

FINAL RESUME ON THE RESEARCH UNIT:
Botany and Modelling of Plant Architecture and
Vegetation - AMAP

UNDER THE SUPERVISION OF THE
FOLLOWING INSTITUTIONS AND
RESEARCH BODIES:

Université de Montpellier

Centre de Coopération Internationale en
Recherche Agronomique pour le
Développement - CIRAD

Centre National de la Recherche Scientifique -
CNRS

Institut National de Recherche pour
l'Agriculture, l'Alimentation et l'environnement-
INRAE

Institut de Recherche pour le Développement -
IRD

EVALUATION CAMPAIGN 2019-2020
GROUP A



In the name of Hcéres¹:

Nelly Dupin, Acting
President

In the name of the experts committee²:

Hans Kerp, Chairman of the committee

Under the decree No.2014-1365 dated 14 November 2014,

¹ The president of Hcéres "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 experts committee". (Article 11, paragraph 2).

Tables in this document were filled with data submitted by the supervising body on behalf the unit.

UNIT PRESENTATION

Unit name:	Botany and Modelling of Plant Architecture and Vegetation
Unit acronym:	AMAP
Current label and N°:	UMR 51 (CIRAD), UMR 5120 (CNRS), UMR 931 (INRAE), UMR 123 (IRD), UMR 27 (UM)
ID RNSR:	200317641S
Application type:	Renewal
Head of the unit (2015-2020):	Director: Mr Thierry FOURCAUD
Project leader (2021-2025):	Director: Mr Thierry FOURCAUD
Number of teams and/or Axis:	3

EXPERTS COMMITTEE MEMBERS

Chair:	Mr Hans KERP, Westfälische Wilhelms-Universität Münster, Germany
Experts:	Mr Guillaume BESLON, Institut national des sciences appliquées, Lyon (representative of CSS IRD)
	Ms Sandrine CAQUINEAU, IRD, Bondy (representative of support personnel)
	Ms Catherine FERNANDEZ, Aix Marseille Université (representative of CNU)
	Mr Frank HILKER, Osnabrück University, Germany
	Mr Henrik JONSSON, University of Cambridge, United-Kingdom
	Ms Olga OTERO, Université de Poitiers (representative of CoNRS)

HCÉRES REPRESENTATIVE

Mr Serge DELROT

REPRESENTATIVES OF SUPERVISING BODIES

Mr Laurent AUGUSTO, INRAE

Mr Olivier DANGLES, IRD

Mr Thierry LEFRANÇOIS, CIRAD

Ms Jocelyn MÈRE, CNRS

Ms Agnès MIGNOT, CNRS

Mr François PIERROT, Université de Montpellier

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

AMAP was founded in the 1980s as an institute to combine botany with informatics and mathematics. Strengthened by the attachment of other research institutions that broadened the scope, AMAP developed over the years to integrate a very wide array of plant sciences, thereby addressing fundamental research questions, developing plant-related software and applications, and fostering applied research. Inter- and transdisciplinary research is carried out in three intimately related axes. Most researchers generally do not belong to a single axis, but to two axes. AMAP is based in Montpellier with locations in Cayenne and Nouméa, and has partnerships with various academic and non-academic institutions, primarily in the Southern Hemisphere. AMAP has five supervisory bodies: i.e., University of Montpellier, CNRS, CIRAD, INRAE and IRD. AMAP is a member of LabEx Agro, CeMEB and CEBA, is associated to LabEx NUMEV, and is part of the national infrastructure eReCoNat and of the Convergence Lab #DigitAG. Agro, CeMEB, NUMEV and #DigitAG are integrated in the i-site MUSE.

MANAGEMENT TEAM

Director: Mr Thierry FOURCAUD; Deputy Director: Mr Raphaël PÉLISSIER and
Mr Jean-François MOLINO

HCÉRES NOMENCLATURE

SVE1_1 Biologie cellulaire et biologie du développement végétal

SVE1_2 Évolution, écologie, biologie des populations

SVE1_3 Biotechnologies, sciences environnementales, biologie synthétique, agronomie

ST1_2 Mathématiques appliquées

ST6_1 Informatique

ST6_3 Automatique, signal, image

THEMATICS

The AMAP unit studies plants and plant systems through multidisciplinary approaches that cover biology, mathematics, informatics, physics, at scales ranging from the cell to the landscape. The domains investigated include plant biology, agronomy, ecology, systematics and paleobotanics. Three main axes are developed (a) present and past plant biodiversity; (b) Biomass and production of plants and plant systems (c) Plant and plant systems modelling.

UNIT WORKFORCE

Botany and Modelling of Plant Architecture and Vegetation (AMAP)		
Active staff	Number 06/30/2019	Number 01/01/2021
Full professors and similar positions	3	4
Assistant professors and similar positions	2	2
Full time research directors (Directeurs de recherche) and similar positions	6	6
Full time research associates (Chargés de recherche) and similar positions	20	19
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	20	20

High school teachers	0	1
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	26	28
Permanent staff	75	78
Non-permanent professors and associate professors, including emeritus	0	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	2	
PhD Students	31	
Non-permanent supporting personnel	16	
Non-permanent staff	49	
Total	124	78

GLOBAL ASSESSMENT OF THE UNIT

Over the years AMAP has developed into a highly successful and unique research facility that successfully integrates a very wide array of plant sciences – including taxonomy, biodiversity and ecology of fossil and living plants, plant architecture, physiology, biomimetics and vegetation science – with climatology, remote sensing, mathematical modelling and informatics, with a strong focus on developing countries. In this respect AMAP played and still plays a pioneering role.

AMAP scientists have a high publication activity in international peer-reviewed journals. AMAP hosts many scientific databases, internet and software platforms. One of the most visible and successful practical applications is Pl@ntNet, a mobile- phone-based plant identification tool with no less than 12 million users.

Research topics are strongly – but not exclusively – focused on developing countries and the research transfer to Southern Hemisphere countries is very good. AMAP hosts a large group of students and researchers from various parts of the world, from MSc students to post-docs. A considerable part of the budget consists of third-party funding, from funding agencies and industrial partners.

The unit is characterized by a strong sense and culture of interdisciplinarity rarely achieved at a level above a small research team. The unit is organized by projects rather than in fixed structures. Frontiers between individual axes and themes are kept as permeable as possible in order to facilitate cooperation and interdisciplinarity. There is a very positive work spirit and dedication at all levels. The structure of AMAP is very open and democratic, without strong hierarchies offering a very inspiring work environment. Although the structure of AMAP seems very complex – especially for outsiders – this model, characterized by a bottom-up approach, works in practice remarkably well.

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2 rue Albert Einstein
75013 Paris, France
T. 33 (0)1 55 55 60 10

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