CSGA - Centre des sciences du goût et de l'alimentation

Rapport Hcéres

HCERES

High Council for the Evaluation of Research and Higher Education

Research units

HCERES report on interdisciplinary research unit:

Centre for Taste and Feeding Behaviour

CSGA

Under the supervision of the following institutions and research bodies:

Université de Bourgogne – UB

Centre National de la Recherche Scientifique – CNRS

Institut National de la Recherche Agronomique – INRA

AGROSUP DIJON - Institut National Superieur des Sciences Agronomiques de l'Alimentation et de l'Environnement

Evaluation Campaign 2015-2016 (Group B)

HCERES

High Council for the Evaluation of Research and Higher Education

Research units

In the name of HCERES,[1]

Michel Cosnard, president

In the name of the experts committee,[2]

Anne Didier, chairwomen 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 sole result of evaluation by the expert committee, the composition of which is specified below.

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

Unit name:	Centre for Taste and Feeding Behaviour
Unit acronym:	CSGA
Label requested:	UMR AgroSup Dijon CNRS Inra Université Bourgogne - UB
Current number:	UMR 6265 CNRS – 1324 Inra
Name of Director (2015-2016):	Mr Luc PENICAUD
Name of Project Leader (2017-2021):	Mr Lionel BRETILLON

Expert committee members

Chair:	Ms Anne DIDIER, Université Claude Bernard, Lyon
Experts:	Mr Franco BIASIOLI, Edmund Mach Foundation, San Michele all'Adige, Italy
	Ms Jacqueline BLISSETT, University of Birmingham, UK
	Ms Lucile CAPURON, Inra, Bordeaux (representative of CSS Inra)
	Ms Nathalie GUERINEAU, CNRS, Montpellier (representative of CoNRS)
	Mr Erminio MONTELEONE, Università degli Studi di Firenze, Italy
	Mr Ruben NOGUEIRAS, University of Santiago de Compostela, Spain
	Mr Michel PAQUES, CHNO des Quinze-Vingts & Institut de la Vision, Paris
Scientifics delegates representing the HCERES:	
	Mr Jean-François HOCQUETTE
	Mr Henri CHABROL
Representative of supervising institutions and bodies:	
	Mr Alain BONNIN, Université de Bourgogne
	Mr François ROCHE-BRUYN, AgroSup Dijon
	Mr Jean DALLONGEVILLE, Inra, Human Nutrition Department
	Ms Armelle LETURQUE, CNRS, INSB
Head of Doctoral School:	
	Mr Thierry RIGAUD, Doctoral School ED n°554 "Environnements-Santé", Université de Bourgogne

1 • Introduction

History and geographical location of the unit

The CSGA was created in 2010 from the gathering of 4 laboratories ("Centre des Sciences du Goût", UMR CNRS/Inra, University of Burgundy; "Flaveur, Vision, Comportement du Consommateur", UMR Inra/AgroSup Dijon, "Développement et Communication Chimique chez les insectes", UMR CNRS/University of Burgundy; "Mitochondrie, Plasticité, Métabolisme", UMR CNRS/University Paul Sabatier Toulouse).

Inra, CNRS and University of Burgundy (UB) are the 3 supervisory authorities of the CSGA.

Nowadays, 207 persons are currently affiliated to the CSGA among which 67 permanent researchers (49.7 Full Time Equivalent (FTE)) and 78 technical staff (70.2 FTE).

Initially composed of 9 teams and of the ChemoSens platform, the organization of the CSGA has evolved during the last years with emergence in 2014 of 2 new groups and a significant amount of between-group mobility resulting in the proposition of merging of two groups. For the next quinquennium, the CSGA proposes 10 teams and the ChemoSens platform. The unit also runs internal facilities: a human facility (equipped with experimental and storage rooms), an animal facility including rodents, rabbits and flies, as well as molecular biology, cellular biology, histology and chromatography facilities.

The CSGA is located in three different buildings within walking distance of the Dijon University Campus. Some groups are split between two buildings. The construction of a new building is scheduled with funds from "Region Bourgogne", Inra and UB with opening in 2017. This new building (500 m^2) will be located on the Inra Campus, next to the main current CSGA building. It will harbour the ChemoSens platform which is currently split in two different locations. Thanks to several subsequent moves, the entire CSGA will expand across two (instead of 3) buildings and no team will be separated in different buildings any longer.

