUE (representative of the Doctoral School « Ingénierie pour la Santé, la Cognition, l'Environnement » - EDISCE - ED n° 216)

Ms Martine HOSSAERT, CNRS

Mr Roman KOSSAKOWSKI, Université de Savoie

1 • Introduction

History and geographical location of the unit

The Laboratoire d'Écologie Alpine (LECA) was created in 2003 from the fusion of four entities: the Laboratoire de Biologie des Populations d'Altitude (LBPA, UMR 5553, population genetics and biology); the Groupe d'Etudes sur le Devenir des Xénobiotiques dans l'Environnement (GEDEXE EA 2945, ecotoxicology), Ecosystèmes et Changements Environnementaux (ECE, EA 3112, ecology), and the ATIP team of Sandra Lavorel (functional ecology). LECA is located in two cities 45 km apart: Grenoble [Campus Université Joseph Fourier (UJF), Saint Martin d'Hères] and Chambéry [campus Université de Savoie (UdS) Mont Blanc, Bourget du Lac].

Management team

Director: Irène TILL-BOTTRAUD

Deputy directors: Christiane GALLET, François POMPANON and Jean Philippe DAVID

HCERES nomenclature

SVE2_LS8 Évolution, écologie, biologie des populations

Unit workforce

| Unit workforce | Number as at 30/06/2014 | Number as at 01/01/2016 |
|--|-------------------------|-------------------------|
| N1: Permanent professors and similar positions | 16 | 15 |
| N2: Permanent researchers from Institutions and similar positions | 13 | 13 |
| N3: Other permanent staff (without research duties) | 20 | 22 |
| N4: Other professors (Emeritus Professor, on-contract Professor, etc.) | | |
| N5: Other researchers (Emeritus Research Director, Postdoctoral students, visitors, etc.) | 17 | 17 |
| N6: Other contractual staff (without research duties) | 9 | 9 |
| TOTAL N1 to N6 | 75 | 76 |

| Unit workforce | Number as at 30/06/2014 | Number as at 01/01/2016 |
|---|-------------------------|-------------------------|
| Doctoral students | 28 | |
| Theses defended | 35 | |
| Postdoctoral students having spent at least 12 months in the unit | 26 | |
| Number of Research Supervisor Qualifications (HDR) taken | 4 | |
| Qualified research supervisors (with an HDR) or similar positions | 21 | 21 |

2 • Overall assessment of the unit

Global assessment of the unit

LECA is performing outstanding research on mountain ecosystems and is strongly involved in training by research. Using concepts and methods from ecology and evolutionary biology, the unit aims at understanding ecosystem functioning and the maintenance of biodiversity, and to predict their responses to environmental change. On this topic, LECA has published more than 500 articles in international peer-reviewed journals (3/4 in journals of the first quartile including *Nature*, *Science*, *PNAS*, *TREE*, *Ecology Letters*) during the last 5 years and three members of the unit appeared among the top cited researchers in the field of *Ecology and Environment* (*ISI Web of Knowledge*). LECA has a unique place at the UJF (Université Joseph Fournier of Grenoble, now member together with the Université de Savoie of University Grenoble Alpes) as it is, locally, the only laboratory doing research in ecology. As a consequence, professors and researchers are deeply involved in training by research. They notably provide, annually, 5,400 hours of teaching in ecology and evolutionary biology and LECA is entirely responsible for the management of the Master Biodiversité Écologie and Évolution (BEE). The unit is also involved in the management of two other Masters, in the organization of several international summer schools and partner of several European teaching programs for PhD students. Accordingly, 35 PhD were defended at LECA in the last 5 years (28 ongoing). LECA has a high success in participating in or leading national and international projects, a strong involvement in initiating and/or coordinating research networks or platforms, an active participation in national and international expert panels, and displays an internationally recognized attractiveness for scientific visitors and new recruitments. LECA can be considered as one of the most influential research units working in ecology and evolution in France. It displays a very strong international recognition.

Finally, it is noteworthy that the recommendations that were put forward by the previous expert committee have been fully taken into account by the research unit. In particular, researches on ecotoxicology have been strengthened by 1) focusing more on a set of precise questions, 2) developing tight interactions with other projects performed at LECA (notably with the team GBA) and 3) recruiting an assistant professor to reinforce the team.

Strengths and opportunities in relation to the context

LECA has three competitive advantages: 1) the diversity and quality of the research carried out, 2) its strategic positioning in Grenoble/Chambéry and 3) its involvement in training by research.

1) The diversity and quality of research undertaken can be measured by the quantity, diversity and quality of LECA's publications. This research momentum certainly explains the ability of researchers to coordinate and/or to participate in numerous projects funded by local, national and European agencies.

2) Its positioning in Grenoble/Chambéry is interesting for two reasons. First, it is the only laboratory of Ecology at the UJF. Hence, it appears as a key unit not only for promoting this field of research locally, but also for all interdisciplinary projects that incorporate ecological and/or evolutionary dimensions. Second, due to its access to observation and experimentation fields nearby, LECA has focused its research on alpine/mountain environments. This gives the unit a strong originality in the national and international context. Moreover, much of the research themes

developed by LECA around this alpine ecosystem are very relevant to society (and this enhances the ability of the unit to obtain funding) as they involve conservation biology, environmental health and sustainable development.

3) LECA provides complete coordination of a master and is heavily involved in two other Masters. This massive involvement in teaching strongly increases the capacity of the unit to attract students (Masters and PhD students).

Weaknesses and threats related to the context

One of the strengths of LECA is its commitment to developing multidisciplinary programs. This originality can however also convey a threat as most topics are covered by only one or a few researchers. In a context where hiring new scientists is particularly difficult, the sustainability of this diversity and the associated ability to carry out multidisciplinary projects can be easily undermined. In addition, while the overall research dynamics - and associated publications - of the unit is remarkable, it is partly based on the dynamics of a few individuals, and their departure might significantly weaken the unit. The current cut in research funding could also lead to a reduction in the capacity of LECA 1) to fund internal (multidisciplinary and innovative) projects and 2) to recruit temporary staff (especially technical). This non-permanent staff - which has greatly increased in recent years - currently ensures a considerable part of the work required by the unit projects. Technicians and engineers currently meet the administrative and scientific needs generated by the multiple contracts obtained by LECA. However, this achievement is done at the expense, for most of them, of a strong work pressure. Finally, the current renovation and maintenance works of the building where LECA is hosted would apparently not be sufficient to cater for the actual needs of office and lab space.

Recommendations

The expert committee recommends the LECA members to maintain their efforts 1) in attracting new forces to preserve (and, ideally, to reinforce) the existing skills. This effort must not only be focused on the recruitment of researchers and professors, but also of technicians and engineers in order to keep a reasonable C & EC/ITA ratio in the unit, 2) in obtaining the possibility of internal promotion from assistant professor to professor and 3) in gaining more space (including the building of greenhouses) to perform their researches in good conditions.

The expert committee recommends the management team to maintain the very collaborative attitude that characterizes LECA. For this purpose, the management team might need to develop tools for mitigating problems which may arise from a new internal organization no longer based on teams. The management team could notably improve the procedure to obtain technical support for PhD students, organize more than one "journée des entrants" per year, ensure that ITAs homogeneously and fairly appear as co-authors in scientific publications.

The management team could help non-permanent staff - and notably those recruited on long-term contracts - to obtain reliable information on the Sauvadet act. They indeed need to better know their rights and to be better informed on the policy currently adopted by the institutions and research bodies the LECA depends on.