Management team

The unit director is assisted by a deputy director and a general secretary. All three meet on a weekly basis. The current director was team leader until 2014 and the deputy director is actually team leader. The deputy director assists the director on scientific issues. The general secretary is the administrative manager. The general secretary of the CSGA, who has also the title of deputy director in charge of the administrative support to the unit at INRA and UB, supervises a staff of 17 (human resources 2, documentation 1, budget and contracts 6, technical support 4).

HCERES nomenclature

Sous-Domaine principal: SVE1

Sous-Domaines secondaires: SVE1_LS4 et SVE1_LS5 et SHS4_2

Scientific domains

The CSGA activity is centered on food sciences and technology with multidisciplinary expertise in chemistry, physicochemistry, physics, consumer sciences, sensory evaluation, neuroscience, cognition and psychology.

The unit is operating in the field of chemosensory perception and its relationships with eating behaviour. Using animal and human models, the unit conducts interdisciplinary research spanning from oral physiology and physico-chemical characterization of food-related stimuli or neurobiological processing of sensory signals and their ethological significance to cognition and psychology of food representation and related behaviours. Interests of the unit also include multisensory integration, developmental and aging issues.

Understanding food perception and feeding behaviour is of primary importance. From a basic knowledge perspective, it is an excellent context to study and dissect the neural basis of behaviour. Research in this field also has strong implications in human health, in several pathologies but also in normal development or aging. Finally, the topic has strong potential outcomes in food technology, public health management and environment.

Unit workforce

Team workforce("Full Time Employee" (FTE) between brackets)	Number on 30/06/2015	Number on 01/01/2017
N1: Permanent professors and similar positions	33 [16]	31 [15.5]
N2: Permanent researchers from Institutions and similar positions	34 [33.7]	33 [32.7]
N3: Other permanent staff (technicians and administrative personnel)	78 [70.2]	76 [68.2]
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	1 [0.5]	
N5: Other researchers (Emeritus Research Director, Postdoctoral scientists, visitors, etc.)	11	
N6: Other contractual staff (technicians and administrative personnel)	26	
N7: PhD students	30	
TOTAL N1 to N7	**213 [187,4]**	
Qualified research supervisors (HDR) or similar positions	38	

Team record	From 01/01/2010 to 30/06/2015
PhD theses defended	55
Postdoctoral scientists having spent at least 12 months in the unit	38
Number of Research Supervisor Qualifications (HDR) obtained during the period	9

2 • Overall assessment of the interdisciplinary unit

Introduction

The unit is composed of 10 teams and 1 platform, ChemoSens, for a total staff size of about 200. All have in common the interest in understanding feeding behaviour. Each contributes at different levels of investigation and using various up-to-date technologies in a cooperative manner, providing the CSGA with a strong scientific identity. The current scientific strategy is in the continuation of the initial will of the unit of setting up a large and multidisciplinary consortium devoted to understanding food perception and feeding, in accordance with the will of parent authorities (see below). A striking characteristic of CSGA is the high rate of technical support with a mean of 1.4 technical staff per researcher.

The CSGA is an important element of the scientific strategy of national funding bodies. The Human Nutrition Division and the Food Technology Division of Inra have established elucidation of the determinants of feeding behaviour as a scientific priority. CSGA addresses this issue and is thus a highly strategic group for Inra. The issue of Aging is another priority of Inra divisions and is also, although more recently, addressed by the CSGA. This strong support of Inra is visible in the investment in personnel, including 8 new researcher permanent positions attributed to the CSGA over the last 5 years and a strong investment in technical support. The University of Burgundy defined Food, Environment and Health priority domains in the context of its strategic scientific differentiation. The scientific focus

of CSGA clearly stands within the strategic interests of the University of Burgundy. In addition, its multidisciplinary approaches, covering basic and applied sciences, and the strong links with teaching through the high number of university staff attached to the CSGA and CSGA contribution to the doctoral school reinforced the rationale for the university to support the CSGA. The CNRS also invests in the CSGA. It is worth noting that 3 CNRS researchers are young leaders of teams developing more basic research projects, indicating the support of CNRS to the development of basic sciences within the CSGA. Finally, the AgroSup Dijon School, a national engineer school committed to both teaching and research is also a partner of CSGA. Although no doctoral student from AgroSup Dijon is currently present at CSGA, 5 teachers and 2 technicians from AgroSup are doing research at the CSGA, and this pool will be reinforced by one professor in the future.

In summary, the CSGA is strongly supported by its managing bodies and stands at the core of their synergistic projects. It is important also to note that the CSGA activities and project are highly consistent with the region of Burgundy scheme of smart specialization, in coherence with the CSGA parent authorities' priorities. The CSGA thus benefits from a consistent and long-term support and funding from parent authorities and from the Burgundy region.

Strengths and opportunities in the context

The expert committee would like to put forward the high quality of the scientific management conducted by the current direction over the last years. In compliance with previous recommendations, management of the unit has allowed recruitment of 10 new researchers (Inra, CNRS and UB). Attracting excellent young scientists allowed the emergence of new groups led by young scientists and involved in basic research. While maintaining and developing the long standing expertise of CSGA in sensory evaluation and food technology, the CSGA has thus been successful in setting up the basis for a strong basic research that will feed applied research in the future. The CSGA has also greatly increased its international visibility since numerous applications to European calls have been successful (Marie Curie fellowships, 2 FP7 projects as coordinator, 1 ERC grant). Internal calls have been launched to foster internal collaborations. In this context, it is surprising that the unit did not seek advice from an external advisory board along the last 5 years. The discussions led by the director should now shortly lead the CSGA to take this mandatory step.

On average, 80% of the funding of CSGA, not including staff salaries, is obtained from external sources, with a large contribution of the Regional Council of Burgundy (up to 40% of total budget in 2013 and 2014), significant level of European funding (about 17%), industries (14%) and national grants (19%). It is worth noting that the Regional contribution has dropped significantly over the last years, as did the Inra funding, resulting in a reduction of the budget from about 5 M€ in 2013 to about 3.8 M€ in 2015.

The CSGA is well integrated in the local scientific network. CSGA is part of a continuum of the Inra campus and interacts with Inra labs interested in agriculture or microbiology of food. Active collaborations also exist between CSGA and Inserm (Nutrition, Lipids and Cancer) teams of Dijon as well as physicians from the University of Burgundy and other regional campuses.

The CSGA has a very strong scientific identity and an excellent national and international visibility. It tackles issues of primary importance for the understanding of food perception and intake with many applied perspectives in medicine and food technology. The CSGA is a multidisciplinary unit, and multidisciplinarity is applied to a globally coherent project. The scientific production has increased in quantity and quality over the last years. The unit has been attractive for very good young scientists, boosting the development of basic research. The unit is active in training through research of both PhD students and post-doctoral fellows.

The unit benefits from a very strong support of its management bodies and is at the crossroads of the main priorities of Inra and University of Burgundy. The CNRS supports the development of basic research and the Burgundy Region invests a lot in the unit. As a consequence of this long-lasting and strong support, the research staff has increased, the technical staff is abundant and the overall level of funding excellent.

The CSGA benefits from the environment of the Inra campus and of Inserm or CNRS labs with which it has active collaborations. The recent success to the I-SITE call should even foster in-site interactions and boost CSGA objectives.

Weaknesses and threats in the context

The impact of the scientific advances obtained by the CSGA can still be improved by increasing the impact factor of the journals in which they are published. The international mobility of PhDs is very low while european projects are run by the unit and could certainly offer opportunities for students from CSGA to perform short or longer stays in foreign partners' laboratories.

Although the research focus of CSGA is clear, there is a risk for dispersion among many small projects; some of them are very specific and applied to specific products often through industrial collaborations and may not carry a global heuristic value. This may hamper the ability to increase the level of publications.

The CSGA has set up the ambitious goal of reinforcing basic research. Highly talented young scientists are put forward as team leaders but their teams are not yet fully secured in terms of funding and staff.

The level of funding is excellent but a drop in the global budget is noticeable over the last few years.

Recommendations

Basic research findings deserve to have more effort put into increasing the number of publications in high impact journals. This should be facilitated by recruitment in the centre of young scientists familiar with excellence in publication from their previous training.

Attention has to be paid to the new groups in terms of integration of the project to CSGA and of allocating or recruiting permanent staff (both researchers and technicians) in order to consolidate them. Funding is also a strong issue for these teams which cannot count on private collaborations as much as teams conducting more applied research.

The unit will have to keep maintaining the balance between basic and more applied research.

The unit should be proactive to foster translational research. The scientific activity is favourable to such development but the strategic plan to achieve is still somewhat vague.

The financial support to the CSGA internal call could be increased and focused on risky projects that are more difficult to fund by other means.

The strategic plan at the unit level could propose some ambitious goals that could be achieved by the synergy of CSGA teams (and only by CSGA teams), thanks to its multidisciplinary approach and could definitely make the CSGA more than the sum of its teams.